

# ***Exploring the relationship of participation and connectedness in afterschool programs to problem behavior***

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## ***Abstract***

As a fairly new establishment for childcare, afterschool programs are understudied. However, some research proposes that these environments provide risk prevention for problem behavior. This research investigates the roles of attendance and connectedness in afterschool programs upon children's substance abuse and problem behavior. Multiple regression analysis was used among 22 programs to gauge correlations between participation, connectedness, and behavior. This data, collected from 282 students, will help determine how factors such as race, age, and/or gender interact with participation and connectedness to shape outcomes. Overall, this research explores whether participation and connectedness in afterschool serves as a beneficial public health strategy.

## Introduction

Government expenditures on afterschool programs have dramatically increased over recent years. Additionally, this quickly growing segment of childcare has evolved from basic supervision to a more standardized form of education. Many individuals assume that enrollment in afterschool programs may deter students from partaking in problem behavior. However, few studies focus on participation and positive student outcomes. Demographics and program variation influence researchers' assessment of success and failure rates. For instance, differences in location shape factors such as the socioeconomic status and racial makeup of a program. Discrepancies between populations affect the uniformity of findings as seen in families in rural/agricultural communities compared to more affluent areas. As rural economic conditions worsen, parents experience more stress and children demonstrate higher rates of conduct problems and substance abuse (Conger & Elder, 1994; Riggs, 2006).

This research investigates afterschool programs for the purpose of exploring relationships between measures of students' attendance and connectedness to their afterschool program and the presence of four distinct behaviors: tobacco use, marijuana use, alcohol consumption, and delinquency. These findings will be analyzed using correlations and multiple regression analyses. The results of this research will potentially bring clarity to the current, yet limited research on this topic, as well as seek to combat the public health concern of emerging youth substance abuse.

## The Rapid Evolution of Afterschool Programs

As a fairly new establishment for child care, afterschool programs require critical evaluation. Transformations in the American economy consequently altered the livelihood of children. During the 18th and 19th centuries, many Americans migrated from agrarian communities to find work in developing cities. The first after school programs appeared in the mid-late 1800s as purposeful safeguards imposed by elders to dissuade and preoccupy children growing up in immigrant neighborhoods in major cities from negative potential influences (Halpern, 2002). Afterschool programs quickly gained popularity due to the birth of the baby boomers in the 1950s and a substantial increase of women entering the workforce.

Afterschool programs are now the quickest growing child care sector to-date. Currently, 8.4 million K-12 children (15 percent) participate in afterschool programs; however, an additional 18.5 million would participate if a quality program were available in their community (Afterschool Alliance, 2013). The Afterschool Alliance election poll found that 92 percent of working mothers believe that afterschool programs are “very important” given that kids in supervised afterschool programs are less likely to engage in risky behaviors, such as criminal activity and drug or alcohol use.

### Rationale for Research

Although some researchers disagree over their effectiveness, most communities believe there is a **need** for afterschool programs. Lengthy school day hours cause heavy strain as emphasis on academic work overshadows supplemental activities such as music, art, and physical education (Mahoney & Zigler, 2006). Afterschool programs provide a venue for other facets of learning which seems absent during the traditional six-hour school day. Furthermore, afterschool programs provide a unique opportunity to implement positive youth development (PYD) approaches, which teach substance use prevention skills along with participation in health education and cultural heritage activities (Tebes et al., 2007). We must capitalize on this educational space to implement prevention, which may ultimately serve as a Public Health tool against substance abuse in adolescence.

Previous studies suggest numerous positive effects of afterschool programs on youth. While research on the subject still remains limited, primary findings propose that adult regulated environments provide risk prevention for substance use and other problem behavior through developing personal and social skills (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Research from the Promising Afterschool Programs Study found that regular participation in high-quality afterschool programs is linked to significant gains in standardized test scores and work habits as well as reductions in behavior problems among disadvantaged students (The Afterschool Alliance, 2013). Furthermore, supervised structured settings are associated with enriched childhood attachment to school, academic excellence, communication skills, positive self-esteem, and identity (Belgrave et al., 2000; Durlak & Weissberg; 2007, Larson, 2000; Lerner, 2005).

Over the past few decades, federal funding for afterschool programs has climbed steadily. Education legislation played a major role in this expansion. For example, the 21st Century Community Learning Center program, authorized under Title X, Part I of the Elementary and Secondary Education Act, was a component of the Clinton administration’s attempt to assist

families and communities to keep their children “safe and smart.” The more recent “No Child Left Behind Act,” (NCLB) of which the Bush administration was a proponent, encompasses similar ideals. These Centers strive to support school district’s public schools which operate as community education centers concentrating on providing academic support, drug and violence deterrence programming, technology education, art, music, recreation, and character education (Gottfredson et al., 2004). The 21st Century Community Learning Centers received \$200 million dollars from Congress in 1999; furthermore, their funding has increased annually. The most recent appropriation to the program which, supports the creation of community learning centers that provide academic enrichment opportunities during non-school hours for children, was allotted in 2012 and totaled at \$1.1 billion (<http://www.ed.gov/21stcclc>). Though much money is spent on afterschool programs, there are still 30% of middle school and 4% of elementary school children unsupervised after the close of the six-hour school day (Afterschool Alliance, 2013).

With the exponential growth in funding for afterschool programs, society must continuously reevaluate their purpose and efficacy. An Afterschool Alliance election poll revealed that more than 3 in 4 voters say afterschool programs are “an absolute necessity” for their community. Even though the majority of society favors afterschool programs, we must consider reality: despite the logical appeal a program for youth may elicit and encompass, all afterschool programs do not guarantee effectiveness; moreover, the program may have more negative overall effects than positive (Capaldi 2009). Emerging research indicates that young people often learn to become deviant by interacting with deviant peers in settings such as therapy groups, alternative schools, boot camps, group homes, and juvenile justice facilities (Dishion, Dodge, and Lansford, 2006). In order to validate the benefits of an afterschool program, researchers, administrators, and child-related professionals must assume responsibility for proving there are some. This task consists of examining the effects of afterschool programs; challenges include overcoming small sample sizes, measuring relevant change, and threats to internal validity (Bender et al., 2011). Since federal funding and societal support will be more likely to endorse programs on the grounds of need *and* efficacy, we must consider how researchers have debated what constitutes an effective program.

### Conceptual Framework: Effective Programming

Researchers support the ideals of a program which utilizes social and emotional learning (SEL), a process for helping children and even adults develop the fundamental skills for life effectiveness, as well as teach the skills we all need to handle ourselves, our relationships, and our work, effectively and ethically (Graczyk & Weissberg, 2003). The proximal goals of SEL programs are to foster the development of five interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Durlak et al., 2011). Durlak et al.’s meta-analysis synthesizes 213 studies of SEL programs for children in grades K-12 and illustrates how education stakeholders can promote healthy development of children by advocating for the incorporation of evidence-based SEL programming into standard educational practice. Findings showed that children who participated in these programs experienced noteworthy academic achievements. Compared to controls, SEL participants exhibited considerably enhanced social and emotional skills, attitudes, behavior, and academic performance that reflected an 11-percentile-point gain in achievement (Durlak et al., 2011). Staff positivity, the degree to which staff evidenced enjoyment of children in an afterschool program, was positively associated with children’s

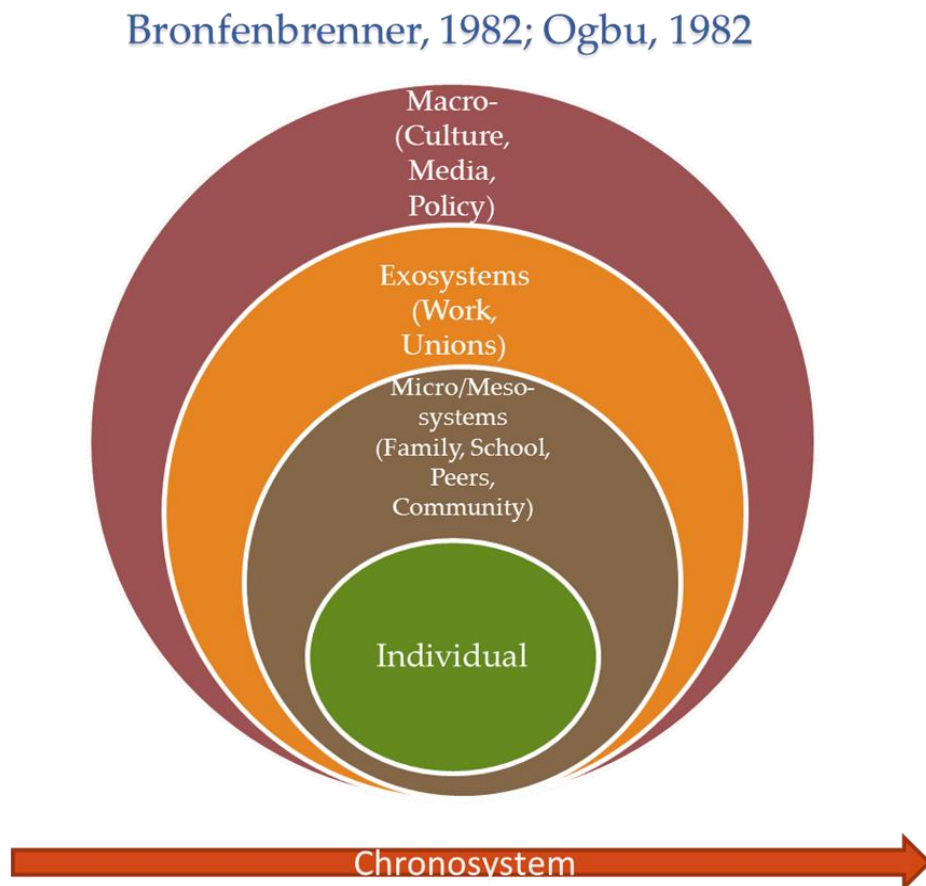
academic grades, work habits, and social skills with peers; additionally, staff positivity was rated more highly in programs that were more flexible and offered more activities (Pierce et al., 1999). Overall, an effective afterschool program must serve as a supervised environment which allows students to find intrinsic motivation while promoting academics, positive peer and personal skills, and substance abuse prevention.

### Conceptual Model

This study follows the theoretical approach of Urie Bronfenbrenner, 1982. Bronfenbrenner suggested that in order to analyze an individual, one must take their entire ecology into consideration. Every individual lives within a macrosystem, with any broad ideologies, laws and customs of one's culture, subculture or social class. Residing within a macrosystem, an exosystem is comprised of local government, unions, and services. Delving deeper, a meso/microsystem will consist of direct relations to the individual such as the systems of family, religious institution, peers, school, and community (Nielsen, 2011). Before we delve into analyzing the efficacy of afterschool programs, we must first identify its location in the Eco-developmental Model and role on youth.

**Figure 1.** Bronfenbrenner Eco-developmental Model

## Etiology: Eco-developmental Model



All of the systems of this model interact and affect the individual. For instance, educational policy such as NCLB and 21<sup>st</sup> Century Learning Centers exist within the context of the macrosystem. Community adults, peers, and schools form the micro/mesosystem. An afterschool program falls under the micro/mesosystem which stands as a proximal system to a child within the Eco-developmental Model; moreover, afterschool programs may have sizeable effects on children. The Eco-developmental Model frames a conceptual query regarding the examination of the intricacies of interactions and outcomes between afterschool programs and children.

Afterschool programs, a facet of the micro/mesosystem, connect peers and families which potentially facilitates social bonding. Travis Hirshi, an American criminologist, proposed an influential theory on social control in his 1969 book, *Causes of Delinquency*. He postulated that when an individual has experienced a lack of social connections or a lack of social network that would normally prohibit criminal activity, the likelihood that the individual will participate in criminal activity increases (Ortiz, 2011). According to the Office of Juvenile Justice and Delinquency Prevention, violent crimes by juveniles occur most frequently in the hours immediately following the close of school on school days (OJJDP, 2010). Unstructured socializing with peers in the absence of authority figures presents opportunities for deviance; in the presence of peers, deviant acts will be easier and more rewarding. Furthermore, the absence of authority figures may lead to a lack of structure which generates more time available for deviant behavior (Osgood et al., 1996). If we can find more conclusive evidence in support of engagement in SEL based afterschool programs as a public health tool against problem behaviors, we may be able to pinpoint sensitive precursors in a child's life and handle the specified aspect of a system more consciously in effort to circumvent undesirable outcomes.

#### Research Review: Attendance, Connectedness, and Reliable Research

With the breadth of findings from past research, one might inquire what other aspects of afterschool programs requires examination. This study holds a different vantage point from previous research. We emphasize the importance of students' attendance *and* connectedness in an afterschool program as major determinants of its efficacy in preventing potential problem behaviors. We operationalize and specify these two factors as attendance at the program and connectedness to the program, staff, and peers.

The most reliable finding amongst these studies is that youth attend infrequently and for a short period of time. No program can make a difference if it does not change the daily experiences of young people, and it cannot do that if attendance is poor; moreover, programs must increase attendance or they will not achieve their goals (Granger & Kane, 2004). On the other hand, researchers have yet to specify relationships between frequency of attendance and the reduction of problem behavior. One naturalistic study found that children who experienced moderate amounts (1–3 hr) of adult-supervised activity-oriented care in the first grade, were rated as significantly more socially competent in the sixth grade when compared to children who received none or high (4 or more hr) amounts of this type of care (Riggs & Greenberg 2004). Is there an attendance threshold for cutoffs to benefits and tradeoffs to time spent?

As opposed to attendance, connectedness embodies a qualitative measure. In fact, a recent study suggests that more connectedness leads to higher attendance (Bulanda & Mccrea, 2013). Intuitively, one would expect to see the workings of group think and peer influence on

individuals connected to a group. Furthermore, a group that is connected and encouraged to positively shape their peers may demonstrate fewer problem behaviors (Smith, Osgood, Caldwell, Hynes, & Perkins, in press). Of the limited research analyzing this subject, researchers conclude that a lack of school engagement negatively affects millions of students, and efforts to connect students to schools should be at the forefront of current initiatives to improve education and substance abuse prevention (Sulkowski et al., 2012). Overall, it appears that after-school programs may have positive impacts on participants, but more rigorous research designs are necessary to provide data that clearly document program effects (Scott-Little et al., 2012).

Some research proposes a need for a balance of afterschool program and parental care during out of school time. A recent study investigated how parents, teachers, and out of school hours care (OSHC) coordinators perceived children's behavior according to three afterschool arrangements: fulltime afterschool care, fulltime parental care, and a combination of both styles of care (Simoncini, Caltabiano, & Lasen, 2012). The Strengths and Difficulties Questionnaire also used our study, rated children's behavior. Simoncini et al.'s study found that teachers and OSHC coordinators reported the most behavior problems in children who were in fulltime afterschool care. Additionally, teachers and coordinators rated boys as having more behavior problems than did girls; however, mothers' reports revealed no differences in children's behavior according to after-school care arrangements or gender. Ideally, childcare during out of school time should not completely rely on afterschool programs for support; supplementary parental care is favored. Unfortunately, many parents do not have that capability due to work. This dynamic prompts research on strengthening afterschool programs given that parents and communities depend on them to care for our children.

Developing and executing reliable research stands as a challenging task. Large variations in samples create complications in comparing research findings. Many research studies focus on large groups of students such as Durlak et al.'s meta-analysis of children K-12 (2011) or very contained groups such as Pierce et al.'s work relating children's experience in after-school programs to first grade performance (1999). This study examines children in 2nd through 5th grades due to their tender age yet ability to comprehend and respond meaningfully to surveys on afterschool programs. Additionally, many research studies target a specific demographic. For instance, Riggs conducted a study of the influence of attendance on the social outcomes of Latino elementary school children who participated in an academically-oriented after school program, based on attendance records and teacher, parent, and child questionnaires (Riggs, 2006) which corresponds with my research question. The current study entails a racially and ethnically diverse sample as opposed to a specific demographic. Within this sample, one may examine and control for racial differences as a supplementary investigation. Nonetheless, Bender et al. (2011) explains how conducting research on afterschool programs creates complex challenges from working with small sample sizes, gauging relevant change in behavior, and threats to internal validity. Their study details a major inherent limitation in the evaluation of afterschool programs: the perplexing problem of assigning youth to receive or not to receive programming. Selection bias and direct sources of efficacy become questionable when utilizing research on voluntary youth enrollment in afterschool programs. Will high levels of motivation among voluntary participants skew results? Moreover, programs vary in purpose, aim, and structure which generate complexity in evaluating program. Despite these challenges, the trajectory of modern society prompts research studies that focus thorough examination on strengthening this growing

sector of child care. This study aims to examine the gaps between previous studies through utilizing a systematic and cluster sample and assessing the two variables of attendance and connectedness to afterschool programs in relationship to reduced potential problem behaviors.

## Methodology

### Sample

This study involves 2 cohorts of elementary-school-based afterschool programs. During 2009-2010 cohort, one contained 12 southern PA programs; subsequently, in 2010-2011, cohort 2 contained 10 southeastern PA programs. Combined, this sample examines 282 children. Afterschool program providers were contacted and agreed upon participation for a full year. The size of the programs may range from 3 staff and 30 children to as many as 150 children in various grades with 10 staff persons.

### Measures

This study examines students' relationships with peers and afterschool staff through two important measures: daily attendance tracking and a detailed survey about their perception and participation in the program.

#### *Attendance*

We examine students' attendance through recorded charts with data that spans the entire year. Students' presence was indicated by a check mark on a weekly attendance sheet. In order to depart for the evening, students were signed out by an adult with a time of exit and signature. We obtained the sheets directly from the afterschool program and catalogued each participating child's presence on an excel document that was imported to our SPSS dataset.

#### *Survey*

Children in grades two through five received a questionnaire which detailed their participation in the program, behavior, reflections regarding intrapersonal and interpersonal relations, and self-report about problem behaviors. The survey was administered twice, once in the fall and once in the spring to allow students ample time to develop a connection with the program, albeit positive or negative. There were items on the survey that inquired about students' sense of connectedness through posing a statement which required an ordinal response of 1-3 indicating 'not true', 'sometimes true', or 'very true' respectively. The items were coded such that high scores represented a stronger sense of connectedness. Items reflecting less satisfaction with peers and staff were recoded to be consistent with high scores representing more connectedness. Specifically, problem behavior was measured by inquiring about the presence of the several types of undesirable behaviors in the previous 6 months. Concerning the score for the problem behavior and substance use, we used 5 items: (1) "In the past 6 months, have you smoked cigarettes or used other tobacco products"; (2) In the past 6 months, have you on purpose broken, damaged or destroyed something belonging to family, school or neighborhood"; (3) In

the past 6 months, have you drunk any wine, beer or liquor"; (4) In the past 6 months, have you taken something from a store without paying for it"; (5) In the past 6 months, have you smoked marijuana, also called grass, pot, reefer or weed". The response categories for these items are: 1 for Yes, and 0 for No. The scale scores were obtained by computing the average across those 5 items.

**Table 1.** Afterschool Connectedness

These questions are not about your school day, but just about when you are in the afterschool program.

Statement	Not True	Sometimes True	Very True
I feel close to people at my afterschool program.	1	2	3
I feel like I am a part of my afterschool program.	1	2	3
I am happy to be at my afterschool programs.	1	2	3
The staff in my afterschool program treats children fairly.	1	2	3
I have trouble getting along with the staff at my afterschool program (recoded).	1	2	3
I feel that my afterschool program staff cares about me.	1	2	3
I feel safe in my afterschool program	1	2	3
I like the children in my afterschool program.	1	2	3



**Table 2. Problem Behavior and Substance Use**

Where would people your age be most likely to get apples or bananas?

- a. get them from home
- b. buy them from a store
- c. get them at school
- d. get them from friends

Where would people your age be most likely to get cigarettes?

- a. get them from home
- b. buy them from a store
- c. buy them from a cigarette

***In the past 6 months...***

have you smoked cigarettes or used other tobacco products?

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

have you, on purpose, broken or damaged or destroyed something that belonged to your parents (person who takes care of you), other people in your family, school, or neighborhood?

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

have you done a chore around the home without being asked in order to help out your family? (Recoded).

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

have you drunk any wine, beer, or liquor?

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

have you taken something from a store without paying for it?

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

have you smoked marijuana, also called grass, pot, reefer or weed?

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

have you given a gift to someone in your family? (Recoded).

*NO / YES*

If yes, how many times?

*Once / Twice More / Often*

## Consent

Prior to the commencement of this study and collection of data, families were sent two forms of consent which allowed parents to agree or disagree with their child's participation in the study. Both forms were available in Spanish for non-English speaking adults, the children were all found to be able to speak English. If at any point over the course of the study the parents wanted to discontinue their child's participation, their request was honored and data was destroyed. One of the forms, entitled, 'Parental Consent Form for Social Science Research,' regarded the child's participation in the survey and followed an opt-out consent method. Parents were given three to four weeks to return the form, indicating refusal to have their children complete the surveys for the *Strengthening Afterschool Programs* study. If the parent agreed to have their child complete the surveys, no response was needed; however, the parents were asked to keep the form for their records. The other form, entitled 'Parental Informed Consent Form (Active)', involved the child's allowing researchers to collect information about the child's school behavior and achievement as well as permission to videotape and/or photograph the child. Information on school behavior and achievement entailed classroom performance, standardized test scores, attendance, and disciplinary records for the current school year and the following school year. Researchers requested permission for videotaping and/or photography in order to develop training, educational, descriptive, and dissemination of materials. Under FERPA, The Family Educational Rights and Privacy Act of 1974, children could not participate unless parents actively granted consent. Both forms included a purpose for the study, potential risks and benefits, privacy and confidentiality information, and contact information for any questions, comments, or concerns. Parents were also informed that participation in the study was voluntary and would not affect the child's grades; moreover, if the parent and/or child no longer chose to participate, they could indeed drop out at any time without any consequences.

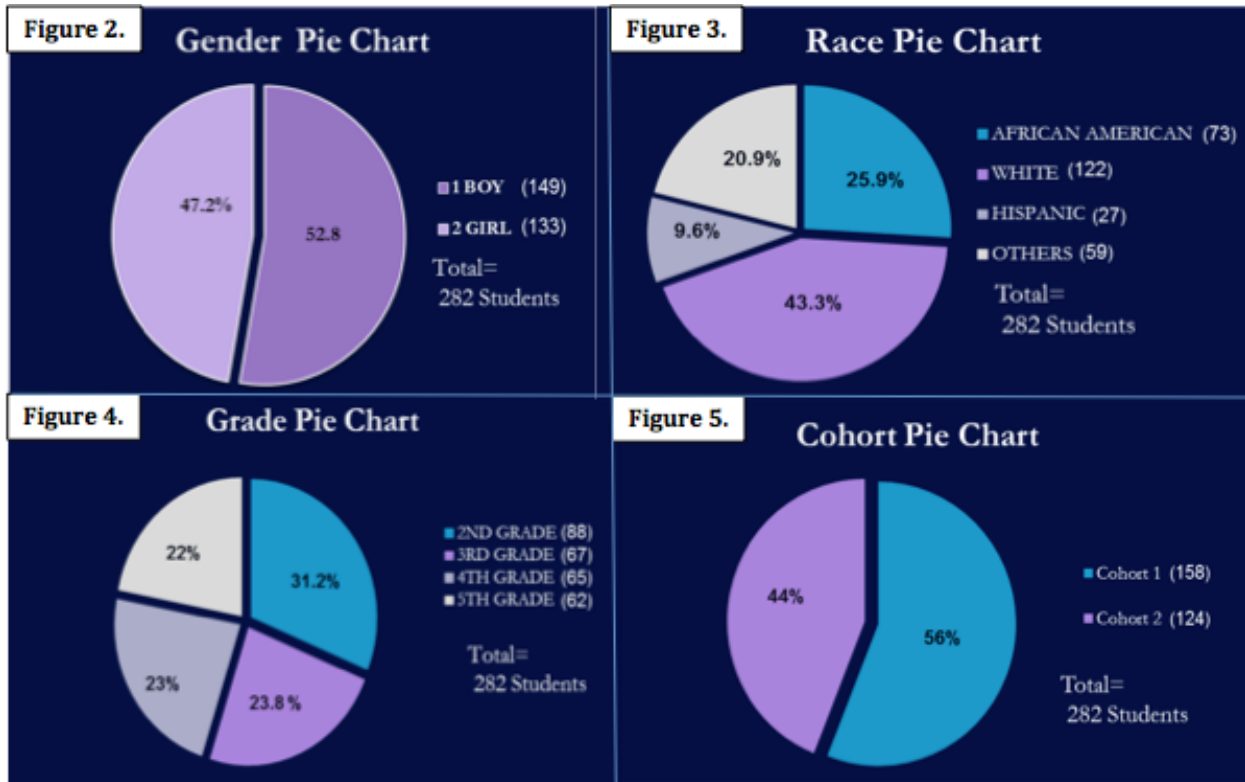
## Analysis

Attendance and responses to the child survey was assessed and examined for relationships with four distinct behaviors: tobacco use, marijuana use, alcohol consumption, and delinquency. Furthermore, multiple regression analyses were utilized on the data to determine if various factors such as race, age, and/or gender affected outcomes. Does attendance and connectedness play a role in reducing potential problem behaviors?

## Results

### Demographics

Figures 2-5 provide a dissection of the gender, race-ethnicity, grade, and cohorts of the sample respectively. The sample contains 282 students with 52.8% males and 47.2% females. The majority of our population was White (43.3%). Hispanics were the smallest racial-ethnicity subset totaling at 9.6%. African Americans and Others, any race other than White, Hispanic, or Black, were roughly similar at 25.9% and 20.9% respectively. Grades two through are also split similarly with a slightly larger portion of 2<sup>nd</sup> graders. Cohort 1 accounts for 56% of the sample, leaving the remaining 44% of the population represented through Cohort 2.



### Descriptive Statistics on Demographic Characteristics, Connectedness, and Problem Behavior

The descriptive statistics used in this article contained four independent demographic variables: gender, grade, race-ethnicity, and attendance. There were two dependent scales, problem behavior and afterschool connectedness, with a pre and posttest for each scale. The only initial significant finding from our analyses revealed that males experienced more problem behavior and less connectedness; moreover, there were significant differences in attendance regarding race-ethnicity.

Since the original descriptive statistics evidenced significant findings regarding race-ethnicity and attendance, we decided to run a post hoc on each aforementioned variable. The post hoc exposed stark a difference amongst the race-ethnicity variable and attendance.

**Table 3. Descriptive Statistics****Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AC Fall	233	1.17	3.00	2.4698	.43881	-.919	.159	.364	.318
AC Spring	194	1.00	3.00	2.4210	.49717	-.939	.175	.223	.347
PB Fall	225	0.00	1.00	.1071	.22704	2.569	.162	6.237	.323
PB Spring	190	0.00	1.00	.1036	.22317	2.644	.176	6.963	.351
Valid N (listwise)	136								

Notes: AC= Afterschool Connectedness; PB= Problem Behavior

**Table 4. Race-ethnicity Differences in Afterschool Participation**

**Multiple Comparisons**

Total Days of Afterschool Participation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
				Lower Bound	Upper Bound	
1 AFRICAN AMERICAN	2 WHITE	-15.133	6.314	.104	-31.94	1.67
	3 HISPANIC	9.210	9.298	1.000	-15.53	33.95
	4 OTHERS	4.941	7.599	1.000	-15.28	25.16
2 WHITE	1 AFRICAN AMERICAN	15.133	6.314	.104	-1.67	31.94
	3 HISPANIC	24.344*	8.721	.034	1.14	47.55
	4 OTHERS	20.074*	6.882	.023	1.76	38.39
3 HISPANIC	1 AFRICAN AMERICAN	-9.210	9.298	1.000	-33.95	15.53
	2 WHITE	-24.344*	8.721	.034	-47.55	-1.14
	4 OTHERS	-4.270	9.692	1.000	-30.06	21.52
4 OTHERS	1 AFRICAN AMERICAN	-4.941	7.599	1.000	-25.16	15.28
	2 WHITE	-20.074*	6.882	.023	-38.39	-1.76
	3 HISPANIC	4.270	9.692	1.000	-21.52	30.06

\*. The mean difference is significant at the 0.05 level.

Table 4 illustrates that Hispanics and Others attend afterschool programs significantly less than Whites.

Internal Consistency

Table 5, a view of the internal consistency of each scale on the survey, supports the validity and reliability of the various items in assessing problem behavior and afterschool connectedness.

**Table 5. Internal Consistency**

Internal Consistency		
Scale	# Items	Alpha
PB	5	0.77
AC	8	0.84

### Correlation Matrix of Problem Behavior, Afterschool Connectedness, and Attendance

Table 6 depicts a correlation matrix giving the correlations between all pairs of data sets. The correlation matrix contains five variables: fall problem behavior, spring problem behavior, fall afterschool connectedness, spring afterschool connectedness, and attendance for an entire school year. Fall problem behavior is positively associated with spring problem behavior, yet inversely associated with fall afterschool connectedness. There is no significant correlation between fall problem behavior and spring afterschool connectedness. Spring problem behavior is inversely correlated with both fall and spring afterschool connectedness. Fall afterschool connectedness was positively associated with spring afterschool connectedness. Our data suggests that connectedness precedes problem behavior outcomes. The fact that fall problem behavior is not related to spring connectedness, but that fall afterschool connectedness has a significant inverse relationship with spring problem behavior is beginning evidence that afterschool connectedness is influencing problem behavior and not vice versa. This temporal precedence is not sufficient enough to declare that afterschool connectedness caused problem behavior. According to the correlation matrix, attendance in afterschool programs has no correlation to any of the aforementioned variables

**Table 6. Correlation Matrix**

		Correlations				
		Fall PB	Spring PB	Fall AC	Spring AC	Year Attendance
Fall PB	Pearson Correlation	1				
	N	225				
Spring PB	Pearson Correlation	<b>.615**</b>	1			
	N	143	190			
Fall AC	Pearson Correlation	<b>-.285**</b>	<b>-.352**</b>	1		
	N	223	149	233		
Spring AC	Pearson Correlation	-.152	<b>-.253**</b>	<b>.437**</b>	1	
	N	146	183	153	194	
Year Attendance	Pearson Correlation	.060	.049	-.034	-.054	1
	N	195	171	204	175	237

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Notes. PB= Problem Behavior. AC= Afterschool Connectedness

## Multiple Regression

Below, Table 7 represents the multiple regression of spring problem behavior. The table serves as a product of a statistical procedure identifying the relationship between two or more independent variables in an effort to identify patterns within the relationship. Each independent variable contains a reference variable. Any variable not listed within a subset of the sample stands as the reference variable. For instance, for race, the reference variable is white. All the variables were entered at once in the regression model. The dependent variable was the "problem behavior and substance use" scale. The independent variable included demographic variables (gender, grade, and race), pre score, attendance, and afterschool connectedness.

**Table 7.** Multiple Regression of Spring Problem Behavior

Coefficients <sup>a</sup>					
Variable	Unstandardized Coefficients		Standardized Coefficients	Sig.	
	B	Std. Error	Beta		
(Constant)	-.004	.138		.977	
Male	.041	.028	.104	.146	
Black	.045	.038	.092	.242	
Hispanic	.043	.055	.057	.439	
Other	.024	.038	.048	.522	
2nd Grade	.027	.039	.061	.498	
3rd Grade	.011	.042	.023	.790	
4th Grade	.032	.039	.073	.413	
Cohort 1	.001	.030	.003	.969	
Year Attendance	.001	.001	.101	.180	
Fall PB	.549	.070	.573	<b>.000**</b>	
Spring AC	-.055	.032	-.131	<b>.085*</b>	

a. Dependent Variable: Spring PB

*p < .1.	** p < .01.	***p < .05.			
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Notes. PB= Problem Behavior. AC= Afterschool Connectedness

The data suggests that the quality of participation in afterschool programs has more implications than the quantity of time spent in afterschool programs. Fall problem behavior predicts spring problem behavior while afterschool connectedness affects problem behavior overall. As seen in the Model Summary in Table 8, R-Square is 43%. R-Square is the proportion of variance in the dependent variable (spring problem behaviors) which can be explained by the independent variables (gender, race, grade, cohort, attendance, fall problem behavior, and spring afterschool connectedness).

**Table 8. Model Summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655 <sup>a</sup>	.429	.377	.15581

a. Predictors: (Constant), Male, Black, Hispanic, Other, 2nd Grade, 3rd Grade, 4th Grade, Cohort 1, Year Attendance, Fall PB, Spring AC

### Summary and Discussion

In this article, we explored the relationship of participation and connectedness in afterschool programs to problem behaviors. Revisiting the hypothesis, we can confirm that connectedness is related to problem behaviors; however, we cannot conclude the same for attendance. The sample included a diverse population across gender, grade, race-ethnicity, and cohort. The correlation matrix revealed an inverse relationship between afterschool connectedness and problem behavior. In other words, as afterschool connectedness increased, problem behaviors decreased. Once again, attendance was not significantly correlated to the presence of problem behaviors. The multiple regression table indicated that fall problem behavior stands as the strongest predictor of spring problem behavior. After adjusting the significance cut off, afterschool connectedness became more relevant in predicting spring problem behaviors.

### Strengths and Limitations

Our study encompasses several of strengths. The sample included 282 children across 22 programs; however, the predominant population was white, yet we had a sizeable minority population. Undoubtedly, demographics influence results, as previously mentioned. While sizeable, our sample only includes programs in Pennsylvania. Conversely, including both fall and spring measures as a pre and post marks helped establish a baseline for comparison and identify a relative change in our research points. In order to strengthen this study further, one may consider including multiple sources of data. For instance, one could strengthen findings by adding multiple sources of report including teachers and parents. Collecting additional data sources such input from parents or instructors would serve as a validity check for the responses recorded in the child survey.

### Future Research

For future research, we would like extend the current literature review on participation and connectedness in afterschool programs to include both school and afterschool. We will likely identify many more articles on connectedness in school and attempt to extend to afterschool. We



would also like to extend the current analyses on Cohort 1 and 2 to also include Cohort 3, data on the greater Philadelphia Area, which is in progress for data entry.

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