

Quasi-Experimental Evidence Reporting Enhanced Protective Factors Resulting from Participation in Youth Assets for a Healthy Adolescence - Experiential Prevention (AHA-EOSL)

Rita O'Sullivan, O'Sullivan & Associates (ritaosull@me.com)

Report commissioned by Rocky Mountain Youth Corps-CO, January 2023

INTRODUCTION

This article reports the results of a quasi-experimental design analysis of the 2021 evaluation data from the Assets for a Healthy Adolescence - Experiential Prevention (AHA-EOSL) Program. Rocky Mountain Youth Corps-CO (RMYC) engaged 165 youth over the summer in either RMYC's Community Youth Crews (ages 14-15) or Regional Youth Crews (ages 16-18). Participants in both programs live, camp (24/7), and work together in crews of 8-10 members for two or five weeks and perform meaningful conservation and service projects for public benefit 6-8 hours per day, five days per week. Evenings and weekends are spent doing daily living chores, AHA-EOSL Education Curriculum, and life skills development. The residential nature provides a deep, immersive, and experiential absorption of the life skills to ensure a healthy transition into adulthood. All members are paid, and those 17 or older may receive AmeriCorps education awards. Evaluation data were collected online using Entrance and Exit Surveys.

PROGRAM'S CONCEPTUAL MODEL

The AHA-EOSL Program emerged within the paradigm of positive youth development (e.g., Catalano et al, 2002; Roth & Brooks-Gunn, 2016), which focuses on those individual, family, school, and community factors that often predict both positive and negative outcomes for youth. Underlying the program is the recognition that developing strong bonds with adults and peers through involvement in positive activities could set positive developmental pathways and prevent future problems. Among the myriad of possible desirable outcomes, RMYC program developers focused on eight factors they believed would be positively enhanced by program participation, along with reductions in alcohol and marijuana use: 1. Planning and Decision Making, 2. Interpersonal Skills, 3. Peer/Social Support, 4. Resiliency, 5. Enhanced Self-efficacy, 6. Leadership, 7. Civic Engagement, and 8. Alcohol and Drug Expectations.

The positive youth development literature supports each of the eight selected desirable program factors as potential positive outcomes. The sections that follow summarize some of the more recent literature linking these eight factors of interest to promoting positive youth assets. While other factors have also been linked to positive youth assets, RMYC program developers identified these eight protective factors, and so only they are discussed.

1. Planning and Decision Making

Guerra and Bradshaw (2008) identified decision making as one of five core competencies related to healthy adjustment in adulthood. Problem solving, a part of planning and decision making, was also an improved outcome that Catalan et al (2002) found in a review of 25 youth development programs. Further supporting inclusion of this factor was a review of evaluation

findings from community youth programs by the National Research Council and Institute of Medicine (2002).

2. Interpersonal Skills

The review of 25 positive youth development program evaluations conducted by Catalan et al (2002) also identified interpersonal skills as one of the positive program outcomes. Another review of the literature by Schulman and Davies (2007) observed that positive youth development programs promoted social competence. Enhanced interpersonal skills also were included among the positive outcomes of youth development programs in the 2002 review of the research by the National Research Council and Institute of Medicine.

3. Peer/Social Support

McBeath et al (2018) found that peer support was important to promote for work-integrated learning. Catalano (2004) included bonding among the 15 positive outcomes that effective youth programs foster. Bonding also was identified by Shulman and Davies (2007) as one of the constructs of positive youth development. Blueprints for Healthy Youth Development identifies (2022) “close relationships with peers” as one of its positive relationship outcomes.

4. Resiliency

In a review of the literature around positive youth development programs, OJJDP (2014) identified the research on resiliency as a potential outcome for programs. Learner et al (2011) echoed the agreement that resiliency was supported by promoting developmental assets. Catalano (2004) included resilience among the important outcomes of effective programs. Similarly, in a review of the literature Schulman and Davies (2007) identified enhanced resiliency as a positive construct addressed by youth development programs.

5. Enhanced Self-efficacy

Competence, which includes self-efficacy, is one of the 5 Cs of positive youth development programs (Lerner et al, 2011). In a review of the literature, Schultma and Davies (2007) identified enhanced self-efficacy as a positive construct addressed by youth development programs. Catalano and colleagues (2002), in their analysis of 25 youth development program evaluations, found self-efficacy among the improved outcomes.

6. Leadership

Lerner (2004) identified leadership as one of three essential components of a positive youth development program. A large number of youth development programs include leadership training and development in the curricula (e.g., Edelman et al, 2004). A study (Henderson et al, 2007) using a stratified sample 92 camp programs across the United States found that leadership was one of six constructs positively affected.

7. Civic Engagement

Sherrod (2007) speaks extensively about how civic engagement is a part of positive youth development. Wray-Lake and Abrams (2020) posited that positive youth development theory includes fostering civic engagement and is particularly challenging for urban youth of color. In a

review of the literature, Schulman and Davies (2007) observed that providing opportunities for pro-social involvement was a positive construct addressed by youth development programs. Roth and Books-Gunn (2016) reported an increase in civic engagement as a result of participation in positive youth development programs.

8. Alcohol and Drug Expectations

A number of evaluation and research review studies have shown that positive youth engagement results in reduction of alcohol and tobacco use (e.g., Catalano et al, 2002; Learner et al, 2011; OJJDP, 2014). One study, a synthesis of 26 meta-analyses of drug prevention programs (Tanner-Smith et al, 2018), reported an average positive effect size of .20 substance abuse reduction. Blueprints for Healthy Youth Development (2022) identifies “perceived risk of drug use” as one of the protective factors for youth development programs. Tebes et al (2007) reported that participants in an afterschool substance abuse prevention program were significantly more likely to view drugs as harmful at program exit.

Curriculum Overview

The AHA-EOSL education curriculum provides a structured resource for crew leaders to effectively facilitate the internalization of the program experience with participants. Lesson activities are designed to be very interactive, with opportunities for youth participants to provide direction, leadership and decision-making on a daily basis. The curriculum involves daily interactive discussion prompts, activities and facilitated experiences that address life skills (healthy lifestyle choices, career/employment exploration, civic responsibility), and Resiliency (problem-solving, outdoor leadership, decision-making and mindfulness). The lessons are designed to enhance the inherent parts of the program and to promote reflection and self-growth for participants through hands-on experiences and active reflection. The program incorporates youth community service and recreational activities, and youth-driven leadership opportunities as an integral process of program implementation.

METHOD

Quasi-Experimental Crossover Design

During Summer 2021 from June through August, RMYC fielded 22 crews of no more than 10 participants each. Crews’ start dates were staggered across the summer with each crew completing on-site Entrance and Exit Surveys at the beginning and end of their service. All participants and the parents of minor participants completed written informed consent forms for participation in the evaluation of the program. A total of 165 Entrance Surveys were received from 176 participants enrolled in the program. Of those, 84 completed their Entrance Surveys from June 6-21 and 81 completed their Entrance Surveys from July 2-August 16. Pre/Post program data were analyzed for the entire group earlier and can be found in O’Sullivan (2021) along with copies of the instruments. The analysis presented here uses a quasi-experimental crossover design to investigate program effect between a treatment group and a constructed comparison group. In this case, the 84 participants from June are the treatment group and the 81 participants from July and August are considered the comparison

group. The assumption here is that comparison group at the start of their program is equivalent to the treatment group at the end of their programs, controlling for almost all threats to internal validity (Shadish, Cook, & Campbell, 2002). Thus, differences between the Exit Survey for the treatment group and then Entrance Survey of the comparison group would be a quasi-experimental estimate of treatment effects. The table that follows illustrates the design.

Table 1. Quasi-Experimental Crossover Design

Treatment (n=84)	Entrance Surveys June 2022	Exit Surveys June-July 2022	
Comparison (n=81)		Entrance Surveys July-August 2022	Exit Survey July- August 2022

Participant Context & Description

The 10 counties in the AHA-EOSL program service region are all rural, but include a variety of community challenges, barriers, and risk factors. For example, five of the counties have ski resorts, which drive the cost-of-living up and have a high transient population. These communities also tend to have very favorable attitudes towards substance use. According to the Communities That Care Shared Risk and Protective Factor Profiles, students in Health Statistics Region (HSR) 11 (Jackson, Moffat, Rio Blanco and Routt Counties) reported the highest overall (all grades combined) risk factor scores for parental attitudes favorable toward substance use (58.7% of students at risk compared to state average 53.3%).

According to the *2019 Healthy Kids Colorado Survey* (HKCS2019), the state averaged 29.6% of students who reported at least one drink of alcohol in the past 30 days. This was higher (33.3% and 33.9% respectively) for the RMYC service region, encompassing 9 of the 10 counties in Colorado’s Health Statistics Regions (HSRs) 11 and 12. Binge drinking was also higher than the state average in the majority of counties that RMYC serves. HSRs 11 and 12 all reported a higher percentage of students who binge drank (4+ drinks for females, 5+ drinks for males, within a couple of hours) on one or more of the past 30 days than the state average, with HSR 12 (Eagle, Garfield, Pitkin, Grand, Summit counties) being the highest in the region with 18.8% binge drinking (state 14.2%).

Testing Group Equivalence between Treatment and Comparison Groups

Average age for total group, treatment group, and comparison group was 15.5 years old. The overall group was 63.0% male, 34.5% female, and 2.4% non-binary. Treatment and comparison groups were very similar and a Chi-Square test revealed no significant differences in gender. The table that follows contains ethnicity/race information for the two groups compared to the total, which are very similar. A Chi-Square test revealed no significant difference in ethnicity/race among the three groups.

Table 2. Treatment and Comparison Group Ethnicity/Race

	White	Hispanic	Asian	Other
Total Group (n=165)	92.7	4.8	1.8	0.7
Treatment (n=84)	92.9	6.0	1.2	0.0
Comparison(n=81)	92.6	3.7	2.3	1.4

A t-test for independent samples between Entrance Survey responses, comparing treatment and control group in the eight program outcome areas (56 items), showed no significant differences at the .05 significance level with one exception (“I can communicate what needs to be done”). This further supports the equivalence of these two groups. Finally, a Chi-Square test on the levels of alcohol and drug use showed no significant differences, also supporting group equivalence.

Instrumentation

Participants completed the same Entrance and Exit surveys on line, as they began and ended their two or five weeks of service. Initially, 165 participants responded to the Entrance Survey and 144 completed the Exit survey. Of those completing the surveys, 64 of the original 84 treatment group participants completed Exit Surveys. As RMYC counted 176 official participants for the summer, Entrance survey response rate overall would be 93.8% and Exit Survey response rate for the treatment group would be 76.1%; both response rates are well within the realm of acceptability.

Reliability Analysis

A reliability analysis of the eight subscales included in the survey was conducted, using all 165 Entrance surveys received. A reliability of .70 or greater for these types of scales is considered strong. The results of the analysis are shown in the table that follows and reflect strong reliabilities for each of the eight subscales.

Table 3. Survey Subscale Reliabilities

Survey Outcome Subscales	Number of Items	Number of Respondents	Cronbach Alpha Reliability
1. Planning and Decision Making	10	158	.79
2. Interpersonal Skills	8	165	.82
3. Peer/Social Support	5	164	.91
4. Resiliency	7	165	.79
5. Enhanced Self-Efficacy	10	157	.91
6. Leadership	6	162	.82
7. Civic Engagement	4	163	.91
8. Alcohol and Drug Expectations	5	164	.97

In addition to completing items about the eight subscales, participants were asked about their alcohol and marijuana use in the previous 30 days on both surveys. The Exit Survey also asked participants to rate their satisfaction with the program, how likely they would be to recommend the corps experience to others, how helpful their service was to the community, and what the most impactful part of the corps experience was to them. This article only reports the results of t-tests for independent samples, contrasting Exit Surveys for the treatment group with Entrance Surveys for the comparison group on the eight subscales by item as well as differences in their reported alcohol and marijuana use.

RESULTS

Survey Subscale Responses

The tables that follow contrast treatment and comparison group responses to the Exit Survey, indicating number of respondents, means, and standard deviations (SD) by item; it also provides significance probabilities and Effect size calculations. These subscales asked participants to rate statements, using a 4-point Likert scale. The first subscale, Planning, Decision Making and Problem-Solving asked respondents to select among four choices: Not at all like me (1), A little like me (2), Somewhat like me (3), and Exactly like me (4). The remaining seven subscales used Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4) as their options. The analysis used t-tests for independent samples to determine any significant differences between treatment and comparison groups. The p-values listed are 2-tailed significance levels; for this analysis a p-value of 0.100 or less would be considered significant. The tables additionally provide effect size differences, which can be compared across items. According to Tanner-Smith, S., Durlak, J, & Marx, R. (2018) setting targets and interpreting effect size changes is directly related to program contexts. After their synthesis of 74 meta-analyses from more than 1100 controlled empirical trials with almost a half-million school age participations, they reported average effect size ranged from .07 to .16 standard deviations. Thus, the standard used to indicate a substantial positive change for a program aiming to enhance protective factors among participants was an effect size of .25 or greater, when significant differences were revealed between the two groups.

1. Planning and Decision Making

The program experience had significant positive impact on the participants' planning and decision making skills. Respondents generally thought the statements were "Somewhat like" themselves or "Exactly like" themselves. Five items showed significant differences during the program (i.e., Items 3, 4, 5, 8, and 10) with Item 10, *When I am confronted with a problem, I can usually find several solutions*, showing the strongest difference with an effect size of .43.

Table 4. Planning and Decision Making: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. I have goals in my life.	63/81	3.52 (.59)	3.41 (.72)	.301	.15
2. If I set goals, I take action to reach them.	63/81	3.46 (.69)	3.27 (.57)	.101	.28
3. I develop step-by-step plans to reach my goals.	63/81	3.02 (.96)	2.72 (.86)	.050	.35
4. Sometimes I can't stop myself from doing something, even if I know it's wrong.	63/81	3.03 (.93)	2.62 (1.11)	.019	.37
5. I often act without thinking through all the alternatives.	63/80	2.87 (.97)	2.46 (1.09)	.021	.38
6. I look for information to help me understand the problem.	63/81	3.43 (.69)	3.38 (.72)	.699	.07
7. I manage to solve difficult problems if I try hard enough.	63/80	3.51 (.64)	3.46 (.67)	.2684	.07
8. It is easy for me to stick to my plan.	63/81	3.11 (.86)	2.86 (.88)	.094	.29
9. I can solve most problems if I invest the necessary effort.	62/80	3.63 (.58)	3.54 (.64)	.378	.14
10. When I am confronted with a problem, I can usually find several solutions.	63/81	3.35 (.79)	3.01 (.78)	.012	.43

2. Interpersonal Skills

The program experience had significant positive impact on the participants' interpersonal skills. Respondents generally thought they "Strongly agreed" or "Agreed" with the statements. All but one item showed significant differences during the program period (i.e., Item 3). The strongest effect size difference was for Item 2, *I encourage my friends to be the best they can be*. Three of the significant items showed positive differences in participants' beliefs about teamwork with Item 7, *I like working in a team*, showing the strongest changes with an effect size of .36.

Table 5. Interpersonal Skills Item: Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. I support my friends when they do the right thing.	63/81	3.81 (.40)	3.56 (.67)	.009	.37
2. I encourage my friends to be the best they can be.	63/81	3.71 (.58)	3.30 (.87)	.001	.47
3. I would defend my friends if others were treating them badly.	63/81	3.87 (.34)	3.75 (.54)	.123	.22
4. I am there when my friends need me.	63/81	3.81 (.44)	3.60 (.65)	.032	.33
5. I try to help my friends feel good about themselves.	63/81	3.75 (.57)	3.52 (.79)	.025	.29
6. When I work in a team, it helps me better understand other people.	63/81	3.54 (.69)	3.28 (.86)	.056	.30
7. I like working in a team.	63/81	3.31 (.78)	2.99 (.90)	.055	.36
8. I accomplish more working in a team than by myself.	63/81	3.19 (.84)	2.89 (.91)	.028	.33

3. Peer/Social Support

The program experience had significant positive impact on the participants' peer and social support. Respondents generally thought they "Strongly agreed" or "Agreed" with the statements. All items showed significant differences during the program period. Effect sizes were strong, ranging from .35 to .47.

Table 6. Peer/Social Support: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. My friends help me when I am having trouble with something.	63/81	3.54 (.53)	3.20 (.73)	.002	.46
2. If there is something bothering me, I can tell my friends about it even if it is something I cannot tell to other people.	63/80	3.44 (.71)	3.06 (.86)	.005	.44
3. My friends would stick up for me if someone was causing me trouble.	63/81	3.56 (.59)	3.20 (.77)	.003	.47
4. When I do a good job at something, my friends are happy for me.	62/81	3.47 (.65)	3.19 (.76)	.020	.37
5. Building community within a group is important.	62/81	3.74 (.44)	3.49 (.71)	.017	.35

4. Resiliency

The program experience had significant positive impact on the participants' resiliency. Respondents generally thought they "Agreed" with the statements. All but two items showed significant differences during the program. The remaining five items all show effect sizes in excess of .25, arguing that the program experience greatly enhanced the resiliency of participants. The strongest effect size of .51 was seen in Item 7, *When needed, I ask for help*, which speaks to an essential resiliency factor for youth.

Table 7. Resiliency: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. When I am in a difficult situation, I can find my way out.	64/81	3.45 (.56)	3.21 (.63)	.016	.38
2. I know what to do in an emergency.	64/81	3.41 (.61)	3.27 (.69)	.221	.20
3. Sometimes you have to push through a situation when you'd rather stop.	64/81	3.67 (.51)	3.46 (.67)	.035	.31
4. I learn from my mistakes.	64/81	3.58 (.56)	3.37 (.66)	.046	.32
5. When I'm upset, I think before I act.	64/81	3.11 (.66)	2.85 (.81)	.057	.32
6. When I'm stressed, I have trouble doing things.	64/81	3.00 (.74)	2.91 (.91)	.538	.10
7. When needed, I ask for help.	64/81	3.34 (.62)	2.96 (.75)	.001	.51

5. Enhanced Self-Efficacy

The program experience had significant positive impact on the participants' self-efficacy. Respondents generally thought they "Strongly Agreed" or "Agreed" with the statements. All items showed significant differences during the program with all effect sizes in excess of .25, arguing that the program experience enhanced the self-efficacy of its participants. The strongest effect size of .75 was seen in Item 4, *I am confident speaking up in groups*. Effect size of .69 was observed for Item 5, *I tell people what I think of them*, and .58 for Item 6, *I have important contributions to make to groups*, and Item 10, *I am confident that I could plan a balanced meal on a limited budget*. These results provide extremely strong evidence supporting the enhanced self-efficacy of participants during the program.

Table 8. Enhanced Self-Efficacy: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. I am confident that I could deal efficiently with unexpected events.	64/80	3.47 (.56)	3.16 (.72)	.006	.43
2. Thanks to my resourcefulness, I know how to handle unforeseen situations.	64/80	3.41 (.66)	3.42 (.61)	.050	.33
3. I can remain calm when facing difficulties because I know what to do.	64/80	3.42 (.61)	3.13 (.66)	.007	.44
4. I am confident speaking up in groups.	64/80	3.39 (.70)	2.65 (.98)	.000	.75
5. I tell people what I think of them.	64/80	3.27 (.74)	2.73 (.78)	.000	.69
6. I have important contributions to make to groups.	64/79	3.47 (.62)	3.08 (.68)	.000	.58
7. I cope well with stressful situations.	64/80	3.27 (.74)	2.73 (.78)	.004	.45
8. I am a good friend.	64/79	3.61 (.58)	3.30 (.70)	.006	.44
9. I know my strengths.	64/79	3.55 (.59)	3.18 (.80)	.002	.46
10. I am confident that I could plan a balanced meal on a limited budget.	64/79	3.70 (.46)	3.23 (.82)	.000	.58

6. Leadership

The program experience had significant positive impact on the participants' leadership skills. Respondents generally thought they "Strongly Agreed" or "Agreed" with the statements. All items showed significant differences during the program with effect sizes ranging from .31 to .57, arguing that the program experience enhanced the leadership skills of participants.

Table 9. Leadership: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. I can manage small group to complete projects.	62/80	3.58 (.53)	3.10 (.88)	.000	.55
2. I understand the strengths and weaknesses of others.	63/80	3.49 (.59)	3.05 (.78)	.000	.57
3. I see what needs to be done.	64/80	3.56 (.53)	3.26 (.81)	.011	.37
4. I can communicate what needs to be done.	64/80	3.47 (.56)	3.40 (.93)	.001	.46
5. I am a good listener.	64/79	3.56 (.61)	3.33 (.75)	.046	.31
6. I adjust my plan based on team input.	63/80	3.51 (.59)	3.24 (.73)	.019	.37

7. Civic Engagement

The program experience had significant positive impact on the participants' civic engagement. Respondents generally thought they "Strongly Agreed" or "Agreed" with the statements. All but one item showed significant differences during the program (i.e., Item 3, *I am concerned about the environment*), which had initially strong ratings at entrance for the comparison group. It's possible that participants attracted to the program did so because of their concerns for the environment. Their experience with the program maintained this strong interest and increased it somewhat. The three remaining items all showed effect sizes in excess of .25, providing solid evidence that the program experience enhanced the civic engagement of participants.

Table 10. Civic Engagement: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. I am concerned about community issues.	64/80	3.48 (.64)	3.15 (.70)	.004	.47

2. Involvement in programs to improve the community is important.	64/80	3.58 (.53)	3.35 (.66)	.026	.35
3. I am concerned about the environment.	64/80	3.59 (.61)	3.46 (.67)	.228	.19
4. Involvement in programs to improve the environment is important.	64/80	3.69 (.47)	3.50 (.68)	.061	.28

8. Alcohol and Drug Expectations

The program experience had little effect on the participants' expectations about using cigarettes, e-cigarettes, vapes, alcohol, marijuana, and other drug use. Respondents generally "Strongly Agreed" or "Agreed" with the statements provided, which were positively worded. In this case a decline from entrance to exit would be desirable, which would explain the negative effect size for item 3, *Drinking alcohol lets you have more fun*. One item, Item 5, *Cocaine and other illegal drugs always make you feel good*, showed significant differences with a positive effect size of .26.

Table 11. Alcohol and Drug Expectations: Item Means (4-point Likert Scale), Standard Deviations, t-test p-values, and Effect Size Calculations

ITEMS	Number of Responses Treatment/ Comparison	Mean Treatment (SD)	Mean Comparison (SD)	p-value	Effect Size
1. Smoking cigarettes makes you look cool.	64/80	3.75 (.64)	3.65 (.64)	.353	.16
2. Using e-cigarettes or vapes makes you look cool.	64/80	3.70 (.71)	3.66 (.64)	.717	.06
3. Drinking alcohol lets you have more fun.	64/80	3.50 (.82)	3.56 (.63)	.606	-.09
4. Using marijuana lets you have more fun.	64/80	3.55 (.78)	3.50 (.71)	.706	.07
5. Cocaine and other illegal drugs always make you feel good.	64/80	3.77 (.64)	3.53 (.91)	.076	.26

9. Use of Alcohol Last 30 Days

Use of alcohol was measured pre and post program by asking for frequency of use in the prior 30 days. As can be seen in the table that follows, 82.1% and 87.7% of participants reported not using alcohol before program participation. This high percentage of non-users does not allow

much room for positive change, which is what the exit survey data show. A Chi-Square test revealed no significant differences between the two groups. These results are supported by similar data from previous cohorts, consistent for this age group.

Table 12. Percent Comparison of Alcohol Use Last 30 Days

	Number of Responses	None	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	All 30 days
Treatment Exit Survey	84	82.1%	6.0%	4.8%	3.6%	0%	0%	3.6%
Comparison Entrance Survey	81	87.7%	4.9%	4.9%	1.2%	1.2%	0%	1.2%

10. Use of Marijuana Last 30 Days

Use of marijuana was measured pre and post program by asking for frequency of use in the prior 30 days. As can be seen in the table that follows, 88.1% and 91.4% of participants reported not using marijuana before program participation. This high percentage of non-users does not allow much room for positive change, which is what the exit survey data show. A Chi-Square test revealed no significant differences between the two groups. These results are supported by similar data from previous cohorts, consistent for this age group.

Table 13. Percent Comparison of Marijuana Use Last 30 Days

	Number of Responses	None	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	All 30 days
Treatment Exit Survey	84	88.1%	1.2%	1.2%	2.4%	2.4%	1.2%	3.6%
Comparison Entrance Survey	81	91.4%	8.1%	3.7%	1.2%	0%	0%	1.2%

DISCUSSION

As shown by the table below, the program yielded significant changes in all outcome subscales. Using the *Tanner-Smith, Durlak, and Marx (2018)* criteria for interpreting effect size changes, an effect size of .25 or greater would indicate strong program outcomes. Thus, the observed changes for “Enhanced Self-efficacy,” “Resiliency,” “Civic Engagement,” and “Leadership” exceeded this standard, showing strong program outcomes in a very modest period of program contact time. The observed changes for “Peer/Social Support”, “Interpersonal Skills”, and

“Planning and Decision Making” met this standard for several of the items, while the observed changes for “Alcohol and Drug Expectations” were below this standard, but were still significant.

Table 14. Comparison of Sub-Scale Results, Showing Numbers of Significant Items with Effect Size Ranges

Survey Outcome Subscales	Number of Items	Number of Items Significantly Different	Effect Size Range of Significant Items
Enhanced Self-Efficacy	10	10	.33 -.75
Leadership	6	6	.31 -.57
Peer/Social Support	5	5	.35 -.47
Resiliency	7	5	.31 -.51
Interpersonal Skills	8	7	.29 -.47
Civic Engagement	4	3	.28 -.47
Planning and Decision Making	10	5	.29 -.43
Alcohol and Drug Expectations	5	1	.26

Use of Alcohol and Marijuana Last 30 Days,

Consistent with data from previous RMYC program years, use of alcohol and marijuana among this age group is very infrequent. For all Summer 2021 participants, more than 80% reported no use upon entrance or exit of either alcohol or marijuana use in the past 30 days. However, among those who did report use, more than 70% reported reduced use upon exit.

REFERENCES

- Benson, P.L., Scales, P.C., & Syvertsen, A.K. (2011). The contribution of the developmental assets framework to positive youth development theory and practice. *Advances in Child Development and Behavior*, 41, 197-230.
- Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2002). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *Prevention & Treatment*, 5(1), Article 15.
<https://doi.org/10.1037/1522-3736.5.1.515a>.
- Durlak, J. A., Weissberg, R. P., & Pachan, M. K. 2010. A meta-analysis of afterschool programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology*, 45(3–4), 294–309.
- Edelman, A., Gill, P., Comeford, K., Largon, M, & Hare, R. (2004). *Youth development and youth leadership. A background paper*. Washington, DC: Institute for Educational Leadership.
<https://files.eric.ed.gov/fulltext/ED485711.pdf>.
- Guerra, N. C., & Bradhaw, C. P. (2008). Linking the prevention of problem behaviors and positive youth development: Core competencies for positive youth development and risk prevention. *New Directions for Child and Adolescent Development*, 122, 1-17.
- National Research Council and Institute of Medicine. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.
- OJJDP (Office of Juvenile Justice and Delinquency Prevention) Development Services Group. (2014). *Positive youth development: Literature review*. Washington, D.C.: Office of Juvenile Justice and Delinquency Prevention.
<https://www.ojjdp.gov/mpg/litreviews/PositiveYouthDevelopment.pdf>.
- O’Sullivan, R. G. (2021). *Community youth crew and regional youth crew summer 2021 evaluation data summary – October 2021 Rocky Mountain Youth Corps (RMYC)*. Chapel Hill, NC: O’Sullivan & Associates.
- Roth, J. L., & Brooks-Gunn, J. (2016). Evaluating youth development programs: Progress and promise. *Applied Developmental Science*, 20(3), 188–202.
<https://doi.org/10.1080/10888691.2015.1113879>.
- Schulman, S., & Davies, T. (2007). *Evidence of the impact of the ‘youth development’ model on outcomes for young people - A literature review*. <http://www.timdavies.org.uk/wp-content/uploads/V1-2-EVIDENCE-OF-THE-IMPACT-OF-THE-YOUTH-DEVELOPMENT-MODEL-ON-OUTCOMES-FOR-YOUNG-PEOPLE—A-LITERATURE-REVIEW.pdf>.

Shadish, W., Cook, T., & Campbell, (2002). *Experimental and quasi experimental design*. New York: Houghton Mifflin.

Tanner-Smith, S., Durlak, J, & Marx, R. (2018). Empirically based mean effect size distributions for universal prevention programs targeting school-aged your: A review of meta-analyses. *Prevention Science, 19*, 1091-1101.

Wray-Lake, L., & Abrams, L.S. (2020). Pathways to civic engagement among urban youth of color. *Monographs of the Society for Research in Child Development, 85*(2).
<https://srcd.onlinelibrary.wiley.com/doi/abs/10.1111/mono.12415>.