Helping Middle School Girls At Risk for School Failure Recover Their Confidence and Achieve School Success: An Experimental Study

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Abstract

Middle school girls who are at risk have experienced a disproportionate number of intense and disruptive traumatic life events. Such events can adversely affect healthy development and often contribute to higher levels of school failure and problem behavior. Few programs focus on helping at-risk middle school girls achieve school success through gender-specific developmental intervention, and little research has examined the outcomes of such programs. This study describes the lifetime histories of trauma and developmental challenge among a sample of at-risk middle school girls and confirms Project Challenge as an effective program for helping girls recover their self-confidence and succeed in school.

The quantitative portion of this mixed methods study used a true experimental design. Repeated Measures ANOVA results supported significant differences in: self-confidence, self-esteem, perceived social support, mattering, and identity. Effect size estimates suggested a strong effect on self-confidence; a stronger-than-moderate effect on self-esteem, mattering, and identity; and a moderate effect on perceived social support. Gains in self-confidence, self-esteem, and identity persisted two weeks after treatment. Qualitative interviews confirmed the study's quantitative findings. A one-year follow-up found 35 of 35 participants maintaining successful school outcomes.

Introduction

In contemporary American culture, many adolescent girls encounter violence, sexual exploitation, fragmented families, serious threats to emotional health, stereotyped gender roles, and unrealistic messages about appearance as well as waning self-confidence, self-esteem, and sense of identity (Johnson, Roberts, & Worell, 1999; Pipher, 1994; AAUW, 1992). Each challenge offers girls both opportunities to grow and exposures to risk. Most girls navigate these challenges successfully and grow into healthy, well-adjusted, competent women (Johnson, Roberts, & Worell, 1999). They struggle, but overcome these difficulties and emerge strong, capable, and confident.

Some girls struggle more than others. They may face more challenges or more intense threats, or they may possess fewer personal or social resources to meet the challenges they face. Regardless of the specific cause or situation, these girls become overwhelmed by threats to their well-being and, as a result, develop beliefs and choose behaviors that place them "at risk" of both school failure and of failing to succeed in life. Being "at risk" means that, in some way, the odds are stacked against a person.

Unfortunately, a history of trauma is one of the most common challenges among adolescent school girls who are failing in school and choosing problem

behaviors (Hawkins, et al., 2009; Acoca, 1999; Manigha, 1998). Specifically, failing girls often have histories of sexual, physical, and emotional abuse (Hawkins, et al., 2009; Mullis, et al., 2004; Acoca, 1999; Daniel, 1999; Manigha, 1998); family fragmentation and separation from nurturing adults via divorces that result in little or no contact with a parent, parental incarceration or substance abuse (Hawkins, et al., 2009; Acoca, 1999; Daniel, 1999; Manigha, 1998); academic failure and disconnection from school (Hawkins, et al., 2009; Mullis, et al., 2004; Acoca, 1999; Manigha, 1998); one or more serious health issues such as suicidal ideation, depression, pregnancy, and substance abuse (Hawkins, et al., 2009; Mullis, et al., 2004; Acoca, 1999; Daniel, 1999); lacking social and work skills (Manigha, 1998); lacking hope for the future (Mullis, et al., 2004), feeling life is oppressive (Mullis, et al., 2004); and association with deviant peers (Mullis, et al., 2004). Girls who experience these traumas during early adolescence represent an especially vulnerable group (Mullis, et al., 2004; Manigha, 1998).

These traumatic and painful life experiences often disrupt the normative processes associated with healthy development (Hawkins, et al., 2009; Acoca, 1999; Manigha, 1998). Too often, these experiences undermine a girl's developing sense of confidence and personal power, making it difficult to develop healthy and responsible ways to meet their emotional needs, cope with adversity, and achieve in school. Further, these painful experiences present substantial challenges

of their own, related to coping and recovery. Disruptive challenges that demand intrapersonal and interpersonal resources frequently leave girls more focused on coping with life than on achieving in school.

Not only are these challenges and traumas well-established risk factors for school failure, but many of them indicate a tendency toward becoming a youth offender, high-risk health behaviors, and less desirable overall life outcomes. For instance, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) reports that girls' delinquency is highly correlated with physical and sexual abuse, family fragmentation, school failure, untreated health problems, especially those related to mental and emotional health, and a convergence of risk factors during the middle school years (Bilchik, 1998; Bilchik, 1999; Chesney-Lind, 2001; Hawkins, et al., 2009). Further, these young women are more vulnerable to substance abuse, high-risk sexual behavior, continued victimization or abuse, and mental health problems (Miller, Malone, & Dodge, 2010; Crosby et al., 2004). The harmful consequences of which are not limited to early adolescence but— in the absence of intervention—can last well into adulthood (Aalsma & Lapsey, 2001; Bardone, et al., 1998; Kofler, et al., 2011).

This study examines the influence of a gender-specific program designed to intervene by helping struggling middle school girls begin healing from, coping with, and recovering developmental progress lost to traumatic and painful life experiences, while promoting self-confidence and school success.

Table 1
Research Question 1: History of Developmental Challenge

		n	Percent
Abuse		33	94.29
	Physical Abuse	25	71.43
	Sexual Abuse	9	25.71
	Received Treatment	4	11.43
Family Fragmentation		33	94.29
	Parents' Divorce	29	82.86
	Parents' Incarceration	17	48.57
	Parents' Substance Abuse	11	31.43
	Currently Living with Mother	32	91.43
	Currently Living with Father	10	28.57
School Failure		35	100.00
	School Behavior Problems	35	100.00
	Academic Failure	31	88.57

Methods

Research Design

This study used a component mixed methods design (Morse, 2003). Quantitative methods were used as the dominant form of data collection and analysis in this study. The quantitative portion of the study used a true experimental repeated measures cross-over design. This design uses random assignment to create two separate groups and allows each group to be assigned to both experimental and control conditions at different times in the study (Streiner & Norman, 1998).

Qualitative methods were used in a supporting role. Participant exit interviews were used to explore participant perceptions of Project Challenge and the outcomes associated with their Project Challenge experience. Individual and group interviews were conducted by a trained facilitator (Hatch, 2002; Glesne, 2006).

Participants

Study participants included girls 12 to 15 years old. All participants were referred by alternative middle schools in the North Central Florida area. Each school referred 100% of their female population for the study, and 95% (N=37) of those referred chose to participate in the study.

Informed consent was obtained in writing from each participant's parents or guardians. Each participating alternative school sent informed consent forms home with participants. Parent/guardian informed consent was also confirmed by telephone.

Measures

A battery of instruments was used to measure the five dependent variables: self-confidence, self-esteem, perceived social support, mattering, and identity.

Self-confidence. Self-confidence was measured using a combination of the Pearlin Mastery/Self-efficacy Scale (Pearlin et al., 1981) and the Hope Scale (Synder et al., 1991). Both scales described participant confidence in their ability to positively affect the outcomes of their lives. The Pearlin Mastery/Self-efficacy Scale (Pearlin et al., 1981) measures "the extent to which people see themselves in control of the forces that importantly affect their lives" (Pearlin et al., 1981, p. 340). Higher scores suggest higher levels of global self-efficacy or confidence in their ability to make successful life decisions and behave in ways conducive to success. Sample items include "I can do just about anything I set my mind to," and "I often feel helpless in dealing with my problems." The Hope Scale (Synder, et al., 1991) measures the

"perception that goals can be met" (p. 571) The scale consists of items related to individuals' confidence in their ability to positively influence their future. Sample items include "My past has prepared me for future success," "I energetically pursue my goals," "There are lots of ways around any problem," and "I can think of many ways to get the things in life that are most important to me."

Self-esteem. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) measures individuals' respect for themselves and their sense of worthiness. Higher scores indicate the strength to which people believe they are "good enough"—not better or worse than others. Sample items include "I am able to do things as well as most other people," "I take a positive attitude toward myself," and "I feel that I have a number of good qualities."

Perceived Social Support. The Multidimensional Scale of Perceived Social Support (Zimlet et al., 1988) assesses individuals' "perceptions of their level of social support from family, friends, and a significant other" (Canty-Mitchell & Zimlet, 2000, p. 392). Sample items include "My family really tries to help me," "There is a special person there when I need them," and "I can count on my friends when things go wrong."

Mattering. The short form of the Mattering Index (Elliot, Kao, & Grant, 2004) measures "the perception that we are a significant part of the world around us" (Elliot, et al., 2004, p.). Sample items include "For whatever reason, it is hard for me to get other people's attention," "My successes are a great source of pride to people in my life," and "People count on me to be there in times of need."

Identity. The Identity Sub-scale of the Adolescent Personality Style Inventory (Lounsbury et al., 2005) measures individuals' sense of their level of identity formation. Sample items include "I have a firm sense of who I am," and "I have a clear set of personal values or moral standards."

Demographic and Developmental Challenge Information. As part of Project Challenge, participants are required to complete an assessment interview. Assessment interviews are routinely conducted by a Project Challenge team member trained to conduct assessment interviews of a highly personal nature. Information related to developmental challenge was retrieved from these records. The Project Challenge Assessment Interview also includes a variety of demographic items. Demographic information for the study was retrieved from existing program records.

Table 2
Research Question 2: Interaction Between Treatment and Time

	F	df	p-value	Partial Eta Squared	Observed Power
Self-confidence	6.171	1.864	.005	.310	.919
Self-esteem	4.408	2.000	.016	.128	.834
Perceived Social Support	3.209	2.000	.048	.100	.713
Mattering	5.107	1.971	.009	.150	.879
Identity	4.505	1.817	.018	.139	.818

School Success Data. A 10- to 12-month follow-up was conducted to determine levels of student success after program completion. Existing school records were used to determine whether or not, during the preceding 10 to 12 months, participants had been suspended or expelled, had more unexcused absences than district policy allowed, and had a GPA of 2.5 or higher during their last semester in school.

The Project Challenge Program

Project Challenge began 12 years ago as an outdoor and community service organization dedicated to meeting the needs of delinquent adolescents. Originally, both boys and girls participated in the organization's programs, and the different factors influencing boys' and girls' delinquency were not incorporated into program design. A joint county and city-sponsored review of local youth development programs identified a community-wide need for gender-specific girls' programming emphasizing school success, reduced school dropout rates, delinquency prevention, and the promotion of emotional health of young adolescent girls who are at risk. As a result of this review, the Project Challenge organization narrowed their focus to collaborating with public middle schools as they worked to meet the needs of struggling girls. After two preliminary pilot studies, the current experimental study was conducted to examine the effects of the revised program.

This Project Challenge program consisted of four phases. Although each phase included activities unique to that particular segment of the program, a clearly defined philosophy concerning what best promotes the development of middle school girls who are at risk unified all four phases. The total program lasted two weeks, followed by approximately two months of follow-up support.

Pre-program Team Training. Project Challenge team members received comprehensive training prior to the study. Each team member participated in two types of training. First, team members were trained to be effective with the target population. This training included the *Model of Girls' Resilience for Early Adolescents*, principles of girls' development, challenges faced by at-risk girls, and behavior counseling skills. Second, all team members were trained to maintain program fidelity. This training focused on curriculum and consistent program delivery.

Phase 1: Assessment. Phase 1 focused on establishing contact with treatment group participants. Activities included an individual meeting with a program team member. During this meeting, the program team member conducted a brief orientation, answered participant questions, and conducted a brief assessment interview. During this phase, a program team member also contacted each participant's parent or guardian, requested their support for the program, and encouraged active communication and involvement with the participant during the program.

Phase 2: Preparation. Phase 2 focused on developing safe and trusting relationships between adult team members and program participants, and teaching wilderness camping, hiking, rock climbing, rappelling, and whitewater safety skills. This phase consisted of four training sessions. Each session began with an overview of the day's training activities and a two- to four-minute talk about a topic relevant to an aspect of development. At the end of each session, a journal topic was read by a Project Challenge team member, and participants were given 10 to 15 minutes to respond to the topic in their personal journals. Sessions concluded with a facilitated discussion about the assigned journal topic and a summary and assessment related to the day's training activities.

Phase 3: Challenge Trip. Phase 3 consisted of a four-day adventure camping trip. During this phase, participants camped in a primitive portion of the Cherokee National Forest in Tennessee where they completed a series of outdoor adventure challenges, including rafting two whitewater rivers, completing two strenuous wilderness hikes, climbing one 75-foot rock wall, and rappelling one 75-foot wall and one 175-foot wall at the top of a 1,000-foot cliff.

Journal assignments and "campfire" discussions provided a structured curricular framework for the challenge trip experience. The essence of the trip experience consisted of a combination of personal experience, individual reflection, and growth-promoting relationships with others.

Phase 4: Transference. Phase 4 included activities designed to help participants transfer what they learned on the challenge trip to their personal lives. Activities included goal setting and participation in a Family and Friends Celebration. Participants set personal goals to help them apply developmental lessons learned on the trip directly to real challenges they face in their personal lives. Participants chose the challenges they wanted to address and the steps they would take to achieve those goals.

The final group session focused on participants sharing their program experiences with family and friends. This session occurred approximately two days after the trip. The Family and Friends Celebration session consisted of a catered dinner, a slide presentation highlighting the accomplishments of each girl, participant speeches and goal sharing, opening the climbing tower to family and friends, and climbing demonstrations conducted by participants. The goal of this session included inviting participants' ongoing sources of social support and mattering to engage tangibly in the participants' experience, learning, and growth.

Data Analysis

Methods for data analysis were selected based on the nature of the research question. A Type I error rate was set at .10 for all tests. Researchers often set a .10 error rate in social science research, particularly in conjunction with preliminary studies.

Research Question 1: What levels of developmental challenge are prevalent among adolescent girls attending alternative middle schools? Demographic data and histories of developmental challenge were analyzed using descriptive statistics (Agresti & Finlay, 1999). Analyses included all study participants. Frequencies and rates were reported for each variable. Variables included age, ethnicity, total abuse, physical abuse, sexual abuse, family fragmentation, nature of family fragmentation, school behavior problems, academic failure, and substance use and abuse.

Research Question 2a-e: What differences exist in participant levels of psychosocial development based on assignment to experimental and control conditions? Primary data analysis focused on using Repeated Measures of Analysis of Variance. This statistical procedure was used to examine differences between groups of participants based on the timing of each group's exposure to the Project Challenge program.

Results from these analyses indicated whether or not there was a significant difference in the pattern of change between group means over time. Group 1 received the treatment between T1 and T2 and, theoretically, should have demonstrated an increase in the variables targeted by the intervention between measurements. Conversely, Group 1 did not receive the treatment between T2 and T3 and should have demonstrated no change or a slight decrease after the T2 measurement. Similarly, Group 2 did not receive the treatment between T1 and T2 and, based on the objectives of the program, there should have been no evidence supporting a difference between measurements. Between T2 and T3, however, Group 2 received the treatment and should have demonstrated corresponding increases in the psychosocial variables targeted by the intervention. This interaction between treatment and time of measurement provided evidence concerning the relationship between the program and each psychosocial variable of interest.

Effect size was calculated using partial *eta* squared, which described the strength of the treatment's effect on the targeted psychosocial variables. Effect size estimates were interpreted using traditional ranges. These included small effects/weak relationships (.01), medium effects/moderate relationships (.09), and large effects/strong relationships (.25).

For each variable with significant evidence of a treatment-by-time effect, follow-up data analysis strategies were used to investigate the nature of the differences between treatment and control groups. Follow-up data analysis strategies were two-fold. First, means were computed for each group at each time of measurement. The data were then used to

construct line graphs depicting the pattern of change for each group at each time of measurement. These line graphs illustrated whether or not changes in each variable corresponded with their assignment to the treatment or control groups.

Second, one-tailed dependent samples t-tests were used to examine within-group pre- and post-test differences. These tests provided evidence regarding the nature of the difference between treatment and control groups (i.e., "Was there statistically significant evidence that the treatment group experienced a pre-/post-test increase in target variable?" and "Was there statistically significant evidence that the treatment group did not reflect corresponding increases during the same time period?"). Together, these strategies provided evidence regarding the nature of the differences between treatment and control groups. These strategies indicated whether or not changes occurred as predicted and in the directions predicted.

Finally, data were collected from Group 1 participants two weeks after the intervention. two-tailed dependent samples t-tests were used to provide evidence regarding post-treatment changes in each targeted psychosocial variable or changes between T2 and T3. One-tailed Dependent Samples t-tests were used to evaluate net increases between T1 and T3.

Research Question 3: What common themes were identified when comparing program participant exit interviews? Participant exit interviews allowed participants to describe the influence of program experiences and activities on their psychosocial

development. An informal and adapted version of the Interpretative Analysis model (Hatch, 2002) was used to analyze the study's qualitative data. Qualitative data were used to confirm, enhance, and elaborate the quantitative findings of the study.

Research Question 4: Were students continuing to achieve school success 10 to 12 months after program completion? School achievement data were analyzed using descriptive statistics (Agresti & Finlay, 1999). Analyses included all study participants. Frequencies and rates were reported for each variable. Variables included rates of suspension and expulsion, absences in excess of district policy, and last semester GPA of 2.5 or better.

Results

Demographics
Participants ranged in age from 13 to 15 years. Thirty-seven percent of the participants were 13, 40% were 14, and 23% were 15. Forty-nine percent of participants described themselves as black, 9% as Hispanic, and 43% as white.

Research Question 1: What levels of developmental challenge and psychosocial development are prevalent among adolescent girls attending alternative schools?
Univariate statistics were used to describe the lifetime incidence of the three types of developmental challenge that most often precede delinquent behavior in adolescent girls: abuse, family fragmentation, and school failure.

Table 3

Research Question 2: Means by Variable and Time of Measurement

Targeted Psychosocial Variables	Group	TIME 1		TIME 2		TIME 3	
		Mean	SD	Mean	SD	Mean	SD
Self-confidence	1	44.25	5.571	49.30	6.783	47.94	5.724
	2	43.44	5.573	43.75	6.028	49.00	6.164
Self-esteem	1	28.21	4.984	32.00	4.410	31.22	3.490
	2	29.71	6.101	29.47	4.888	32.71	5.210
Perceived Social Support	1	67.32	13.149	74.32	6.961	68.41	10.995
	2	69.82	8.748	68.00	12.196	71.86	14.914
Mattering	1	56.63	9.001	62.68	7.484	56.29	8.880
	2	58.59	9.159	57.76	8.497	61.00	9.389
Identity	1	29.58	5.440	34.00	4.497	32.97	4.735
	2	31.12	4.328	30.06	5.391	32.93	4.665

According to the information provided, 94.59% of participants were victims of sexual or physical abuse. Seventy-one percent described at least one incident of physical abuse, and 26% described at least one incident of sexual abuse. Only 11% of participants indicated they had received some form of counseling or treatment related to their abuse history.

Ninety-five percent (94.59%) of participants were exposed to some form of family fragmentation. Eighty-three percent (82.86%) experienced parental divorce and subsequent lack of involvement from the parent not-in-residence as an ongoing source of family fragmentation. Forty-nine percent (48.57%) reported prolonged parental incarceration as an ongoing source of family fragmentation. Thirty-one percent (31.43%) described parental substance abuse as a contributing factor to family fragmentation. One hundred percent (100%) of the participants who reported family fragmentation described the father as being the primary family member who was absent, missing, or unavailable. At program entry, 91.43% of participants lived with their mother in the home, while 28.57% lived with their father in the home.

One hundred percent of participants described experiencing abuse or family fragmentation, and 94.59% described experiencing both abuse and family fragmentation. Of the participants who experienced either abuse or family fragmentation, 100% experienced the problem prior to academic failure and prior to beginning the behavior resulting in their placement in an alternative school. Of the participants who experienced both abuse and family fragmentation, 100% experienced both prior to other developmental challenges and the onset of behaviors resulting in their alternative school placement.

School failure was examined in terms of school behavior and school grades. One hundred percent of participants indicated failure to behave appropriately at school. This finding reflects the source of participant referrals—alternative schools. The school district in which this study was conducted requires a confirmed history of in-school behavior problems before assignment to an alternative school. Eighty-nine percent (89.19%) of participants also reported academic failure, defined as receiving the letter grade "D" or below for half or more of their courses during the previous semester.

Research Question 2a: What differences exist in participant levels of self-confidence based on assignment to experimental and control conditions?

Repeated Measures Analysis of Variance supported significant differences in self-confidence based on assignment to treatment and control groups (p=.005, F=6.171, df=1.864). Treatment groups demonstrated increased levels of self-confidence, while control groups remained constant. The effect size estimate (partial eta squared=.310) suggested a strong relationship between the intervention and increased self-confidence. Line graphs depicted patterns for each group as hypothesized. One-tailed Dependent samples t-tests revealed significant differences between pre- and post-test measurements (Group 1 p=.000, t=-3.806, df=19; Group 2 p=.000, t=-4.156, df=12).

As part of the cross-over design, Group 1 was measured two weeks after treatment. A Two-tailed Dependent samples t-test provided evidence for a small decrease in self-confidence two weeks after treatment (p=.074, t=1.518, df=17; mean decrease=1.333, 90% CI =.194—2.861). Paired samples t-tests strongly supported a net improvement in self-confidence for Group 1, despite a decrease between T2 and T3 (p=.007, t=-2.718, df=17)

Research Question 2b: What differences exist in participant levels of self-esteem based on assignment to experimental and control conditions? Repeated Measures Analysis of Variance supported significant differences in self-esteem between treatment and control groups (p=.016, F=4.408, df=2.000). The effect size estimate (partial eta squared=.128) suggested a stronger-than-moderate relationship between the intervention and increased self-esteem. Line graphs depicted patterns for each group as hypothesized. Paired samples t-tests revealed significant differences between pre- and post-treatment measurements (Group 1-p=.001, t=-3.375, df=18; Group 2-p=.009, t=-2.672, df=13).

Group 1 measurements taken two weeks post-treatment suggested no decrease in self-esteem. Two-tailed dependent samples t-tests provided no evidence of a significant decrease in self-esteem between T2 and T3 (p=.208, t=.833, df=17). One-tailed dependent samples t-tests also supported a net increase in self-esteem between T1 and T3 (p=.007, t=-2.271, df=17).

Research Question 2c: What differences exist in participant levels of perceived social support based on assignment to experimental and control conditions? Repeated Measures Analysis of Variance showed significant differences in perceived social support between treatment and control groups

(p=.048, F=3.209, df=2.000). The effect size estimate (partial eta squared=.100) indicated the treatment made a moderate impact on perceived social support. Line graphs depicted patterns for each group as hypothesized. Paired samples t-tests revealed significant differences between pre- and post-treatment measurements for Group 1 (p=.015, t=-2.341, df=18) but no evidence for an increase in Group 2 (p=.179, t=-.953, df=13). In post hoc analysis, Group 2 data were split into the three subgroups in which treatment occurred. After this procedure, two of three subgroups demonstrated a significant increase in perceived social support, while one group showed no increase between any points of measurement. Ultimately, five of six subgroups experienced statistically significant pre-post increases in Perceived Social Support.

Group 1 measurements taken two weeks post-treatment suggested a substantial decrease in perceived social support. Paired samples t-tests provided evidence of a statistically significant decrease between T2 and T3 (p=.016, t=2.310, df=16). Paired samples t-test also indicated no net increase in perceived social support between T1 and T3 (p=.360, t=-.365, df=16). This pattern of evidence suggests a sharp increase in perceived social support during treatment, followed by a swift return to baseline.

Research Question 2d: What differences exist in participant levels of mattering based on assignment to experimental and control conditions? Repeated Measures Analysis of Variance supported significant differences in mattering between treatment and control groups (p=.009, F=5.107, df=1.971). The effect size estimate (partial eta squared=.150) suggested a stronger-than-moderate relationship between the intervention and increased mattering. Line graphs depicted patterns for each group as hypothesized. Paired samples t-tests revealed significant differences between pre- and post-treatment measurements (Group 1 p=.011, t=-2.510, df=18; Group 2 p=.014, t=-2.474, df=13).

Table 4
Research Question 2: Changes in Means over Time Due to Treatment

Targeted Psychosocial Variables	Group	T-T	Mean Diff.	90% CI		t	df	One-Tailed Prob.
				Upper	Lower			
Self-confidence	1	1-2	5.050	7.344	2.756	-3.806	19	.000
		2-3	-1.333	.194	-2.861	1.518	17	.073
		1-3	3.833	6.286	1.380	-2.718	17	.007
	2	1-2	.313	2.085	-1.460	-.309	15	.356
		2-3	4.923	7.034	2.812	-4.156	12	.000
Self-esteem	1	1-2	3.789	5.736	1.842	-3.375	18	.001
		2-3	-.667	.726	-2.059	.833	17	.208
		1-3	3.167	5.191	1.142	-2.721	17	.007
	2	1-2	-.235	1.157	-1.628	.295	16	.386
		2-3	3.357	5.582	1.138	-2.672	13	.009
Perceived Social Support	1	1-2	7.00	12.185	1.815	-2.341	18	.015
		2-3	-6.235	-1.524	-10.95	2.310	16	.017
		1-3	1.529	8.855	-5.796	-.365	16	.360
	2	1-2	-1.824	2.095	-5.742	.812	16	.214
		2-3	4.071	11.659	-3.516	-.950	13	.179
Mattering	1	1-2	6.053	10.234	1.871	-2.510	18	.011
		2-3	-6.059	-2.279	-9.839	2.799	16	.006
		1-3	.000	5.233	-5.233	.000	16	.500
	2	1-2	-.824	1.610	-3.257	.591	16	.281
		2-3	4.071	6.986	1.157	-2.474	13	.014
Identity	1	1-2	4.421	6.593	2.249	-3.529	18	.001
		2-3	-1.406	.119	-2.931	1.617	15	.063
		1-3	3.281	5.842	.721	-2.247	15	.020
	2	1-2	-1.059	1.018	-3.136	.890	16	.193
		2-3	2.643	4.390	.895	-2.678	13	.009

Group 1 measurements taken two weeks post-treatment suggested a significant decrease in mattering (p=.007, t=2.799, df=16; 90%).This decrease represented an almost exact return to baseline. The T1 to T2 mean increase of 6.053 (90% CI=1.871-10.234) was followed by a corresponding T2 to T3 mean decrease of 6.059 (90% CI=-5.233-5.233).

Research Question 2e: What differences exist in participant levels of identity based on assignment to experimental and control conditions? Repeated Measures Analysis of Variance supported significant differences in identity between treatment and control groups (p=.018, F=4.505, df=1.817). The effect size estimate (partial eta squared=.139) indicated a stronger-than-moderate relationship between the intervention and improved identity. Line graphs depicted patterns for each group as hypothesized. Paired samples t-tests revealed significant differences between pre- and post-treatment measurements (Group 1 p=.001, t=-3.529, df=18; Group 2 p=.009, t=-2.678, df=13).

Group 1 measurements taken two weeks post-treatment suggested a slight decrease in identity. Paired samples t-tests provided significant evidence of a decrease in identity after the intervention (p=.063, t=1.617, df=15). The decrease appeared relatively small. However, paired samples t-tests supported a net increase in identity (p=.020, t=-2.247, df=15) between T1 and T3.

Research Question 3: What common themes were identified when comparing program participant exit interviews? Participant Exit Interviews were conducted during, immediately following, and up to 90 days after program delivery. Interpretive data analysis strategies were used to analyze investigator notes and help identify several key themes related to participants' Project Challenge experiences. These themes clearly supported the quantitative findings of Research Question 2. Two main themes were pervasive and unanimous—increased self-confidence and positive experiences with trust. Findings related to self-esteem, perceived social support, mattering, and identity also consistently supported the quantitative findings.

Self-confidence. Participants clearly, unanimously, and most frequently described increased self-confidence as the first of two important outcomes from their Project Challenge experience. Participants consistently reported this finding during the program, one month after the program, and three months after the program. Some examples of participant comments include:

"Life is full of challenges, and you have to overcome them some way or another. Now I feel more confident in my ability to overcome challenges, because if I can do whitewater rafting and climb, then I can do anything … ANYTHING!"

"Project Challenge changed me. I have more confidence now and know I can do more than before."

"I have learned that I can overcome any obstacle, I just have to set my mind to it. If I really want to do something … I focus on how much I want to do it, work hard, and [know] I can overcome it. Don't put yourself down by saying, 'Oh, I can't, I can't,' because you really can do it."

Two subthemes emerged as participants discussed Project Challenge's influence on their self-confidence—underestimation and perseverance.

Participants described their Project Challenge experience as helping them better understand their personal strengths and better estimate what they are actually capable of achieving.

"I learned I can do things I think I can't do."

"[I learned] there is a big difference between what I think I can do and what I can [actually] do."

"Project Challenge showed me I am so much stronger than I think [I am]. I can do a lot I didn't think I could do."

Participants described the high level of difficulty and the intensity of Project Challenge activities as an important element in learning to correctly estimate their abilities. The presence of obvious and indisputable difficulty, and genuine doubt about their abilities, helped participants gain better perspective about their capacities. When describing the final challenge, a 175-foot rappel off a 1,000-foot cliff, one participant said:

"Leaning back over a 1,000-foot cliff is scary. I really didn't think I could do it. [I was so scared] I cried but knew I wanted to do it. I told myself I could [do it] over and over again, even though I could feel tears. "I can't" kept trying to get in my head, but I thought about how I did everything [right] on the other rappels, and I did it anyway. [At the bottom] I felt so great. I screamed, and cried, and was so happy. I did it!"

Participants described the dissonance created by achieving things they deeply believed they could not do as a critical aspect of the program. The dramatic difference between what they believed they were capable of doing and what they actually achieved served as powerful evidence demanding they reevaluate and reestimate their capacities.

Project Challenge participants described their budding self-confidence as fuel for perseverance. Perseverance helps people continue to try in the face of difficulty or to try again after a failure. Participants insisted Project Challenge helped them learn to persevere, to work hard in the face of adversity, and to resist quitting too easily or too soon.

> "I learned to never say never until you try and to always try your best."

> "It's okay if things are hard. I can do hard [things]."

> "It's okay to be scared. If it hurts, I can take it. If I cry, that's okay. Just don't give up. If you don't give up, you will do more [than you thought you could]."

A team member described observing participants develop self-confidence and perseverance in concert.

> "On a girl's first day, our 18-foot tower seems terrifying. It takes a lot of encouragement for many of them to even try. They are unsure about whether they can [climb the tower], and so they don't want to risk even one failure. By the last challenge, girls are [climbing] on a 75 foot cliff 1,000 feet above the valley below. It's safe but can be pretty scary. [When they take a fall], before you can even ask them if they want to keep trying, they grab the rock and start climbing again … sometimes through tears but always determined. They know what they want and are going to make it happen."

Trust. Participants clearly, unanimously, and frequently described positive experiences with trust as the second most important outcome of their Project Challenge experience. This finding was unanticipated and not evaluated quantitatively. Participants consistently cited trust as a central theme in their responses.

> "You can't do any of this without trusting people."

"My favorite activity was whitewater rafting because I had never been on a boat on water before, and working together as a team taught me how to trust people."

"I learned it's best to work together to get things done, to trust others, and to get along with everyone. Before Project Challenge, I used to get frustrated and mad around a bunch of girls. Now, I'm okay around other girls. Everyone isn't out to get you. I can trust some people."

Participants emphasized how their developmental histories made it difficult to trust other people. Project Challenge asks participants to literally trust team members with their lives. Participants were aware that tying a knot wrong or forgetting a safety precaution could cost them their lives. They described the program's philosophy of relationship building and progressively working from small to big challenges as key elements in bridging the gap from mistrust to trust.

Participants also described the personal qualities of Project Challenge team members as central to having positive experiences with trust. Participants described team members' genuine and authentic respect for, confidence in, and care for program participants as key elements in the positive trust experience.

> "Project Challenge is special because the people support you and encourage you to never give up."

> "The adults in Project Challenge treated me the way I was supposed to be treated, the way I should be treated. They trusted me, and they had confidence in me that I could do anything."

> "I believed in [myself] because they believed in me (through tears). … I've never had anyone believe in me like that before."

Research Question 4: Were students continuing to achieve school success 10 to 12 months after program completion? One hundred percent of Project Challenge participants had at least two of the three favorable outcomes examined 10 to 12 months after program completion. At the time of follow-up 0.0% (n=0) had been expelled, 11.42% (n=4) had been suspended, 5.71% (n=2) had absences in excess of district policy, and 85.71% (n=30) had a last semester GPA of 2.5 or better. Because the 10- to 12-month follow-up findings are outside the scope of the experimental portion of the study, these results cannot be used to establish a causative relationship and, although encouraging, should be interpreted cautiously.

Discussion

Middle school girls who are at-risk represent a highly vulnerable population (Hawkins, et al., 2009; Bilchik, 1999; Acoca, 1999; Manigha, 1998). Too often, these girls share painful and traumatic life experiences that precede their school failure. These life events include abuse, family fragmentation, school failure, untreated health problems, and convergence of risk in early adolescence (Hawkins, et al., 2009; Acoca, 1999). Girls exposed to these traumatic and stressful developmental histories are frequently overwhelmed by these occurrences and experience developmental disruptions and delays in their psychological and social growth (Corcodora, 2009; Acoca, 1999; Manigha, 1998). These disruptions may include lower levels of self-confidence and self-esteem, diffuse intrapersonal and interpersonal identities, and feelings of isolation manifested in low levels of perceived social support and mattering.

This study examined the influence of a short-term, gender-specific intervention program created to meet the specific needs of middle school girls experiencing school failure and problem behavior. Project Challenge was designed specifically to meet the needs of girls with developmental histories predisposing them to poor outcomes by promoting healthy psychosocial development and the intrapersonal and interpersonal factors associated with self-confidence, resilience, and positive coping.

Results indicated the developmental histories of girls in this study matched the literature's description of girls likely to choose delinquent behaviors. Evidence supporting this match was persuasive. One hundred percent of participants described a history including two of three developmental challenges investigated in this study; 94.29% of participants reported a history including all three developmental challenges investigated. The rates at which participants experienced each individual challenge were high as well: school behavior problems, 100%; abuse, 94%; family fragmentation, 94%; and academic failure, 89%. Project Challenge was designed to help girls regain some of the developmental losses associated with experiencing these challenges and to assist in preventing future school failure and problem behaviors.

Quantitative data analysis provided strong evidence Project Challenge accomplished all of its program objectives. Congruent with the program's primary objective, assignment to the treatment condition corresponded with an anticipated increase in self-confidence. According to the data, Project Challenge's influence on self-confidence was strong and remained strong two weeks after the program. Congruent with the program's secondary objectives, assignment to the treatment group corresponded with anticipated increases in both self-esteem and identity. Data suggested the program's influence on self-esteem and identity was moderate. This finding is particularly important because both self-esteem and identity are stable constructs that resist intervention (LeCroy, 2004). Evidence also suggested self-esteem resisted decay two weeks after the program and that changes in identity remained significant during that time. Data supported Project Challenge's influence on variables related to each of its three main desired outcomes: increased participant levels of self-confidence, self-esteem, and sense of identity.

The theoretical model on which Project Challenge is based suggests girls are most likely to benefit from activities related to self-confidence, self-esteem, and identity in a context high in perceived social support and mattering. The model suggests increases in girls' interpersonal development most likely occur in a caring, supportive, responsive, and developmentally rich interpersonal environment. Quantitative data analysis provided strong evidence Project Challenge accomplished its objectives related to perceived social support and mattering. Data suggested a moderate and stronger-than-moderate influence on both perceived social support and mattering, followed by a return to baseline two weeks after the program.

Participant exit interviews corroborated the study's quantitative findings. When asked whether and how Project Challenge affected them, program participants consistently and passionately offered responses congruent with the study's quantitative findings. Participants were aware of the ways Project Challenge had impacted them. They described the program as a valuable experience, an experience they would highly recommend to other girls, in general, and especially to girls who had faced or were facing difficulty in their lives.

Psychosocial developmental theory focuses on how people change over time (Steinberg, 2005; Miller, 1993) and, at its core, "development" refers to a special type of learning. This type of learning consists of an education built on experience, observation, and relationships or, in essence, an education based on living life. This education promotes learning in its most fundamental form, and this type of learning has the potential to

change behavior in broad and far-reaching ways. Developmental learning contributes directly to changes in people in terms of their cognitive abilities, moral decision making, identity, social skills, personality, and temperament (Steinberg, 2005; Miller, 1993).

Evidence supports the efficacy of the experimental treatment—programs of this nature can effectively promote healthy development and encourage school success in middle school girls. Challenge activities conducted in a context high in perceived social support and mattering contributed to increased self-confidence, self-esteem, and identity. Together, these increases improved girls' overall resilience and empowered them to face adversity and achieve greater academic and school success in the midst of their challenging circumstances. Specifically, Project Challenge empowered girls by

1. Creating a context characterized by support and authentic concern.

2. Facilitating experiences that promoted increased self-confidence, self-esteem, and sense of identity, thereby restoring their feelings of personal power, strength, and faith in their ability to cope with difficulty and challenge.

3. Helping them begin to recover lost developmental progress caused by disruptions related to abuse, family fragmentation, school failure, untreated health problems, and the convergence of risk during the middle school years.

4. Preparing them to apply this developmental learning to the school environment in a way that promoted both pro-social school behavior and academic success.

Recommendations for Future Research

Study Strengths. First, the study's experimental design provided the strongest possible evidence concerning the influence of the intervention on the variables in question. True experimental designs incorporate randomization and control groups, and control for the influence of more threats to validity than other research designs. Second, the cross-over element of this design required repeated measurements from participants. Using repeated measurement increases the total number of data points analyzed and, thereby, increases the power of the study. Third, the mixed methods design element strengthened the study as well. The incorporation of

qualitative methods enhanced the quantitative portion of the study. Participant exit interviews confirmed and elaborated on the quantitative findings of the study. Combined with the true experimental design, this triangulation of methods provided important evidence regarding the influence of the intervention on participants.

Study Limitations. One limitation of the study concerned the potential for diffusion of treatments. In this study, there was no way to separate groups or prevent them from communicating with each other. To limit the effects of this threat, the group receiving the experimental condition did not have to attend school the day after the challenge trip. The group assigned to the control condition was administered the instrument battery on the day before they interacted with participants assigned to the experimental condition in school. Participants from both groups may have communicated outside school, but this communication was probably limited. Further, this study investigated the effects of a program designed around highly visceral experiential activities such as rock climbing, rappelling, and whitewater rafting. Oral communication about these activities may have had an influence on control group responses. However, it is reasonable to assume that the intensity of these activities exerted a greater effect than would be possible by standard oral communication between participants. Perhaps most important, the influence of diffusion of treatments could only minimize the differences between treatment and control conditions.

Goals for Future Research. Reproducibility represents one of the core tenets of experimental science. The results from an effective intervention should be reproducible by other researchers using the same protocols. The current study should be replicated to collect further evidence supporting or refuting the results of the original study. Future studies should be conducted by independent researchers, both impartial and objective. Additionally, the study should be replicated examining a variety of times, places, and people. The current study was conducted using students from two different schools, during fall and spring. All participants and program activities came from one city in the North Central Florida area. Therefore, replicating the study in a different geographic area will help establish greater generalizability.

Due to the study's cross-over design, two weeks was the longest period of time any post-program

comparisons could be made between the experimental and control conditions. Although the two-week time period provides some evidence about changes in the self-confidence, self-esteem, identity, perceived social support and mattering post-program, these results represent fundamentally short-term changes. Ten- to 12-month follow-up findings were outside the experimental portion of the study. Future experimental studies should examine the longer-term effects of Project Challenge on the variables of interest.

One particularly difficult variable to control was the influence of the Project Challenge team members' themselves. Project Challenge team members were hired with specific personal qualities in mind, including warmth, caring, confidence in girls, and the ability to develop effective relationships and model effective behavior. Perceived social support and mattering seemed particularly amenable to the confounding effects of team member personal qualities. Selecting team members possessing the personal qualities that allow them to naturally and successfully express the Project Challenge philosophy may constitute the most critical factor related to program success.

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