

AFTER-SCHOOL ACTIVITIES AS OPPORTUNITIES FOR POSITIVE YOUTH DEVELOPMENT

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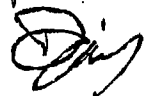
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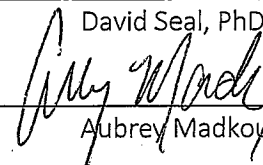
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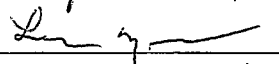
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ABSTRACT

Background: High school graduation rates in the United States vary greatly by race, urbanicity, and socioeconomic status. These disparities in educational attainment may perpetuate cycles of poverty and compound disparities in health. Identifying factors that improve school engagement, particularly among students most at risk for dropping out of high school, could improve graduation rates and potentially impact health disparities. This study aims to identify the effect of extracurricular activity participation (EAP) on youth outcomes including arrest, high school completion, and ACT scores; to determine whether school engagement mediates this effect; and to describe opportunities to modify this relationship.

Methods: This study involves two longitudinal secondary data analyses and one qualitative analysis. Quantitative data included the National Survey of Adolescent Health and data from Chicago Public Schools' urban debate program. Quantitative studies used logistic regression to assess the relationship between student engagement, EAP, and youth outcomes. Bootstrapping was used to test for mediation of this relationship. The qualitative study investigated participation in an after-school community center (APEX) among young men in New Orleans, and whether APEX impacts youth development and community violence.

Results: School engagement was higher among students participating in after-school activities. Engagement partially mediated the relationship between after-school activities and youth development outcomes, such as increased likelihood of high school completion and reaching the benchmark on the ACT, and decreased likelihood of arrest after age 18. Qualitative results indicated that important elements of programming for New Orleans youth include safety, leadership opportunities, and positive socialization with adults and other youth participants.

Conclusions: This study provides data regarding after-school activities, youth outcomes, and school engagement for a large, diverse sample of students. These findings underscore the importance of investing in co-curricular and after-school programs for adolescents, particularly in urban districts aiming to increase academic engagement and raise graduation rates.

BACKGROUND AND SIGNIFICANCE

Problem Definition: At-risk youth and disparities in positive youth development

Substantial and potentially growing disparities based on race, ethnicity and socioeconomic status (SES) exist in health, educational attainment, and involvement in violence (Krieger, Chen, Waterman, Rehkopf, & Subramanian, 2005; Williams & Jackson, 2005). These effects are transgenerational; for example, a parent's educational attainment has a direct effect on their child's likelihood of graduating from high school (Ensminger & Slusarcick, 1992). The school environment, neighborhood conditions, arrest rates, and concentrated poverty may reinforce existing disparities. Identifying and understanding the mechanisms that can improve outcomes for at-risk youth could impact long-term SES and health status.

Adolescence presents an opportunity for altering or preventing risky behavior because of developmental changes occurring at this time and the potential for establishing risk behaviors that can have long-term health effects. Adolescence is characterized by reward-seeking behavior (Galvan, 2010) and the development of higher-level thinking and reasoning skills (Sternberg & Downing, 1982). Additionally, during adolescence risk behaviors that may lead to long-term adverse outcomes peak (Wolfgang, Thornberry, & Figlio, 1987). Providing youth opportunities for socialization and engagement may prevent delinquency or disengagement from school and eventually prevent arrests or dropping out of high school (Morrison, Robertson, Laurie, & Kelly, 2002).

Positive youth development is a framework for the patterns of risk and protective factors in adolescence that "promote healthy social, emotional, behavioral, and cognitive development" (W.T. Grant Consortium, 1992). Rather than targeting a single behavior or risk factor, positive youth development programs aim to improve bonding, resilience, social and emotional competence, and prosocial norms among youth (Catalano et al., 2004). Changes in these domains may impact multiple academic, developmental, and behavioral youth outcomes.

Improving opportunities for positive youth development is particularly important for

adolescents most at risk for dropping out of high school or delinquent behavior. Students in the Southern U.S., male students, black and Latino students, and students in areas with high rates of poverty have elevated risk for not finishing high school (Swanson, 2004) and for involvement in violence.

Disparities in health and education

Disparities in educational attainment mirror and may compound disparities in health. While 75% of U.S. students graduated high school overall in 2009, only 62% of black students and 64% of Latino students graduated, versus 81% of white students and 91% of Asian-American students (National Center for Health Statistics [NCHS], 2012). Healthy People 2020 includes new school-related objectives for adolescent health, aiming to improve high school graduation rates from 74.9% to 84.2% after four years (Healthy People 2020, 2012).

Dropping out of high school is linked to reduced income, job security, and long-term health status, and educational attainment is the component of SES most strongly associated with health status and disease (Winkleby, 1992). At age 25, men and women with college degrees can expect to live to age 79.7 and 83.5 respectively, versus 72.9 and 78.4 for men and women who did not finish high school (Robert Wood Johnson Foundation [RWJF], 2011). Additional years of schooling are associated with increased likelihood of being in self-reported good health, and reduced likelihood of suffering from chronic diseases such as asthma, heart disease, and cancer (Silles, 2009).

Urban settings tend to have poorer educational outcomes than suburban or rural settings (Swanson, 2008). This disparity is particularly pronounced in Louisiana and specifically in New Orleans. In New Orleans in 2011, 59% of students in the Recovery School District graduated high school after four years (Educate Now!, 2013). In Louisiana in 2009, 67% of students graduated high school after four years; graduation rates were 59% for black students and 74% for white students (Annie E. Casey Foundation [AECF], 2012). Similarly, in Chicago from 2000

to 2005, only 43% of students graduated from high school after four years (Consortium on Chicago School Research [CCSR], 2008).

Similarly, neighborhood SES impacts a student's likelihood of graduating from high school. Neighborhood poverty rate, unemployment, and average educational attainment are associated with increased likelihood of dropping out of high school (Crowder & South, 2003).

Disparities in arrest rates

Differences in arrest rates based on race/ethnicity are striking and mirror similar disparities in health, income, and SES. Black men are nearly seven times as likely to be arrested during their lifetime as white men born at the same time (Pettit & Western, 2004). While women are much less likely to be arrested than men, black women are more likely to be arrested than white women (Daly & Tonry, 1997). Recidivism is also more common among black men versus white men, and the time to rearrest is shorter (Jung, Spjeldnes, & Yamatani, 2009). Arrest rates vary based on educational attainment; persons with only a high school diploma or who have dropped out of high school are much more likely to be arrested than those with college degrees (Pettit & Western, 2004). Particularly among young men, disadvantage early in life has been linked to increased likelihood of arrest (Tibbetts & Piquero, 2006).

The relationship between arrest rates and health is thought to operate via the effects of social conditions such as poverty on health. Disproportionate arrest and conviction rates reinforce disparities in poverty and joblessness, due to fewer legal job opportunities post-release (Arditti & Parkman, 2011). Because poverty and joblessness are linked to long-term health status, disparities in arrests and incarcerations reinforce health disparities based on income and SES.

Because of the complex risk factors for arrest and its long-term consequences, preventing involvement with the criminal justice system should be a goal of efforts to impact positive youth development. Identifying practical means, such as after-school activities, for

improving youth outcomes, particularly among at-risk youth, can also address larger disparities in health and SES.

Modifiable risk factors

Though high school graduation rates have been improving in the United States overall, rates vary greatly by race, urbanicity, and SES (NCHS, 2012). These disparities in educational attainment may perpetuate cycles of poverty and compound disparities in health.

School engagement, or students' behavioral and emotional connectedness with school, is a strong predictor of high school graduation and college attendance (Finn & Owings, 2006) and is an indicator of positive youth development (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). Identifying factors that improve school engagement, particularly among students most at risk for dropping out of high school, could improve graduation rates and potentially impact health disparities.

School engagement varies based on demographic and contextual characteristics, which may impact the effectiveness of after-school programs designed to improve positive youth development. Female students, white students, and students with higher family SES are more likely to have higher behavioral and emotional school engagement (Li & Lerner, 2011).

Improving adolescents' engagement with school can improve youth outcomes across a range of indicators. Disengagement over time can lead to dropping out of school (Finn & Owings, 2006). Increased behavioral engagement, such as participation in an organized extracurricular activity, can increase emotional engagement (Li & Lerner, 2011) and bonding with peers and adults at school. Forming positive relationships with peers and adults, particularly in the context of purposeful activities, can prevent delinquency and improve social and academic outcomes (Catalano et al., 2004). After-school activities, such as sports, academic clubs, or music groups, can improve students' connection with school and with each other (Fredricks & Eccles, 2008). The opportunities for socialization during extracurricular activity participation (EAP) contribute to school engagement overall (Catalano & Hawkins,

1996).

The Social Development Model and Positive Youth Development

Academic outcomes and arrests are appropriate markers of positive youth development because of the wide range of risk factors and long-term consequences for both outcomes. Positive youth development aims to impact a range of youth outcomes, such as bonding, resilience, social and emotional competence, and prosocial norms, since any single factor would be too narrow (Catalano et al., 2004). However, because of the importance of high school graduation to long-term SES and health, and because of its association with indicators of positive youth development (resilience, social and school engagement) (Freudenberg & Ruglis, 2007), this analysis treats it as a benchmark of positive youth development. Similarly, because of the potential cascade of negative effects of arrest (Geller, Garfinkel, Cooper, & Mincy, 2009; Kulkarni, Baldwin, Lightstone, Gelberg, & Diamant, 2010), arrests can serve as another benchmark of youth development.

The social development model (SDM) (Catalano & Hawkins, 1996), which was originally designed to model antecedents of delinquency, operates within the framework of positive youth development. The SDM describes the importance of social interactions and past behavioral risk to youth development and outcomes. According to the SDM, the social interactions, bonding, and purposeful group action often characteristic of extracurricular activity participation (EAP) can improve youth development and outcomes. Though it was not designed to model the effects of EAP among youth, the factors that the SDM highlights as important for positive youth development fit well with longitudinal analyses of EAP and youth development. If a lack of opportunity to practice prosocial behaviors promotes delinquency (Catalano & Hawkins, 1996), then conversely, activities which promote prosocial behaviors may prevent delinquency and improve academic outcomes. In the SDM, socialization occurs during purposeful activity involvement, skills associated with the activity, and positive reinforcement from competitive success or activity outcomes (Huang, Kosterman, Catalano, Hawkins, & Abbott, 2001).

Programs which promote positive socialization contribute to positive youth development overall. Additionally, the SDM stresses the importance of past behaviors to future delinquency and youth outcomes. Catalano and Hawkins (1996) discuss the potential for “reciprocal effects” of past delinquent behaviors to impact future actions; similarly, prosocial behaviors can also reciprocally affect future socialization. That is, a history of academic risk can impact future youth development.

This dissertation applies the SDM's focus on reciprocal effects of past behaviors and opportunities for prosocial interactions to analyses of EAP and youth outcomes. If EAP impacts positive youth development via the mechanism described by the SDM, then school engagement may reflect this positive effect. According to Catalano and Hawkins (1996), activities which prevent delinquency should also be related to other markers of positive youth development, such as high school graduation. These analyses apply the SDM to positive youth outcomes, and they test whether the positive socialization described by Catalano and Hawkins and achieved via EAP leads to longer-term outcomes, such as high school graduation, college readiness, or reduced likelihood of arrest.

The SDM guided this project in that it considered the effects of past behaviors (school engagement, past school performance) on youth outcomes (graduation, arrests), and whether this relationship is altered by participation in activities (EAP) that involve social interactions and purposeful group action.

Significance

Disparities in education and health based on race/ethnicity and SES are well documented and persist in part because of low graduation rates in high-poverty areas with higher proportions of minority students (Williams & Collins, 2001). Because changes in school engagement can contribute to positive youth development and impact social and academic outcomes, research should identify opportunities to improve school engagement, particularly among students most at risk for dropping out. According to the SDM, activities that improve

prosocial bonding can contribute to school engagement, but research has not examined the relationship between school engagement, activity participation, and major markers of positive youth development. Additionally, while longitudinal analyses have examined the relationship between EAP and an outcome at a later time point, analyses have not investigated the relationship between EAP and markers of youth development, such as school engagement, and their combined effect on youth outcomes. Understanding the antecedents and intermediate outcomes of school engagement can shape after-school programming and education policy, particularly among students at risk for low educational attainment.

LITERATURE REVIEW

EAP is an opportunity for improving positive youth development that is already built into the school structure. EAP has been linked to increased school engagement and educational attainment (Fredricks & Eccles, 2008; Anderson & Mezuk, 2012), and in some cases fewer risk behaviors (Feldman & Matjasko, 2005; Fredricks & Eccles, 2005; Gardner, Roth, & Brooks-Gunn, 2008). Extracurricular activities increase the amount of time students spend at school and interacting with school staff, and because they operate within the school infrastructure, they may be less costly than instituting a new intervention program to improve educational attainment.

Though it is linked to specific behavioral and psychosocial improvements, EAP may contribute more broadly to positive youth development because of its structure, potential for competition, and opportunity for social engagement with peers and mentors (Catalano & Hawkins, 1996). EAP provides an opportunity for prosocial bonding beyond interactions during the school day. It also offers opportunities for skills development, and success at competitive activities provides positive reinforcement for participation and strengthens the effect of bonding with peers and mentors on prosocial outcomes, all routes recommended by the SDM to prevent delinquency (Catalano & Hawkins, 1996).

School engagement during adolescence has been studied with respect to mental health, delinquency, and academics. Li and Lerner (2011) assessed changes in behavioral and emotional school engagement among 1,977 mostly white middle school students in the U.S. Using a semiparametric mixture model, they identified four distinct trajectories of both behavioral and emotional school engagement. In most groups, engagement decreased throughout middle school, but among some students behavioral engagement remained either moderately high or high. Higher household income and female gender were linked to higher or increasing engagement trajectories, and high or increasing engagement predicted higher grades and lower levels of delinquency, substance use, and depression (Li & Lerner, 2011).

However, research has not evaluated how EAP influences school engagement and outcomes related to positive youth development. School engagement and EAP are associated with short-term academic outcomes (Li & Lerner, 2011; Finn & Owings, 2006), but the mechanism of how EAP influence youth outcomes has not been studied. School engagement and EAP are separately associated with academic outcomes, but the relationship between EAP, engagement, and academic outcomes has not been studied. Because of changes in social and psychosocial factors throughout adolescence, it is important to understand how EAP interacts with student engagement and other indicators of positive development in youth.

Mediation of the Effect of EAP

While EAP has been linked to markers of positive youth development and to school engagement, mediation of its effect on long-term outcomes has not been studied. Understanding the mechanism of the effect of specific after-school activities can contribute to program planning, design, and funding. For example, if school engagement mediates the relationship between EAP and academic outcomes, then schools aiming to improve educational attainment should consider that even activities without curricular content may improve student engagement with school and eventually long-term academic outcomes.

EAP is associated with improved graduation rates. An analysis of a national dataset reported that female high school athletes were more likely to graduate from college than non-athletes (Troutman & Dufur, 2007). Policy debate program participation in high school has been linked to increased likelihood of high school graduation regardless of academic risk and SES (Anderson & Mezuk, 2012). EAP has also been shown to prevent early school dropout (before 11th grade) among at-risk students (Mahoney & Cairns, 1997).

EAP is also associated with reduced likelihood of arrest. Students who participate in extracurricular activities are less likely to be arrested as adults (Mahoney, 2000). Farb and Matjasko (2012) conducted a review of literature investigating the effects of EAP, and they included arrest in their definition of delinquency. They reported that the majority of studies of EAP and delinquency found that EAP was associated with lower levels of delinquency (Farb & Matjasko, 2012).

School engagement, a potential mediator of the relationship between EAP and long-term PYD outcomes, has been linked to EAP. A study of 11th grade students reported that participation in clubs and sports was associated with improved school engagement (Fredricks & Eccles, 2006). Among 6th to 9th grade black adolescents, EAP was also associated with higher school self-efficacy and school engagement (Dotterer, McHale, & Crouter, 2007). School engagement has been linked to longer-term academic outcomes, such as high school graduation and college attendance (Finn & Owings, 2006). Given the associations between EAP and graduation and arrest rates, as well as established relationships between EAP and school engagement, it is important to investigate school engagement as a potential mediator in the relationship of EAP and these important long term educational and social outcomes.

Moderation of the Effect of EAP

Research suggests that the effects of EAP vary by gender, race/ethnicity, and SES. However, results of studies investigating moderation often vary based on type of EAP activity. For example, a study investigating participation in school athletics reported significantly higher

grades among female athletes, and significantly lower grades among male athletes (Miller, Melnick, Barnes, Farrell, & Sabo, 2005). In a nationally representative sample, among minority students, fine arts EAP in 10th grade was associated with increased income ten years later (Lleras, 2008). In a study of social identity among 8th-11th grade students, black students and female students who identified as “jocks” reported lower grades than those who did not (Miller et al., 2005). Overall, investigations of how race/ethnicity and gender may moderate EAP are limited (Farb & Matjasko, 2012), and given the inconsistent results, research should investigate how effects vary based on demographic variables.

Students considered at-risk for low educational attainment may benefit differentially from interventions designed to improve youth outcomes. Evaluations of behavior-change programs report greater effects among students considered at risk; outcomes included pregnancy, school failure, and aggressive behaviors (Allen & Philliber, 2001; Wilson, Lipsey, & Derzon, 2003). Because of the potential for different effects among youth with low SES or low academic performance, research should consider moderation of program effects by risk level.

While research overall demonstrates positive academic, social, and psychosocial effects from EAP, more research is needed to investigate for whom and how these effects are achieved. Because of educational disparities based on race/ethnicity and SES in the U.S., it is particularly important to identify any differential effects of EAP on students who are at greater risk for dropping out of high school, and to understand the mechanism by which EAP affects youth development.

Dimensions of EAP

EAP characteristics and level of involvement may impact positive youth development. While many studies dichotomize EAP at a single time point, others quantify intensity and breadth of participation, both of which tend to be associated with improved academic and psychosocial outcomes (Denault & Poulin, 2009; Randall & Bohnert, 2009). *Intensity* represents the amount of time a student spends on a particular activity, and *breadth* refers to participation

in different types of activities (Farb & Matjasko, 2012). Mediation of how dimensions of EAP impact youth development has not been studied, and it is important to program design to know whether and how dimensions of EAP impact short- and long-term outcomes. For example, if greater participation (intensity) is associated with improved school engagement short-term, and improved educational attainment long-term, then funding and EAP planning can prioritize opportunities for increased EAP intensity.

EAP Dimensions and Mediation

Dimensions of EAP have been linked to improved academic outcomes, in a similar fashion to EAP overall. Competitive success, duration, and participation intensity have been linked to academic outcomes including high school graduation, GPA, and ACT scores (Gardner et al., 2008; Anderson & Mezuk, 2012; Denault, Poulin, & Pederson, 2009).

Potential mediators of the effect of EAP dimensions on academic outcomes include improved school, civic, and social engagement. Intensity has been linked to improved civic engagement and educational expectations (Denault & Poulin, 2009). EAP overall has been linked to school, civic, and social engagement (Fredricks & Eccles, 2006; Fredricks & Eccles, 2008). Because the SDM states that aspects of EAP such as structured, goal-oriented group activity involvement improve social engagement (Huang et al., 2001), it is logical that more involvement (e.g., intensity and duration) would also improve social engagement.

Finally, as discussed above, school engagement and social engagement are associated with academic outcomes, such as high school graduation and college attendance (Finn & Owings, 2006; Eccles et al., 2003).

Present study

The overall goal of this study is to describe for whom and how EAP affects positive youth development, using qualitative and quantitative analyses nationally and in two U.S. cities. Outcomes include high school graduation/dropout and arrests after age 18. Potential mediators include school, civic, and social engagement. Analyses adjusted for individual, family, and

school factors. This study used a large, nationally representative dataset, qualitative data from participants attending an after-school community center in New Orleans, and data from Chicago Public Schools students participating in a structured co-curricular activity to identify the effects of EAP, characteristics of effective EAP, and opportunities to foster positive youth development. Qualitative analyses investigated how EAP and community resources impact school and social engagement and community violence among youth.

RESEARCH QUESTIONS

This paper aims to provide data on factors that contribute to positive youth development using separate quantitative and qualitative analyses investigating the effects of after-school programs on at-risk adolescents nationally and in two urban U.S. cities. The first study is a quantitative analysis using the National Longitudinal Survey of Adolescent Health to determine the effect of participation in after-school activities on academic outcomes and involvement with the criminal justice system. Specific research questions include: *1) Does school engagement in a large sample of adolescents vary by demographic characteristics? 2) Is EAP at Wave 1 associated with school engagement between Waves 1 and 2? 3) How do EAP and school engagement influence likelihood of high school graduation or arrest after age 18? 4) Does this relationship vary by demographic characteristics?* The main hypotheses are: EAP will be associated with high and increasing school engagement, increased high school graduation rates, and reduced likelihood of arrest; and students with higher SES and lower academic risk will have greater school engagement.

The second study used qualitative methods to identify elements of community programming in a high-crime New Orleans neighborhood that influence youth development and outcomes. Interviews with youth participants in the APEX Youth Center aimed to identify antecedents of youth involvement in violent crime, and how after-school programs like the APEX Youth Center can address these factors. Specific research questions include: *1) What are the effects of attending APEX and its presence in the neighborhood on neighborhood safety,*

positive youth development, and involvement in violence among youth? 2) Which components of APEX's programming contribute to youth engagement and positive youth development? 3) How do youth perceive violent crime and its antecedents? 4) What are opportunities for violence prevention and positive youth development among adolescents and young adults who attend APEX?

The third study is a quantitative analysis of a large dataset from Chicago Public Schools from 1997-2007 containing information about student participants in Chicago's UDL. Specific research questions include: *1) Do social engagement, school engagement, or civic engagement mediate the effect of UDL participation on academic outcomes? 2) Do these factors mediate the relationship between UDL participation intensity, duration, or competitive success on academic outcomes? 3) Do these relationships vary by demographic characteristics?* The hypotheses are that the effect of UDL participation overall on academic outcomes is mediated by improved school, social, and civic engagement, and similarly, that increased debate participation and success will be associated with increased likelihood of graduation and higher ACT scores, via increased levels of engagement.

Study 1: Longitudinal analysis using the National Longitudinal Survey of Adolescent Health

The first study is a quantitative analysis using the National Longitudinal Survey of Adolescent Health to determine the effect of participation in after-school activities on academic outcomes and involvement with the criminal justice system. Specific research questions include: *1) Does school engagement in a large sample of adolescents vary by demographic characteristics? 2) Is EAP at Wave 1 associated with school engagement between Waves 1 and 2? 3) How do EAP and school engagement influence likelihood of high school graduation or arrest after age 18? 4) Does this relationship vary by demographic characteristics?* The

social development model suggests that the structured activities and social interactions characteristics of EAP improve students' engagement with school and increase likelihood of positive outcomes (Catalano & Hawkins, 1996). The main hypotheses are: EAP will be associated with high and increasing school engagement, increased high school graduation rates, and reduced likelihood of arrest; high-risk students who participate in extracurricular activities will be more likely to have greater school engagement; and students with higher SES and lower academic risk will have greater school engagement.

METHODS: Study 1

Dataset description

Data were obtained from the National Longitudinal Study of Adolescent Health (Add Health) (Harris et al., 2009). Add Health is a prospective cohort study of a nationally representative sample of youth enrolled in grades 7-12 in the 1994-95 school year (Wave 1). Add Health used a multistage probability sampling design to obtain its Wave I sample. The first stage was a stratified, random sample of all public and private high schools in the U.S. In-school surveys were attempted with all students. In the second stage of Wave 1, a sample of adolescents was drawn for in-depth in-home interviews, consisting of a core sample plus selected oversamples. 20,745 students completed interviews at Wave 1 (79% of eligible students). A parent or primary caretaker of Wave 1 in-home interview participants was also interviewed. Most persons who completed Wave 1 in-home interviews were eligible to participate at Wave 2 in 1996 (exclusion criteria were Wave I seniors and persons in the genetic subsample). Almost 15,000 participants were re-interviewed at Wave 2 (88% of eligible). In 2001, a Wave 3 interview was conducted with 15,197 participants from the original Wave I in-home sample (76% of eligible). When weights are applied, the Wave 3 sample is representative of the same base population as the Wave 1 sample. Wave 4 took place in 2008-09 when participants were between the ages of 24 and 32. It consisted of in-home interviews with 15,701 participants (80.3% of eligible) (Harris et al., 2009).

This study aimed to identify the relationships between school engagement, EAP, and outcomes including arrests since age 18 and high school graduation. Figure 1 illustrates the hypothesized relationships between these factors.

Independent variable

Extracurricular Activity Participation (EAP): EAP was assessed at Wave 1, and it includes student participation in a team sport, an academic club or organization, or a musical group (band, choir, orchestra) in the current school year. EAP was assessed overall using a dichotomous variable, in which 0 indicated no participation during the current school year, and 1 indicated participation in any extracurricular activity.

Respondents were asked whether they were currently participating in or were planning to participate in each activity during the current school year. Activities were divided into three groups: academics, athletics, and fine arts. Academic EAP included activities such as debating and language clubs; athletics included team sports; and fine arts EAP included choir, orchestra, other music ensembles, and art club.

Mediator

School engagement: School engagement was assessed using the School Connectedness Scale (SCS), which is the sum of five items from the Add Health questionnaire (Furlong, O'Brennan, & You, 2011). The SCS has demonstrated reliability of $\alpha = 0.82-0.88$ and validity of $r = 0.44-0.55$ across 18 sociocultural groups. Factor analysis indicated that these five items load well onto one component (Furlong et al., 2011). School connectedness scales were created for Waves 1 and 2 based on student responses to the following statements. Responses to the following statements indicated level of agreement using a 5-point Likert scale:

- I feel close to people at school.
- I feel like I am a part of my school.
- I am happy to be at my school.
- The teachers at school treat students fairly.

- I feel safe at my school

Models were tested using change in school engagement between Waves 1 and 2 and using school engagement scales from both Wave 1 and Wave 2.

Moderators

Demographic variables: Analyses were adjusted for respondent self-reported race/ethnicity, gender, and parental educational attainment, all measured at Wave 1. Parental educational attainment was used to indicate family SES because of the strong association between parental educational attainment and child outcomes (Dubow, Boxer, & Heusmann, 2009). It was assessed using the respondent's report of highest level of education completed by each parent.

Race/ethnicity: Four categories of race/ethnicity were used: black, white, Latino, and other race/ethnicity. If a student identified as Hispanic/Latino, they were considered Latino in these analyses. If they did not identify as Hispanic/Latino, they were considered black, white, or other race/ethnicity.

Parental educational attainment: This was assessed based on student report of the highest level of education completed by each parent, or by the person with whom they live who functions as their parent. This variable was coded as 1 if at least one parental figure had completed high school or beyond; it was coded as 0 if neither parental figure had received a high school diploma. GED's were not considered equivalent to high school diplomas because of the additional benefits associated with a high school diploma versus GED's or other equivalency diplomas (Heckman & LaFontaine, 2010).

Academic risk: Using Wave 1 data, an academic risk index (range: 0-3) was created using the following three items: whether the student had ever repeated a grade in school; whether they had ever received an out-of-school suspension; and whether they had ever been expelled from school. Endorsement of each experience was coded as 1 and summed to create an academic risk score in which a higher score indicated greater risk.

Neighborhood environment: Using Wave 1 data, a neighborhood environment index (range: 0-4) was created using the following four items: responding “yes” to “people look out for each other in my neighborhood”; responding “yes” to “I usually feel safe in my neighborhood”; reporting liking their neighborhood “quite a bit” or “very much”; and reporting that they would be unhappy or a little unhappy if they had to move out of their neighborhood. Items were summed to create a neighborhood environment score in which higher scores indicated a more positive neighborhood environment.

Outcomes

1. High school graduation: High school graduation was assessed at Waves 3 and 4, after all students had the opportunity to graduate from high school in four years, using responses to the question, “What is your high school graduation status?” Receiving a high school diploma was coded as 1, and other outcomes (did not finish high school, received a GED) were coded as 0. Respondents with no outcome by were listed as missing.
2. Arrests: Arrests since age 18 were assessed using self-reported data from Wave 4. If the participant responded “yes” to the question, “Have you ever been arrested?” and later indicated having been at least 18 when one or more arrest occurred, this response was coded as 1; a code of 0 indicated that no arrests occurred after the participant was 18.

Analyses

N = 20,745 at Wave 1, and at Wave 2 N = 14,738. Analyses were limited to students with sample weights who were in high school in Wave 1, had answered questions about EAP in Wave 1, had a high school graduation status listed in Wave 3 or 4, and had answered questions about arrests in Wave 4. All analyses were conducted using Add Health grand sample weights. Descriptive characteristics were calculated for the sample (Table 1).

Research question 1: The first analysis described school engagement during high school and whether school engagement varied by demographic characteristics and academic risk.

Univariate analyses were conducted on change in school engagement and on engagement at Waves 1 and 2. T-tests and chi-square tests were used to assess the relationship between demographic variables and academic risk with school engagement.

Research question 2: Linear regression was used to assess the relationship between EAP at Wave 1 (overall and by type of activity) and school engagement in Waves 1 and 2, and whether this relationship varies by demographic variables, using interaction terms.

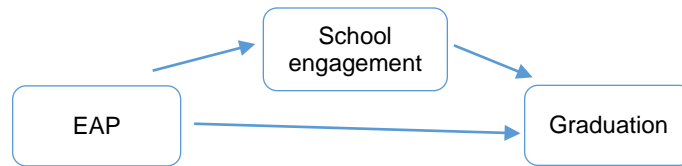
Research question 3: Logistic regression was used to assess the association between school engagement (Waves 1 and 2), EAP (Wave 1), and two outcomes, high school graduation and arrests after age 18 (Wave 4). School engagement was tested as a mediator of the relationship between EAP and the outcomes.

This analysis tested two separate mediation models. One model tested whether school engagement mediated the relationship between EAP and high school graduation, and the other model tested whether school engagement mediated the relationship between EAP and arrests since age 18. This analysis tested for associations between the primary independent variable (EAP) and the potential mediator (school engagement), between the independent variable and the dependent variables (high school graduation and arrests), and between the mediator and the dependent variables. These criteria were tested using linear and logistic regression, adjusting for demographics, academic risk, and neighborhood environment (Table 4). The PROCESS macro (Hayes, 2013) was used to test whether these effects are different from zero, using 1,000 bootstrapped samples. All analyses were conducted using SAS 9.3.

As illustrated by Figure 2, the hypothesized model tested a direct effect between EAP and high school graduation, and an indirect effect in which EAP improves school engagement, which then increases likelihood of high school graduation. Bootstrapping, a procedure in which samples are repeatedly drawn from available data and the indirect effect estimated for each sample, was used to identify direct and indirect effects of EAP on the outcomes. Bootstrapping is recommended as a method to estimate mediation because it does not impose the assumption

of normality on sample data, and because its Type I error rates are lower than those of the Sobel test and the causal steps model (Preacher & Hayes, 2008).

Figure 2: Mediation of the effect of EAP on graduation from high school



RESULTS: Study 1

After limiting the sample to respondents with sample weights and data on high school graduation, arrests, and EAP, the sample contained 11,438 participants. Using sample weights, in this nationally representative sample of students in grades 7 through 12, approximately half were men and half women (48% vs. 52%). Most (87%) had at least one parent who had graduated from high school. The majority of the sample were white (68%); 16% were black, 10% Latino, and 6% another race/ethnicity (Asian-American, Alaskan Native, multiracial).

In the academic risk index, most students (65%) were in the lowest risk group, indicating that they had never repeated a grade, received an out-of-school suspension, or had been expelled from school. Twenty-five percent fell into next highest risk group, having answered yes to one of the academic risk questions. The third highest risk group included nine percent of the sample, and the highest risk group included one percent of the sample, indicating that they had repeated a grade, received an out-of-school suspension, and been expelled from school.

In the neighborhood environment index, most students reported a high level of satisfaction with their neighborhood at Wave 1; 69% of respondents were in the two highest neighborhood environment groups. Membership in each group decreased as neighborhood environment score decreased, with only four percent of respondents in the lowest neighborhood environment group.

School engagement

School engagement was measured using the five-item School Connectedness Scale (SCS) (Furlong et al., 2011), which summed measures of student psychological connectedness to school. Total scores ranged from 5 to 25. Overall, school engagement decreased from Wave 1 and Wave 2; average engagement was 18.7 (SE=0.09) at Wave 1 and 18.6 (SE=0.10) at Wave 2. Among students with engagement scores in both waves, engagement decreased significantly by -0.25 (SE=0.07); this greater change resulted from a slightly higher average engagement (18.8) among students with engagement scores for both waves of data collection. Average engagement scores in this sample represent moderate school engagement. A score of 15 indicates neutral responses (neither agreeing nor disagreeing) to the five engagement questions; a score of 20 indicates agreement to the engagement statements (e.g., feeling safe at school, being happy at school, feeling like a part of school). A score of 25 would indicate strong agreement with all five engagement statements.

Change in engagement from Wave 1 to Wave 2 was tested using a paired t-test. Engagement decreased significantly from Wave 1 to Wave 2 ($p < .001$), but this decrease was not associated with EAP, the moderators, or the outcomes. Because the change in engagement was not associated with EAP or the outcomes, and because of the greater number of participants in Wave 1, regression models used school engagement from Wave 1.

T-tests and ANOVA tests were used to assess the relationship between engagement at Waves 1 and 2 and demographic characteristics, EAP, and the outcomes. Engagement at both Waves 1 and 2 varied significantly based on academic risk, socioeconomic status (measured by parental educational attainment), extracurricular activity participation (EAP), and neighborhood environment (Table 1). At both waves, engagement was significantly higher among students with at least one parent who graduated from high school ($p < .001$). Engagement decreased as academic risk increased ($p < .001$), and increased as neighborhood environment score increased ($p < .001$). Engagement did not vary significantly by race/ethnicity or by gender. Change in

school engagement between Waves 1 and 2 did not vary based on demographic characteristics or EAP.

EAP (extracurricular activity participation)

Most students (78%) reported EAP at Wave 1. Athletic participation was the most common form of EAP (57%), followed by academic EAP (38%) and art EAP (23%). Overall, EAP varied significantly by academic risk group, gender, SES (parental educational attainment), neighborhood environment, and race/ethnicity (Table 1). Students more likely to report EAP included women ($p < .01$), students with at least one parent who graduated from high school ($p < .001$), students with a low academic risk score ($p < .001$), and students with higher neighborhood environment scores ($p < .001$). Latino students were less likely to report EAP than students in other racial/ethnic groups ($p < .001$).

Analyses by type of EAP were similar to participation in any EAP. Higher SES was significantly related to participation in academic, athletic, and fine arts activities ($p < .001$). Higher neighborhood satisfaction was significantly related to athletic and fine arts activities ($p < .001$), but not to academic activities. Latino students were less likely to participate in athletic and fine arts activities ($p < .001$), Male students were more likely to report athletic activities ($p < .001$), while female students were more likely to report academic and fine arts activities ($p < .001$). All activity types were significantly related to academic risk, with likelihood of EAP decreasing as risk increased ($p < .001$).

EAP and school engagement

School engagement at Waves 1 and 2 was significantly higher among students with EAP at Wave 1 (Table 2; $p < .001$). This relationship did not vary based on type of activity; school engagement remained significantly higher among students participating in each type of after-school activity (fine arts, sports, academics) versus those with no EAP ($p < .001$).

Though school engagement at each wave was higher among students with EAP, school engagement did not change significantly from Wave 1 to Wave 2 based on EAP.

Outcomes: high school graduation and arrest after age 18

In the sample overall, 86.1% of students graduated from high school. Graduation rates did not differ based on gender. As academic risk increased, likelihood of graduating from high school decreased significantly ($p < .001$). Latino students were less likely than black students to graduate ($p < .05$). Neighborhood environment was not significantly related to high school graduation.

Overall, 27.2% of the sample reported having been arrested at least once since age 18. In the full model, women were less likely to report having been arrested ($p < .001$), and as academic risk increased, likelihood of arrest increased ($p < .001$). Neighborhood environment and race/ethnicity were not significantly related to likelihood of arrest.

EAP and student outcomes

EAP was significantly related to both arrests and high school graduation. Students who participated in extracurricular activities at Wave 1 were less likely to be arrested after age 18 (80.3% of students who were not arrested reported EAP vs. 72.4% of students who were arrested, $p < .001$). Students with EAP were more likely to graduate from high school than those with no EAP (81.4% of graduates reported EAP vs. 59.4% of non-graduates, $p < .001$).

Moderation of the relationship between EAP and the outcomes was tested using interaction terms in regression analyses, and it did not vary based on demographic characteristics, and it remained significant in a multi-variable logistic regression model. In the final model predicting high school graduation, students who reported EAP at Wave 1 were nearly twice as likely to graduate than those who did not ($OR = 1.97$, $p < .001$).

This criterion was also satisfied in the model predicting arrests; the independent variable was significantly related to the dependent variable. Students with EAP at Wave 1 were less likely to report being arrested by Wave 4 than those without EAP ($OR = 0.80$, $p < .01$), after adjustments for demographic variables.

School engagement and student outcomes

There was also a significant association between the hypothesized mediator, school engagement, and the outcomes. Students who reported higher levels of school engagement were more likely to graduate from high school ($p < .001$), and less likely to be arrested after age 18 ($p < .001$).

Mediation of the relationship between EAP and high school graduation

Table 4 describes the results of multi-variable logistic regression analysis. In Model 1, which included EAP and demographic characteristics but not school engagement, EAP was significantly related to high school graduation ($p < .001$). Students who participated in after-school activities were 2.1 times more likely to graduate from high school than those who did not.

Model 2 included EAP, demographic variables, and school engagement. Model fit improved after adding school engagement to the full model, and there was a reduction in the significance of EAP predicting high school graduation. Consistent with Baron and Kenny's mediation criteria (1986), the hypothesized mediator, school engagement, significantly predicted the outcome, high school graduation ($p < .001$).

Results of the bootstrapped mediation analysis further supported the hypothesis that EAP improves student outcomes via improved school engagement. While EAP remained significant in the final model, there was a significant indirect effect through school engagement (Table 5), consistent with criteria for partial mediation.

Mediation of the relationship between EAP and arrest after age 18

Model 1 results predicting arrest after age 18 were similar to results predicting graduation (Table 4). Students who participated in after-school activities at Wave I were less likely to be arrested than those who did not ($p < .01$).

When school engagement was added to the full model predicting arrest (Model 2), model fit improved. Unlike in the model predicting graduation, however, EAP no longer significantly predicted the outcome, arrest after age 18. Mediation analysis confirmed that only

the indirect effect was significant (Table 5); EAP's influence on arrests acted completely through increased school engagement.

DISCUSSION: Study 1

The primary findings from Study 1 are that 1) school engagement overall varies based on demographic characteristics, though the change in engagement over time does not; 2) school engagement is higher among students who participate in extracurricular activities, though it does not vary based on type of activity; and 3) school engagement partially mediates the association between EAP and high school graduation, and completely mediates the association between EAP and arrest after age 18.

School engagement decreased from Wave 1 to Wave 2, though this change did not vary based on the predictors, outcomes, or covariates. Previous research has also reported decreasing school engagement over time among adolescents (Li & Lerner, 2011; Janosz, Archambault, Morizot, & Pagani, 2008). School engagement varied based on demographic characteristics: engagement was higher among women, students with higher SES, students with low academic risk, students with greater neighborhood satisfaction, and students who were white or of "other" race/ethnicity. These associations confirm findings reported previously (Li & Lerner, 2011), and reinforce the importance of targeted efforts to improve engagement among students at greater risk for not finishing high school (students with low SES, students of color, and students with elevated academic risk).

Similarly, EAP varied based on demographic characteristics. Participation was higher among students with low academic risk, high SES, greater neighborhood satisfaction, and women. Rates of EAP were lower among Latino students. The association between demographic characteristics associated with EAP, higher school engagement, and adolescent outcomes suggest that EAP may represent an opportunity to improve student engagement with school and reduce educational disparities.

This study's findings support the hypothesis that EAP is associated with greater school engagement, suggesting that extracurricular or co-curricular programs may represent an opportunity to engage students at risk of not finishing high school. School engagement at Waves 1 and 2 was higher among students with EAP at Wave 1, and engagement was higher for each type of activity (fine arts, academic activity, and sports). School engagement was higher for students with EAP, but the change in engagement from Wave 1 to Wave 2 did not differ based on EAP.

Previous research has reported an association between school engagement and adolescent outcomes, and between EAP and adolescent outcomes, but mediation of this effect had not been studied prior to these analyses. In regression results analyzing the relationship between EAP, school engagement, and two outcomes (high school graduation and arrest after age 18), higher school engagement partially mediated the effect of EAP on graduation from high school. While EAP may not directly reinforce academic skills, it may increase a student's social and emotional connection with school, which can then lead to improved academic outcomes. The policy implications of these findings are that EAP may represent a cost-effective method to improve student engagement and educational outcomes.

In the full regression model predicting high school graduation, higher SES and lower academic risk predicted increased likelihood of graduating, but gender, race/ethnicity, and neighborhood satisfaction were not significant predictors. There were no significant interactions between EAP and school engagement and the demographic variables. While EAP increased likelihood of high school graduation for high-risk students, these students did not derive disproportionate benefit from participation.

Increased school engagement fully mediated the relationship between EAP and arrest after age 18. EAP may increase students' engagement with school, which could have reverberating effects on normative, non-delinquent behavior. This mediation relationship is

consistent with the social development model's statement that prosocial activities can prevent development of delinquent behavior (Catalano & Hawkins, 1996).

In the full model predicting arrest after age 18, women and students with low academic risk were less likely to report being arrested. Race/ethnicity, SES, and neighborhood satisfaction were not significantly related to likelihood of arrest after accounting for other factors, though race/ethnicity was significantly associated with arrest in bivariate analyses. These findings suggest that it is particularly important to ensure that young men who are becoming disconnected from school have opportunities for school engagement that do not rely exclusively on academic skills. If parental educational attainment is a stronger predictor of likelihood of arrest as a young adult than race/ethnicity, and EAP reduces risk of arrest, then school districts in low-SES areas should increase opportunities to improve students' social and emotional connection to school.

Strengths and Limitations

These findings should be interpreted in light of study limitations. The independent variable, EAP, was measured once at Wave 1, and it combines all participation into a single variable. However, when EAP was analyzed by type of activity (art/music, athletics, academic activity), results did not change, suggesting that measuring participation overall is appropriate for this analysis. Similarly, this study lacks details on intensity and duration of activity participation. Because school engagement was measured using two time points (Wave 1 and Wave 2), change in engagement during high school could not be assessed using trajectory analysis. However, although engagement decreased significantly within the entire sample between Waves 1 and 2, this change did not differ based on EAP or the covariates.

The ordering of variables in this theoretical model was informed by research reporting improved student engagement after EAP, and it relies on developmental processes described in the Social Development Model (Catalano & Hawkins, 1996). This study's analyses investigated the impact of EAP on change in school engagement over time, though EAP and the first

assessment of student engagement occurred at Wave 1. Self-selection into EAP, discussed below, could result in differences in school engagement that appear to be causal. However, the activity characteristics described by the SDM as important to positive youth development include purposeful group activity, positive socialization with peers and adults, and positive reinforcement from activity success, all factors which are characteristic of EAP. Longitudinal analyses in which engagement data were collected prior to EAP have demonstrated increased school engagement among students with EAP (Fredricks & Eccles, 2006). While students with greater school engagement may have self-selected into EAP, it is likely, based on the SDM, that EAP also increased engagement via the activities described above.

Though analyses adjusted for academic risk, SES (indicated by parental educational attainment), and neighborhood environment, there may be components of self-selection into EAP that were not fully addressed. Many schools require a minimum grade point average in order to participate in extracurricular activities, which limits opportunities for some students at risk for low educational attainment. While some researchers argue that these requirements unfairly exclude students with low grades (Burnett, 2000), others state that it serves as an incentive for students to improve their grades in order to participate. Future research should investigate the impact of grade requirements for EAP. Other student-level factors may lead to self-selection into activity participation. Without a randomized controlled experiment, it is impossible to completely assess the degree of this bias. However, adjusting analyses for school-level characteristics, such as those with limited extracurricular activities, could provide additional information on the effects of EAP on youth development.

While the difference in school engagement between students with and without EAP was statistically significant, this difference was minor (0.3 on a scale from 5 to 25). This represents less than one unit increase on the Likert scale of one item in the SCS. The question of clinical significance versus statistical significance has been addressed using effect size statistics in meta-analyses, Jacobson's and Truax's reliable change index (1991), and establishing a

minimally important difference with patients, which is often half of a standard deviation (Norman, Sloan, & Wyrwich, 2003). These techniques aim to identify an amount of meaningful clinical change in which a patient either recovers from the treated condition or reaches a clinically significant level of functioning. In a clinical setting, if data are available regarding normative and dysfunctional populations, a cutoff point can be established using means or standard deviations from these populations, instead of relying solely on statistical significance (Jacobson & Truax, 1991). In this study's analyses, there are no standardized criteria for a meaningful shift in school engagement. However, school engagement remained a significant predictor of both outcomes (high school graduation and arrest), suggesting that while EAP may not drastically modify a student's engagement with school, school engagement still serves as an important intermediate factor linking EAP with outcomes important to youth development.

In order to address the issue of "clinically significant" change in school engagement among adolescents, the scale could be collapsed into categories of school engagement. Finn (1993) grouped students into four engagement categories, in which academic achievement was greater among students in the highest engagement group. Future research could treat school engagement as an ordinal rather than a linear variable.

This is the only study to examine school engagement as a mediator of the effects of after-school activities on student outcomes. It is a large, nationally representative dataset with participant information over the course of 13 years. Study outcomes include multiple indicators of youth development, instead of relying solely on academic outcomes. While high school graduation is important to long-term earning potential and health and social outcomes, arrests in young adulthood provides an additional metric of achievement and are associated with a different range of social and health outcomes.

Study 2: Qualitative analysis of the effects of APEX Youth Center on PYD and community violence

This analysis sought to understand youth participants' opinions about the antecedents of community violence, particularly among youth, and opportunities for a community center to modify these factors. Specific research questions include: *What are the effects of attending APEX and its presence in the neighborhood on neighborhood safety, positive youth development, and involvement in violence among youth? Which components of APEX's programming contribute to youth engagement and positive youth development? How do youth perceive violent crime and its antecedents? What are opportunities for violence prevention and positive youth development among adolescents and young adults who attend APEX?*

METHODS: Study 2

The second study explored the mechanisms by which after-school programming impacts positive youth development, including involvement in violence and school and social engagement, via qualitative analyses of interviews with young men attending APEX Youth Center in New Orleans, LA.

New Orleans overall and the Broadmoor and Central City neighborhoods in particular are characterized by high rates of violent crime, low employment, and low high school graduation rates. In New Orleans in 2011, 59% of students in the Recovery School District graduated high school after four years (Educate Now!, 2013). Though Broadmoor and Central City together account for less than 5% of the city's population, more than 10% of the murders in Orleans Parish took place in these neighborhoods in 2012-2013 (Seal, Smith, Yancey, & Kumler, 2014).

APEX Youth Center is a community-based organization with structured and unstructured activities for children, adolescents, and young adults in Central City in New Orleans. In January 2014, APEX moved from its original location in Broadmoor to a new facility approximately two miles away in Central City. APEX is located in an area of the city with elevated crime rates, low

employment, and low graduation rates. Informal reports suggested that in both neighborhoods, the presence of APEX in that neighborhood contributed to a reduction in violent crime. APEX's programs include informal mentorship by program staff and youth volunteers, art classes, and tutoring to neighborhood youth.

Interviews assessed respondents' level of involvement with APEX and how they perceive APEX's effect, if any, on violence prevention and opportunities for youth. The interviews contained questions about effective elements of APEX's programming, and how it could better address youth needs. Respondents were asked about how APEX affects school and social engagement among participants. Youth were asked to describe violence in their neighborhood, their opinions about why it occurs, and how it could be prevented. Understanding how youth perceive violent crime and its antecedents can guide prevention efforts. Respondents were asked about opportunities for prevention in their neighborhoods, schools, and after-school community centers (such as APEX).

Procedure

One-on-one semi-structured in-depth interviews were conducted with six APEX participants from its original location and nine participants from its current location. These interviews allowed young people who attend APEX to explain their beliefs about the reasons for violent crime in their neighborhood, how and why APEX may affect violent crime, and general community needs related to violence prevention.

Though both young men and young women attend APEX, the majority of participants are young men, and they are at elevated risk for involvement in violent crime and for not finishing high school (Freudenberg & Ruglis, 2007). Because of this elevated risk, and because of the planned small sample size, female participants were excluded from participation. Young men who began attending APEX between ages 14-19 were recruited for participation.

Participants were recruited by APEX staff. Participants under 18 received parental consent and participant assent forms, and participants age 18 and older received consent

forms. Interviews were conducted by the author at APEX Youth Center in fall 2013 and spring 2014. Once the participant agreed to be interviewed, the author scheduled an interview at APEX. Interviews lasted between 30-60 minutes, though most were approximately 30 minutes long. Interviews were recorded and coded based on content using the audio recording.

Interview guide

The interview guide (Appendix) was developed in collaboration with experienced qualitative researchers in order to investigate participants' level of participation at APEX, neighborhood perceptions, opinions about the antecedents and effects of violent crime, and opportunities for violence prevention among youth.

Coding and analysis

Interviews were conducted and coded by the author using grounded theory analysis (Strauss & Corbin, 1994), based on themes that emerged from the interviews.

Grounded theory analysis involves construction of theory as qualitative data are coded. Transcripts are coded, organized into recurring concepts, and categorized (Martin & Yancey, 1986; Bernard & Ryan, 2009). The categorized concepts are then used to shape theory on the topic of the qualitative data. For example, in this project, the interviews focused on opportunities to facilitate and support youth development in a high-crime area of New Orleans. The responses were coded, categorized as in the examples below, and used to elaborate on how the Social Development Model functions within the framework of PYD.

The interview guide shaped development of the coding tree. Below are examples of questions of interest and major categories in the coding tree.

Question: What are the reasons that you come to APEX now?

Major categories: sports, tutoring, interaction with APEX staff

Question: What makes people do violent things to each other?

Major categories: money, retaliation

Question: What can programs like APEX do to reduce violence in the community?

Major categories: social engagement, leadership opportunities

RESULTS: Study 2

Fifteen young men were interviewed, nine from APEX's current location (Simon Bolivar) and six from its previous location (Broadmoor). Most interviews lasted approximately 30 minutes. Youth were asked about participation in APEX events, their opinions about APEX and about neighborhood violence, and their experiences at school and in their neighborhoods.

Reasons for attending APEX:

Relationships with other participants and APEX staff were important to initial and continuing attendance at the center. Socializing and recreation were primary reasons for continuing to attend.

Interviews began by asking participants to describe how they first learned about the center. Most reported being told about the center either by a friend or by Rev. Fitzpatrick or Mr. Fitzpatrick on the street:

I was sitting outside in the park, and Mr. D and Ms. Lisa walked up and spoke to me briefly. They were opening up a youth center for kids in the neighborhood, to help them stay out of trouble and get homework done, and have something to do instead of a lot of bad things. I talked to them, and it started, and we brought in a whole lot of people.

Participants who were approached by Rev. or Mr. Fitzpatrick on the street were offered "lemonade and AC," or video games and homework help. Several others were introduced to APEX by a friend: "My friend told me about it. He told me how they play games and how it's a place to chill. Instead of being in the streets, just a place to chill."

Initially, participants attended APEX for homework help/tutoring, being a mentor to the younger participants, or playing sports or games. When asked why they continued to attend APEX, several participants cited the same reasons, such as homework help and playing games, but several also mentioned leadership opportunities or community service:

I feel like, my mom always talking about me being different and me giving back to the community. So when they mentioned we could do community service and help out, I feel like that's something positive, and that makes my mom proud. And I could tell people that I did something positive. And soon we could start feeding people or building houses, that's positive, that's giving back to the earth, basically.

Participants were also asked why other people attend APEX. Some answers did not change (playing games or basketball), but several participants discussed how APEX is a safe space for young people to “stay off the streets.” One individual stated, “Some of them I think try to stay out of trouble so they come here because they feel it's much safer.”

Activities:

Program elements that contributed to PYD included fair, clearly communicated rules; relationships between participants and program staff; APEX as a safe space that separated participants from nearby violence; and opportunities for leadership within the program.

Youth responded positively when asked about their activities at APEX, describing sports and games rather than structured activities. Most participants mentioned video games, shooting pool, and basketball. One participant discussed helping out the staff as a regular activity: “I helped them, monitoring everybody when they was shooting pool, stopping kids from fighting, if one disliked the other. Just helping them do the right thing.” When asked about their favorite activities, most participants mentioned basketball or video games, and several discussed playing basketball with the other participants as important to why they attend APEX: “It was always different people. It gets boring playing with the same people. So when new people come it gets interesting, it gets competitive.”

Youth investment in program structure:

Since many youth participants valued APEX as a safe space, maintaining participant support for rules in this space is important to its functioning in general, and also more specifically to youth engagement in APEX's community.

Most youth participants were familiar with the rules at APEX, and most were satisfied with fairness of the rules and rule enforcement. Complaints were limited to rules prohibiting outside food or restricting hours for younger participants. Others reported being happy with the rule that backpacks be left at the door: "I like how they take your big bags, because there's a lot of danger around here and they're just trying to keep people safe." Even a participant who stated that he did not like having any rules reported being happy with those at APEX: "They really don't want no fussing, no fighting or drugs. That's nice, you know? They don't tell you you gotta go sit here or go sit there. They let us be free." Another reported disliking "all the cussing, all the fighting" at APEX, suggesting that rule enforcement and compliance were not perfect.

When asked about rule enforcement, participants mentioned Rev. Fitzpatrick's willingness to give youth second chances, and none complained or described rules as unfair. "Ms. Lisa going to give you a million chances, so it's like you never really get put out unless you asking to get put out." Another participant mentioned the effectiveness of rule enforcement:

Most of the time, they're gonna make them go just chill out. She gonna tell what they did wrong, how someone else could get hurt from it. If it's something bad, she'll tell them you can't come back to the center til 2 days. They gotta get their mind right. They'll go be mad for 2 days. And they'll listen next time.

Only two youth who were interviewed mentioned attending college as their next step after high school. The majority hoped to play sports professionally.

Social engagement:

Most youth participants reported that regular attendance at APEX was the norm: "A lot of people come every day. They like to play, joke around, horseplay. They still come every day, even though they be fussing they'll come the next day and be friends again. That's good though." Maintaining a consistent group of youth participants allows for development of peer relationships within the broader context of PYD.

Several youth participants described the young people who attend APEX as different from their friends elsewhere or at school: “[People here] are different. They act more mature and know how to behave. They’re not into violence. They don’t want to sit around and wait. They want to do something and be active.” Others stressed the importance of staying out of trouble: “My friends are cool people, they do their homework. They’re similar. I’m not too big on drugs and gangs and violence.”

Many participants discussed how youth who attend APEX work to get along with one another. “We usually fuss, but we still go on with the game, just tell each other we brothers and stuff and we don’t need to be fighting.” “We have certain situations where they’re about to get in a fight, but we all understand that we’re all gonna be here tomorrow.” Getting to know other young people was described as a benefit of attending APEX:

That’s another thing that APEX has done, has helped me really connect with other people. Like at first I stayed to myself, but now I’m a more open person. I can have a conversation with somebody. At first I just stayed to myself, just quiet and probably in the corner, on the phone or something like that.

Another participant said that APEX “made me meet my community more.”

Some described conflicts at APEX as brought on by new participants who do not understand how young people interact at the center: “People from somewhere else bring the drama. They didn’t know how things are, that we’re one family.” Still others believed that conflicts at APEX were more likely among family members or friends: “The crazy thing, people who fight, it’s always people who know each other. Like a brother and a sister.”

Mentoring:

Participants were complimentary of Rev. and Mr. Fitzpatrick and their dedication to young people and to the neighborhood. Many youth participants described Rev. Fitzpatrick or Mr. Fitzpatrick as mentors or “like another parent” and discussed their willingness to help out youth at APEX.

- “Ms. Lisa, if you didn’t have somewhere to stay one night, you could always go by Ms. Lisa house. Her house was always open no matter what time you go. So Ms. Lisa and Mr. Danny, they take it to another level – ‘what you need? Y’all got it.’”
- “They would always tell me things about what was right and wrong, about my personal life and all that.”
- “They helped me do stuff in the right way and be focused, they helped me position myself in the right place so that I know what I’m doing interacting with the kids.”
- “My high school years, they helped me. Ms. Lisa, she always wanted to see me go to college and play ball. So she always did everything she could. She always helped me with tutoring, anything I needed.”
- “They don’t try to be like your mom or your dad, they’re more like your friend or mentor. They’re real good people. They’re not doing it for them, but they’re doing it for us.”
- “Beautiful relationships. I’d say my favorite person of all is Mr. D. He’s like a father figure, but he don’t try to be your dad. He’s like a mentor. I’d say he’s my favorite. He shows me what it takes to run this place. What could come out good and what could come out bad. He just keeps everything together.”

Leadership opportunities and APEX as a safe space:

Other important aspects of APEX’s effectiveness included opportunities for leadership and safety at the facility. Several participants mentioned leadership opportunities at APEX as their favorite part about the center. “My main focus was to be a leader. They helped me do stuff in the right way and be focused, they helped me position myself in the right place so that I know what I’m doing interacting with the kids.” Leadership was discussed as important individually and as something that participants valued seeing in their peers.

Several participants mentioned safety, or having a place to stay out of trouble, as another important part of APEX’s effectiveness. One youth participant stated that [APEX is]

“one of the safest places to be.” Others mentioned how participants attended APEX both to stay safe from neighborhood violence and to avoid becoming involved in violence themselves: “Some of them I think try to stay out of trouble so they come here because they feel it’s much safer.”

Neighborhoods:

Some youth participants lived in the same neighborhood as APEX, but several split time between different houses in different parts of the city and did not consider APEX’s neighborhood their own. When asked to describe their neighborhood, some stated only positive aspects of where they lived, while others described their block or part of the city as separate from nearby violence. “Broadmoor, it’s surrounded by violence, you’ll see shootings here, killings here, and it’s Broadmoor in the middle. It’s the nice area in the middle.” Several described their neighborhood as “not that bad, compared to the rest of New Orleans.” Conversely, others mentioned violence immediately when asked to describe their neighborhood: “It’s kind of a rowdy, like they shoot from time to time”; “it’s dangerous and they have shootings”; “it’s dangerous just like any other neighborhood can be dangerous.”

Several youth described APEX as the only good thing about the neighborhood: “The only thing I liked was the center [APEX]. That’s the only place we had to go.”

Violence:

When asked to discuss whether violence is a problem in their neighborhood, the majority of youth who were interviewed mentioned shootings or murders, though several others stated that violence was not a problem. One participant described violence as:

A problem but not a problem. If it wasn’t for violence or drugs or anything, this world wouldn’t be running. Without the chaos and all that, this world would not be going around. I’d say we need that, not as much as we got out here, but we need it but to show people get what you need and get out. Do what you got to do. Especially for the

young people, if you want to pursue basketball, pursue it! Don't let nothing distract you.

Violence will come to you quick, you don't even gotta be looking for it.

Participants cited drugs, retaliation/feuds, and gangs as reasons for neighborhood violence. Several youth described feelings of helplessness or of having no other option: "some of the people grew up on this, all they know is hustling, selling drugs and getting money." Other youth mentioned money or having uninvolved parents as reasons for violence.

School safety:

Though most youth participants described their school as safe, others described a pattern of violence similar to that in their neighborhood. When asked to discuss safety in school, several rated it on a scale of 1 to 10, giving their school an 8 or a 9 because "we had a lot of security guards, and cameras. Everybody felt safe." Participants either described schools as safe because of security measures ("when you first walk in they gotta scan you for metal objects") or because they personally had no conflicts with anyone else: "I feel safe because I don't gotta worry about nobody. I don't do nothing to nobody, nobody does nothing to me. Only the ones that don't deal with gangs and drugs [feel safe]." Another participant who attended high school outside of New Orleans stated that he felt safe because other students were afraid of him because he was from New Orleans:

Oh my high school was bad. I dropped out when I was 16, so my high school was bad.

Not very safe at all, probably a fight every day. But I felt very safe. You from New Orleans, so people were already scared. They don't like New Orleans. They think we got voodoo, or we just straight killers. So I lived with the image.

Reducing neighborhood violence:

When asked about reducing violence, several youth participants offered specific recommendations for change while others described the problem as too endemic to be easily changed:

I can't even answer that question. The violence, it's a circle. Who knows where anybody's beef started at. It could've started in high school. Somebody had a fight and left school. His people going shoot they people. Now what. You just got a chain reaction, you just got a back and forth thing. So many of your friends dying, so many of his friends dying, it's just a chain, it don't ever stop. I wouldn't be surprised if they came to the conclusion that every crime this year started from one person. It's not just one cycle. If you stop this one, there's another one going on. That's neighborhoods. That's too many cycles to stop. Some people, they don't care about going to jail.

When asked about police presence in the neighborhood, youth offered opposing ideas about the potential for police to impact the problem. Some suggested that more cameras or monitoring was needed, while others stated that the police were ineffective or exacerbated the problem. Suggestions included more cameras, police "checking people that look suspicious," and increasing patrolling by police. One participant suggested that arguments be resolved by fighting rather than with guns, while another recommended smoking marijuana to calm down. Others were pessimistic about the ability of the police to impact violence, stating that "the police don't ever catch the person," "the police half the problem," they are not respected, or they "don't do their job."

Several youth stated that community or youth centers could prevent violence, and that opening more centers would improve neighborhood safety. When asked specifically how APEX or a similar organization could prevent violence, most participants referred to how APEX provides a safe space for youth, and others mentioned its effect on the community: "[APEX] shows it can be different. It shows you can beat the neighborhood. They're good role models. The people they bring in are better role models. They show you that you can do this, you really can."

DISCUSSION: Study 2

Overall, this study's results indicate that participants consider the APEX Youth Center a valuable resource for youth in Central City. Key themes in the interviews include APEX as a safe space for young people in the area, leadership opportunities for youth at APEX, positive peer relationships with other participants, and close relationships with APEX staff. Many believed that APEX improved neighborhood safety, though others suggested that violence was too endemic to be changed easily. All provided positive feedback about the facility, staff, and rules; the only complaints were minor issues with rules about outside food in the facility.

APEX's space, rules, and staffing support positive socialization among participants. Creating a safe space where youth felt separate from neighborhood violence satisfies the fundamental need for safety (Maslow, 1943), allowing participants to develop peer and mentor relationships. Consistent with the SDM, participants reported bonding with staff and other youth, which develops social skills and contributes to the healthy beliefs and behaviors important to PYD (Catalano & Hawkins, 1996).

Perceptions of violence, its antecedents, and violence prevention varied among youth who were interviewed. Some suggested normative solutions within the criminal justice system, while others expressed cynicism and the belief that violence was too ingrained in culture and society to be prevented. However, the majority of respondents cited APEX as an opportunity for interrupting cycles of violence. Even young men with negative views of the police expressed the belief that APEX could reduce neighborhood violence. Replicable elements of APEX's programming include a stated and frequently reiterated investment in the community, positive relationships with neighborhood youth and community members in general, and careful explanations of organizational rules. These findings should galvanize violence prevention efforts among organizations and police departments interested in community outreach.

Though perceptions of the prevalence of neighborhood violence varied, a consistent theme in youth interviews was the normalization of violence. Many respondents described

violence that occurred in their schools, but then still rated them as relatively safe. Similarly, most respondents stated that violence was a problem elsewhere in the city, but not in their own neighborhoods, though they also described nearby violent crime. High levels of exposure to violence normalize it (Ng-Mak, Salzinger, Feldman, & Stueve, 2002), and may perpetuate the cycles described in the interviews in this study. Techniques used at APEX to combat the effects of proximity to violent crime include modeling and discussion of nonviolent conflict resolution. Some respondents stated the importance of meeting volunteers from different parts of the country. Exposure to other cultures or geographic areas with lower rates of violent crime could combat the normalization of violence in Central City.

Finally, youth described leadership opportunities at APEX as important to engagement with the program overall and to social engagement with other participants. Similar organizations should aim to provide opportunities for youth involvement in program planning or management, whether supervising younger participants, or youth contributions to center rules.

Strengths and limitations

Youth participants who completed interviews tended to attend APEX regularly, rather than intermittently. This greater level of participation may have biased qualitative results. Despite extensive recruitment efforts, a total of fifteen participants completed interviews. Several factors may have impacted recruitment of current and previous program participants. Obstacles to recruitment included difficulty obtaining signed consent forms from participants younger than 18, inaccurate contact information for current and previous participants, and low incentive value for younger participants.

Several factors limited recruitment for participation in interviews. The age range targeted in this evaluation project is 14-19, which was defined as the age at which the participant *began* attending APEX Youth Center. If participants responded positively to initial recruitment efforts, older youth who were able to sign their own consent forms could be interviewed immediately. Participants under 18, even if they were interested in being

interviewed, tended to lose the consent forms that were sent home. Successful interviews of younger participants usually occurred after sending home 4-5 copies of the consent form.

Average age of participants differed at the two locations; many Simon Bolivar participants were too young to be interviewed. Broadmoor youth, particularly those still in touch with APEX staff, tended to be older teenagers. However, at the current location on Simon Bolivar, most youth are ages 12-15; many regular participants were too young to participate in the evaluation. Additionally, the incentive (\$10 Walmart gift card) did not appear to provide motivation for younger participants to complete interviews. Older participants were much more interested in the incentive. Finally, youth attend APEX in order to play games or sports, and many younger participants did not want to stop playing a game in order to be interviewed.

Generalizability of results of Study 2 may be limited. It focuses on a small sample of young black men in New Orleans, and its results may not be generalizable to a larger population between of the sample's homogeneity. However, understanding ways in which community groups, schools, and community members can support young black men is important to understanding risk and protective factors for young people in a high-crime area of New Orleans. Given the persistence of disparities in graduation rates, employment, and involvement with the criminal justice system, it is particularly important to provide information on opportunities to support positive youth development in high-crime urban areas.

Study 3: Longitudinal analysis of the mechanism of the effect of participation in an urban debate league on educational outcomes

This analysis aims to evaluate whether indicators of positive youth development (i.e., student-teacher trust, educational expectations, social competence, school engagement) mediate of the association between participation in an Urban Debate League (UDL) with high school completion. Specific research questions include: *1) Do social engagement, school engagement, or civic engagement mediate the effect of UDL participation on academic*

outcomes? 2) Do these factors mediate the relationship between UDL participation intensity, duration, or competitive success on academic outcomes? 3) Do these relationships vary by demographic characteristics? The hypotheses are that the effect of UDL participation overall on academic outcomes is mediated by improved school, social, and civic engagement, and similarly, that increased debate participation and success will be associated with increased likelihood of graduation and higher ACT scores, via increased levels of engagement.

METHODS: Study 3

Data were obtained from Chicago Public Schools (CPS) and the Consortium on Chicago School Research (CCSR) at the University of Chicago. The CCSR has maintained enrollment, demographic, attendance, and academic data on CPS high school students from 1991 to the present. Data collection for this study has been previously described (Mezuk, 2009; Mezuk et al., 2011). The study data were derived from CPS academic records, which includes 116 high schools with enrollment of approximately 112,000 students. Private and charter schools were not included. The racial/ethnic makeup of the CPS district is 47% Black, 39% Latino, 8% White, 3% Asian, and 3% multi-racial (CPS, 2009).

Students were identified as debaters from tournament records kept by the Chicago Debate League (CDL), from the 1997/8 through 2006/7 school years. The CCSR linked tournament registration records with CPS enrollment data. A random sample of comparison students had been previously selected for each debater (Mezuk, 2009). Comparison students attended the same school and entered high school in the same year as the debate participant in order to account for factors that could have influenced selection into particular schools. In order to maximize statistical power, the selection targeted four comparison students for every one debate participant (actual sampling ratio was 3.978:1). Overall, 12,179 CPS students enrolled in high school at some point during the 1997/8 through 2006/7 school years were selected, of which 2,449 (20%) had participated in at least one CDL tournament. This final sample was representative of the general CPS student body in terms of gender and race/ethnicity. This

analysis was limited to students with data from at least one indicator of school, social, or civic engagement (N=9,320).

This study includes two analyses of the association between debate participation and academic outcomes.

1. A retrospective cohort analysis of the relationship between debate participation, academic outcomes, and hypothesized mediators including social engagement, school engagement, and civic engagement.
2. A longitudinal analysis of the relationship between the level of debate participation, academic outcomes, and hypothesized mediators including social engagement, school engagement, and civic engagement.

Independent variables

1. Debater status: Students have previously been classified as debaters or non-debaters (Mezuk, 2009). Students who participated in one or more UDL tournaments during high school are considered debaters.
2. Debate quantity: Debate quantity is measured by the total number of tournaments in which the student participated.
3. Debate competitive success: Competitive success is the ratio of the number of rounds won by a student in a UDL tournament to the number of rounds debated, over the student's entire participation in the UDL.

Covariates

Analyses adjusted for gender, race/ethnicity, age in ninth grade, student SES (indicated by free lunch status), neighborhood poverty level, special education status, and academic risk.

Risk index: Academic performance prior to high school, student SES, and neighborhood poverty were combined into a risk index, as previously described (Anderson & Mezuk, 2012). Briefly, the risk index included the following factors: (1) dichotomous indicator of free lunch status, (2) dichotomous indicator of special education status, (3) neighborhood poverty as indicated by the

2000 US Census, (4) 8th grade standardized math scores and (5) 8th grade standardized reading scores. Neighborhood poverty was calculated by census block from the percent of adult males who were employed, and the percent of families with incomes above the poverty line; these scores were standardized relative to the Chicago mean. Two tests were used by CPS to assess 8th grade student performance during this study period: the Iowa Test of Basic Skills and the Illinois Standards Achievement Test. These scores were separately mean-standardized to yield one estimate for 8th grade reading and one estimate for 8th grade math.

The risk index was evaluated on a six-point scale ranging from zero to five, with one point assigned for each of the five risk factors. For the continuous variables (i.e., neighborhood poverty, 8th grade math and reading scores) a score of 1 was assigned if they were more than 0.5 standard deviations below the mean. Because of small cell sizes the two highest risk groups were combined for analysis, resulting in a five-point scale (ranging from 0 to 4).

Mediators

Indicators of student engagement (Table 6) were assessed as part of the CPS/CCSR 5 *Essentials School Survey* (CCSR, 2013). Specific variables include civic commitment, social competence, social conscience, student-teacher trust, and educational expectations. Reliability for survey items was as follows: school engagement ($\alpha=0.837$), student-teacher trust ($\alpha=0.912$), social competence ($\alpha=0.862$), and educational expectations ($\alpha=0.932$) (CCSR, 2013). All items average student responses to statements listed in Table 6 using a Likert scale, ranging from 1 (*strongly disagree*) to 10 (*strongly agree*). Because the specific survey measures assessed varied from year to year, the data available for any one measure are limited (i.e., the sample size for the measures ranged from 2,109 students for the measures of civic commitment to 9,260 students for the measure of student-teacher trust). In order to increase statistical power and preserve the representativeness of the analytic sample, these five measures of engagement were combined into a single *Engagement Index* variable. For this combined

variable each measure was first mean-standardized, and then all available survey scores were averaged to produce a single continuous Engagement Index (range -2.45 – 2.69).

A small subset of students (sample size ranging from 714 for *importance of education* to 2,328 for *social competence*) had more than one assessment of these engagement indicators during the study period; for this subset the change in engagement over time was calculated for debaters and comparison students. If a student had more than one of a measure, only the first was used in the creation of the Engagement Index.

Outcomes

Outcomes include three indicators of academic performance: (1) graduation from high school, (2) dropping out of high school, and (3) American College Test (ACT) scores.

Graduation status: High school completion status was derived from CPS administrative records, which indicated whether students were still enrolled in CPS or whether they had completed high school (either through graduation or alternate modalities, including GED), transferred out of the CPS district, or dropped out of school. Two dichotomous variables were created pertaining to high school completion. One variable (*graduate*) represented the proportion of students who graduated, in which the denominator included both students who transferred out of CPS and dropped out. The other variable (*drop out*) represented the proportion of students who dropped out of CPS during high school, and the denominator included graduates and students who transferred out of CPS.

College entrance exams: ACT scores were derived from CPS administrative records. The ACT is a standardized assessment used in college admissions, and it consists of four sections: Reading, English, Mathematics, and Science. Each test is scored on a scale of one to 36, and the total reported score is an average of these four scores. The ACT is generally taken in the spring before students apply to college (spring of 11th grade). The ACT assesses a student's college readiness based on a designated benchmark score (English \geq 18, Mathematics \geq 22, Reading \geq 21, Science \geq 24). A score at or above the benchmark indicates that a student is

“college ready” in that particular subject, or has a 50% chance of earning a grade of B or better in a college course in that subject area (ACT, 2006). For this analysis, dichotomous variables were created that indicated whether or not the students’ scores met or exceeded the benchmark in each of the four subject tests.

Analyses

Initially, linear regression was used to compare the individual indicators of school, social, and civic engagement, as well as the combined Engagement Index, of debaters and non-debaters, adjusting for demographic variables and academic risk (Table 7). The relationship between debate participation and academic outcomes has been previously reported (Mezuk, 2011). Among the subset of students with repeated assessments of engagement measures, this analysis tested whether change in these metrics over time differed for debaters and comparison students.

Multivariable logistic regression was used to assess the relationship between debater status, dichotomous outcomes (high school completion, ACT performance), and the Engagement Index (Table 9). Dichotomous outcomes include high school graduation, high school dropout, and meeting the benchmark on the ACT. All models included gender, race/ethnicity, SES, age in ninth grade, special education status, and academic risk. Mediation analysis was used to test for a direct effect between debate and high school graduation, and for an indirect effect via improved school engagement. Analyses tested for associations between the independent variable (debate participation and intensity) and the potential mediator (engagement index), between the independent variable and the outcomes (high school completion and reaching the benchmark on the ACT), and between the mediator and the outcomes. These associations were tested using linear and logistic regression, adjusting for demographics and academic risk (Table 10). The PROCESS macro (Hayes, 2012) was used to test whether these effects are different from zero. Bootstrapping was used to identify direct and

indirect effects of debate on the outcomes (Preacher & Hayes, 2008). Each mediation analysis used 1,000 bootstrapped samples.

Within the subset of students who participated in debate, multiple logistic regression assessed the relationship between the measures of debate participation, engagement, and academic outcomes.

All models adjusted for gender, race/ethnicity, SES, age in ninth grade, special education status, and academic risk. All analyses were conducted using SAS 9.3.

RESULTS: Study 3

Sample characteristics have been previously described (Mezuk et al., 2011; Anderson & Mezuk, 2012). Briefly, debaters were more likely to be women and to have a lower academic risk score, and they were more likely to graduate from high school and reach the benchmark on the ACT, and less likely to drop out of school. Analyses were limited to students with at least one engagement score.

Debate and engagement

Raw survey scores ranged from 0-10, with 0 indicating strong disagreement with survey statements, and 10 indicating strong agreement. Each engagement variable includes an average of responses to survey items.

Because survey content differed each year, the total number of participants who completed each measure also differs, ranging from 2,109 students (civic commitment) to 9,260 students (student-teacher trust). A smaller number of participants were in high school for two administrations of a particular survey measure, ranging from 996 (civic commitment) to 2324 (social competence). Among students who completed multiple survey administrations, this analysis used the first administration of each survey measure.

Table 7 describes average engagement scores by debater status. Overall debaters had higher scores on each measure of engagement than non-debaters. Compared to students who

had never debated, debaters reported significantly higher social conscience ($p < .001$), social competence ($p < .001$), civic commitment ($p < .01$), and importance of education ($p < .001$).

Among the students who completed multiple survey measures, social conscience scores decreased over time among both debaters and non-debaters; social competence increased among debaters but decreased among non-debaters ($p < .05$); civic commitment scores decreased among both groups; student-teacher trust decreased among both groups; and importance of education decreased among debaters but increased among non-debaters ($p < .05$) (Table 8).

Debaters scored higher overall on the engagement index ($p < .001$). Women had higher engagement scores overall and by debater status ($p < .001$). Students who graduated from high school had higher scores than those who did not ($p < .001$), and students who dropped out had lower scores than those who did not ($p < .001$). Engagement did not vary significantly based on race/ethnicity or academic risk group.

Debate, engagement, and high school graduation

Table 9 describes the results of regression analysis predicting high school graduation and dropout from debate status, demographic variables, and student engagement. In both models, debaters were 2.8 times more likely to graduate from high school than non-debaters ($p < .001$). In the models which included engagement, a higher engagement score predicted greater likelihood of graduating from high school ($p < .01$) and reduced likelihood of dropping out of school ($p < .001$). Model fit improved with the addition of the engagement index.

These models satisfy the criteria for mediation specified by Baron and Kenny (1982): there are significant associations between debate and graduation, debate and engagement, and engagement and graduation; and the association between debate and graduation decreased when engagement was added to the regression model. Table 10 describes mediation analyses results, in which a confidence interval which does not include zero indicates a significant effect.

Figure 4 illustrates the results from the mediation analyses, which indicated both significant direct and indirect effects of debate on graduation via improved engagement.

Debate, engagement, and ACT scores

Debaters were more likely to score at or above the benchmark on each section of the ACT (Table 12). This association was strongest for the English, Science, and Reading sections of the ACT ($p < .001$). When engagement was added to these regression models, debate remained a significant predictor of reaching the benchmark on the English, Science, and Reading sections, but was not a significant predictor of reaching the benchmark on the Math ACT. A higher engagement score predicted greater likelihood of reaching the benchmark on the English ($p < .05$), Math ($p < .01$), and Reading ($p < .01$) sections of the ACT. Mediation results indicated that the engagement index fully mediated the effect of debate participation on reaching the benchmark on the Math ACT ($p < .01$), and it partially mediated the relationship for the English and Reading sections, and did not mediate the relationship between debate and the Science ACT.

Debate intensity, engagement, and high school graduation

The association between measures of debate intensity (competitive success and quantity of participation) and survey measures was weaker than the association between the engagement index and debate participation overall (Table 11). Greater competitive success was associated with higher scores on student-teacher trust ($p < .05$), and greater quantity of participation was associated with higher scores in civic commitment and importance of education ($p < .05$). The engagement index was associated with greater competitive success ($p < .05$) but not with participation.

In models adjusting for demographic characteristics and academic risk, both measures of participation intensity were associated with increased likelihood of graduating from high school ($p < .001$) and decreased likelihood of dropping out of school ($p < .001$ for competitive success; $p < .01$ for quantity; Table 13). However, in these models (which were limited to debate

participants), engagement did not predict graduating or dropping out of high school. This indicates that engagement does not mediate the effect of competitive success and quantity of participation on academic outcomes.

DISCUSSION: Study 3

The primary findings from this study are that 1) debaters report greater social, civic, and school engagement than non-debaters after adjusting for academic risk, SES, gender, and race/ethnicity; 2) engagement partially mediates the association between debate participation and academic outcomes; and 3) greater engagement is associated with debate competitive success, though engagement does not mediate the relationship between debate intensity and academic outcomes.

Debaters report greater social conscience, social competence, civic commitment, and importance of education compared to non-debaters. These factors represent elements of participation in debate that may connect skills taught in school (e.g., reading comprehension) with social skills, working as a team, and involvement with community issues. These higher levels of engagement may be a consequence of UDL participation, or they may reflect an inherent difference between students who participate in an UDL and those who do not. While student-teacher trust is not significantly higher among debaters than non-debaters, it is logical that an activity that may not involve interaction with teachers might not impact students' relationships with teacher.

The engagement index partially mediated the relationship between UDL participation and academic outcomes. Engagement partially mediated the association between debate and high school graduation/dropout, and reaching the benchmark on the English and Reading ACTs, and it fully mediated the association between debate and reaching the benchmark on the Math ACT. These findings are consistent with the interpretation that the positive academic outcomes previously linked to debate participation reflect a combination of improved academic skills involved in debate participation (e.g., critical thinking, reading comprehension, argument

construction) and increased school engagement resulting from socialization as a part of a debate team.

This study addresses a limitation of previous studies on UDL participation in that it includes psychosocial measures associated with UDL participation. Previous studies have reported improved academic outcomes associated with high school participation in an UDL (Mezuk et al., 2011; Anderson & Mezuk, 2012), but academic measures are limited in their ability to indicate student achievement. Consistent with the framework of PYD, in which youth development and achievement is conceptualized broadly with a range of indicators, this study uses psychosocial measures to provide a broader scope of the associations of debate with youth development.

Among the subset of students who completed measures multiple times, social conscience, civic commitment, importance of education, and student-teacher trust scores decreased, which is consistent with results of Study 1 and with other research reporting decreasing school engagement among adolescents over time (Li & Lerner, 2011; Janosz et al., 2008). While debaters' social competence scores increased significantly versus non-debaters, their importance of education scores decreased significantly. The collaborative work characteristic of participating in a debate team may have contributed to the increase in social competence. While importance of education decreased among debaters, this score remained high among all participants in the sample in both survey administrations.

Among debaters, greater quantity of participation was associated with greater civic commitment and importance of education, and greater competitive success was associated with greater student-teacher trust and overall engagement. However, these relationships did not mediate the association between debate intensity and academic outcomes. There may have been inadequate variation in levels of engagement among debaters since debaters' engagement overall was high. Consistent with previous results (Anderson & Mezuk, 2012), even students with low competitive success and limited participation in debate tournaments were still

more likely to graduate from high school and reach the benchmark on the ACT. This suggests that aspects of debate participation other than competitive success or quantity of involvement (e.g., peer relationships and support, coaching, mentorship, development and application of non-cognitive skills) may be more salient features of this activity as it relates to academic success. Future research should explore these characteristics as potential mediators of debate participation and academic performance.

Strengths and limitations

These findings should be interpreted in light of study limitations. The comparison group of CPS students was selected using propensity score matching in order to account for student self-selection into debate. These analyses account for SES and academic risk in order to minimize any effects of self-selection into an UDL. However, similar to Study 1, it is impossible to assess the degree of bias from self-selection without a randomized controlled experiment. This study's results may not be generalizable to students in suburban or rural areas since students in this study attend schools in urban areas.

Changes in survey measures from year to year limited analysis of specific types of engagement. Because the five measures of engagement were highly correlated, and because using a single measure would significantly limit sample size, all available engagement data were combined. Testing for multiple mediation, which is common in psychosocial processes (Baron & Kenny, 1986), would allow comparison of the effects of the different mediators. However, the high correlation between the measures of engagement suggest that they are indicators of engagement more broadly. Finally, these data are several years old at the time of this study. However, the content and characteristics of the activity (UDL participation) at the time of this study remain similar to UDL characteristics during data collection (NAUDL, 2015).

Similar to Study 1, students who participated in the Chicago Debate League reported significantly higher engagement than those who did not. However, for each engagement measure, the difference in engagement was less than half of one point on a 10-point scale. This

difference in engagement may not represent a practically significant difference, since this is less than half of a standard deviation, which has been demonstrated to be a minimally important difference in clinical settings (Norman et al., 2003). Other statistical techniques to determine whether this difference is practically significant include effect size calculations and the reliable change index (Jacobson & Truax, 1991). Though the difference in student engagement was small, it remained a significant predictor of meaningful student outcomes such as high school completion and reaching the benchmark on the ACT.

This study has several strengths, and its findings can inform future program design and evaluation. The sample is large and was followed over a 10-year time period. The sample is diverse; the majority of students in the sample are black or Latino. Along with its use of multiple indicators of academic achievement, it includes new psychosocial measures of youth development. These findings could have implications for civic participation and social engagement in adulthood, in addition to previously reported academic outcomes. Civic and school engagement in adolescence is associated with greater civic participation and community involvement in adulthood (Duke, Skay, Pettingell, & Borowsky, 2009).

These findings have implications for education researchers, policy makers, and community stakeholders. Debate's association with psychosocial markers of adolescent development along with academic outcomes underscore the importance of investing in co-curricular and after-school programs for young people. Such programs are particularly important in urban schools seeking to improve academic engagement and graduation rates. This is the largest study to examine the psychosocial mediators of UDL participation and academic performance. Such research can inform efforts to close racial/ethnic and socioeconomic disparities in educational attainment, with reverberating benefits to health and development throughout the lifespan (Williams & Collins, 2001).

CONCLUSIONS

These studies provide new information on how participation in after-school activities leads to improved academic outcomes and decreased likelihood of arrest. This multiple-methods project provides data on factors that impact adolescents' engagement with school, and opportunities for modifying engagement in order to positively impact youth development.

The quantitative studies indicate that EAP is associated with improved student engagement, along with longer-term effects including increased likelihood of graduation and reaching the benchmark on the ACT, and decreased likelihood of arrest after age 18. School engagement mediated the relationship between EAP, school engagement, and outcomes including high school graduation and dropout and the English, Reading, and Math ACTs. Qualitative results emphasized the importance of positive socialization with other adolescents and adults. For prevention of delinquent or violent behavior, qualitative results stressed the importance of community support for youth at schools, community centers, and among police departments.

Consistent with the SDM, these findings emphasize the importance of school engagement and social connection with school to student achievement. The SDM stresses the importance of social interactions, bonding, and purposeful group action to youth development (Catalano & Hawkins, 1996). The models produced in these analyses confirm the SDM's explanation for how positive socialization fosters youth development and prevents delinquency. In particular, the activity in Study 3, urban debate league participation, involves competition, success at which can provide positive reinforcement for activity participation and improve students' engagement with school and other students (Huang et al., 2001).

While EAP was significantly associated with school engagement and youth outcomes, these effects did not vary based on the type of activity involvement. The type of activity may be less important than the characteristics stated by the SDM, such as purposeful group action and positive socialization (Catalano & Hawkins, 1996).

The qualitative results in Study 2 can inform development and tailoring of after-school programs and community efforts to support youth development in general, and among young black men in particular. Given recent events involving citizen policing and police brutality against young black men in the U.S. (Jackson & Balaji, 2015), it is essential that researchers and community members interested in youth development and social justice produce data and research that support educational and community programs for youth in urban areas. This dissertation focuses on identifying opportunities to foster positive youth development, with an emphasis on youth who are at greater risk for low educational attainment or involvement with the criminal justice system.

Along with identifying how after-school activities can better serve young black men in New Orleans, results from the qualitative study may allow tailoring of evaluation criteria to identify outcomes from an effective program. Youth participants identified safety, leadership opportunities, and positive socialization with staff and other students as important to the organization's effectiveness. These factors can guide program development and provide additional outcome criteria for evaluations of positive youth development programs.

Improving opportunities for positive youth development is particularly important for adolescents most at risk for dropping out of high school or delinquent behavior. While this dissertation includes a nationally representative sample, Studies 2 and 3 focus on groups of students with increased risk for not finishing high school. Graduation rates are lower among students in the Southern U.S., male students, black and Latino students, and students in areas with high rates of poverty (NCHS, 2012; Swanson, 2004). Healthy People 2020 aims to improve graduation rates in the U.S. overall by nearly 10 percent (Healthy People 2020, 2012). Rather than focusing efforts broadly to improve graduation rates, additional efforts should be targeted to schools or areas where students are less likely to graduate from high school.

This study's findings can inform efforts to improve graduation rates for students with high academic risk. For example, Latino students were less likely to participate in extracurricular

programs than non-Latino students. Given the low graduation rates among Latino students in the U.S., improving opportunities for after-school programs in schools with large numbers of Latino students and facilitating participation for Latino students could be routes to improving school engagement and academic outcomes.

Targeting programs for students and schools with increased academic risk is important to shrinking disparities in educational attainment. These findings suggest that EAP may represent a proximal opportunity to improve student engagement with school with the distal effect of improved educational attainment. While there was not disproportionate benefit for students with high risk for not finishing high school, the association between EAP, school engagement, and youth outcomes did not differ based on student characteristics. High-risk students derived equal benefit from activity participation to low-risk students. However, there was less participation among students with low SES, Latino students, and students with high academic risk, all of which are associated with lower likelihood of finishing high school. Increasing EAP among students with elevated risk for not finishing high school could impact disparities in educational attainment more broadly. Availability of programs may be limited, or there may be structural barriers to participation among students with higher risk. Efforts to improve educational attainment should consider barriers to participation among low-SES youth, such as cost, transportation, and quality of facilities (Humbert et al., 2006).

Disparities in educational attainment persist despite many education reform efforts over the past few decades (U.S. Department of Education, 2014). Along with this study's findings, empirical evidence within the PYD framework suggests that improving school engagement can impact social and academic outcomes for adolescents. Research should identify opportunities both within and outside the classroom to increase school engagement, particularly among students most at risk for dropping out. Activities that improve prosocial bonding contribute to school engagement, but to date this is the only study to examine whether such factors explain

the relationship between co-curricular activities and major markers of positive youth development.

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Figure 1: Mechanism of the association between EAP, school engagement, and youth outcomes (Study 1)

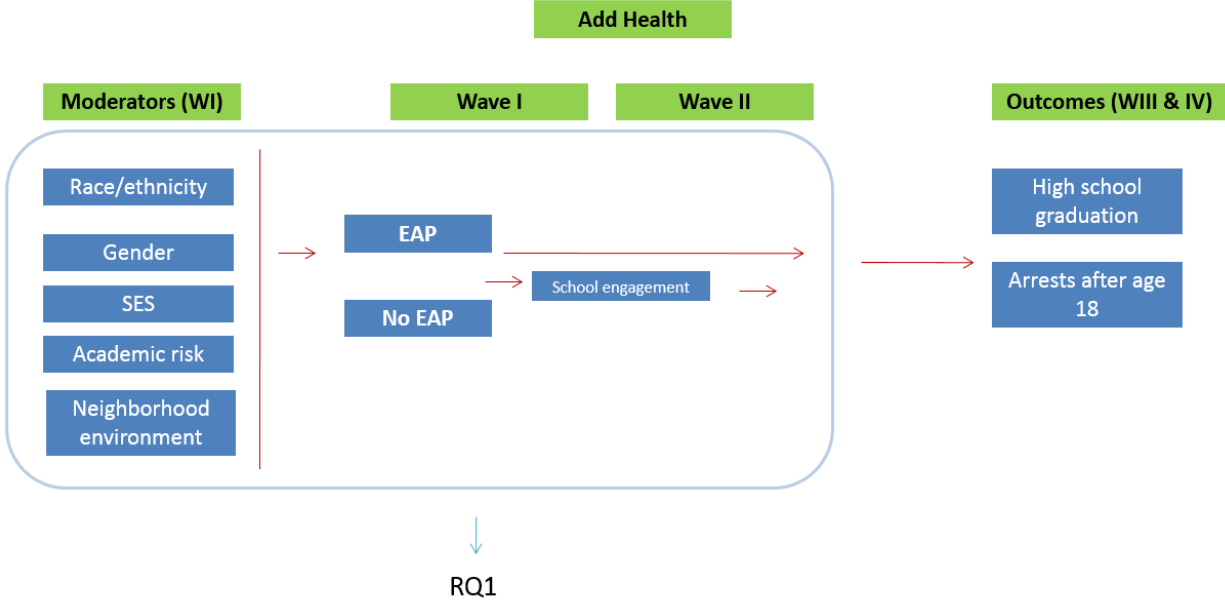


Figure 3: Mechanism of the association between debate participation, school engagement, and youth outcomes (Study 3)

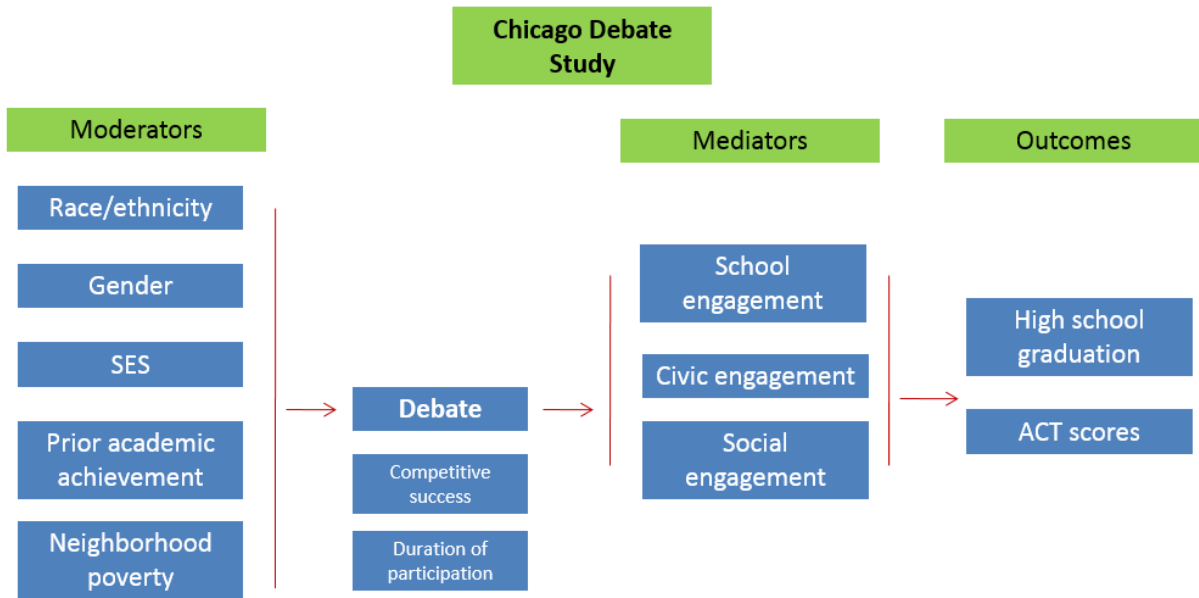


Figure 4: The mediating effect of school engagement on the relationship between debate participation and high school completion

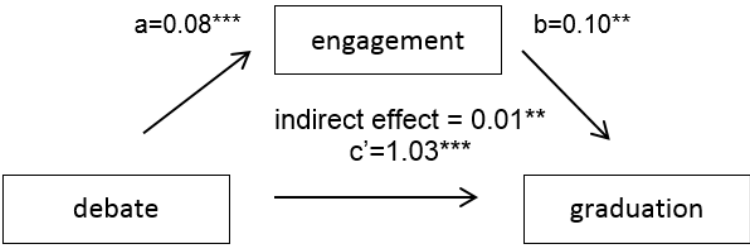


Table 1: Descriptive characteristics of sample, Add Health

	N, %	School engagement WI (mean, SE)	EAP (% participating)
Engagement Wave I (mean, SE)	11179	18.7 (0.09)	19.1 (.09)***
Engagement Wave II (mean, SE)	7806	18.6 (0.10)	18.8 (.10)***
Change in engagement	7759	-0.25 (.06)	-0.28
<u>Academic risk score</u>			
0	7307 (65.2)	19.0 (.09)	84.0
1	2874 (24.7)	18.0 (.11)	70.6
2	974 (8.7)	17.4 (.17)	62.5
3	152 (1.4)	17.2 (.34)***	49.9***
<u>SES (by parent education)</u>			
Less than HS (N)	1523 (13.4)	18.2 (.12)	66.6
HS grad or more (N)	9269 (86.6)	18.7 (.09)***	80.4***
<u>Neighborhood environment</u>			
0	423 (3.5)	16.3 (.32)	69.7
1	1156 (9.7)	16.8 (.16)	71.9
2	2115 (17.7)	17.6 (.10)	76.3
3	3196 (28.6)	18.8 (.08)	77.5
4	4192 (40.5)	19.7 (.08)***	82.8***
<u>EAP</u>			
Yes	8810 (78.3)	19.1 (.09)	
No	2522 (21.7)	18.8 (.09)***	
<u>Gender</u>			
Men	5199 (47.8)	18.8 (.09)	76.4
Women	6131 (52.2)	18.5 (.11)***	79.9**
<u>Race/ethnicity</u>			
Black	2584 (16.1)	18.2 (.14)	78.3
Latino	1741 (9.5)	18.4 (.10)	66.6
White	5978 (68.3)	18.8 (.18)	79.5
Other	1029 (6.1)	18.6 (.19)***	82.1***
<u>Outcomes</u>			
<u>HS graduation</u>			
HS diploma	9952 (86.1)	18.8 (.09)	81.4
Did not graduate from HS	1380 (13.9)	17.4 (.15)***	59.0***
<u>Arrests after age 18</u>			
Never been arrested	8565 (74.5)	18.7 (.10)	80.3
Arrest 1+ times	2767 (25.5)	18.0 (.11)***	72.4***

Table 2: Average school engagement by EAP, Add Health

		EAP				
		None	Any EAP	Art	Sports	Academics
School engagement						
	<i>N</i>	2477	8702	2578	6398	4226
	<i>Wave 1 (mean, SE)</i>	17.5 (0.12)	19.1 (0.09)	19.2 (0.12)	19.2 (0.11)	19.2 (0.11)
	<i>N</i>	1622	6172	1956	4683	2984
	<i>Wave 2 (mean, SE)</i>	17.5 (0.16)	18.8 (0.10)	19.0 (0.16)	19.0 (0.10)	18.9 (0.12)

Table 3: Odds ratios predicting likelihood of high school graduation and arrest

	High school graduation (N, %)	Arrest (N, %)
<u>SES</u> (Ref: less than HS)	3.82 (3.14-4.65)***	0.80 (0.61-1.04)
<u>EAP</u>	2.99 (2.53-3.53)***	0.63 (0.54-0.74)***
<u>Gender</u> (ref: men)	1.31 (1.16-1.48)***	0.25 (0.22-0.29)***
<u>Academic risk</u> (ref: none)		
1	0.25 (0.21-0.29)***	2.37 (2.03-2.77)***
2	0.09 (0.07-0.11)***	3.78 (2.86-4.98)***
3	0.04 (0.03-0.07)***	3.99 (2.14-7.44)***
<u>Neighborhood</u> (ref: 0)		
1	1.13 (0.74-1.73)	1.15 (0.80-1.65)
2	1.30 (0.86-1.95)	1.16 (0.84-1.62)
3	1.69 (1.14-2.50)**	1.00 (0.71-1.40)
4	2.15 (1.39-3.32)***	0.84 (0.61-1.14)
<u>Race/ethnicity</u> (ref: Black)		
White	1.32 (0.99-1.78)	0.77 (0.63-0.93)**
Latino	0.89 (0.64-1.24)	0.77 (0.56-1.05)
Other	1.44 (0.94-2.21)	0.64 (0.44-0.92)*

Table 4: Logistic regression analysis predicting likelihood of HS graduation or arrest after age 18

		Graduate		Arrest	
		Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Race/ethnicity (<i>ref: Black</i>)	White	0.75 (0.52-1.08)	0.78 (0.54-1.12)	0.87 (0.69-1.09)	0.85 (0.70-1.06)
	Latino	0.89 (0.56-1.43)	0.87 (0.55-1.39)	0.79 (0.56-1.12)	0.78 (0.55-1.12)
	Other	0.77 (0.47-1.26)	0.78 (0.47-1.29)	0.72 (0.48-1.09)	0.71 (0.48-1.07)
Gender (<i>ref: Men</i>)	Women	0.93 (0.77-1.13)	0.97 (0.80-1.18)	0.31 (0.27-0.35)***	0.30 (0.26-0.34)***
SES (<i>ref: less than HS</i>)	HS graduate	2.87 (2.26-3.65)***	2.91 (2.28-3.72)***	0.96 (0.74-1.24)	0.97 (0.75-1.27)
Neighborhood environment (<i>ref: 0</i>)	1	0.97 (0.63-1.51)	0.93 (0.58-1.49)	1.24 (0.85-1.81)	1.04 (0.64-1.70)
	2	0.93 (0.60-1.45)	0.82 (0.50-1.34)	1.23 (0.86-1.76)	1.12 (0.70-1.78)
	3	1.07 (0.71-1.63)	0.88 (0.55-1.42)	1.10 (0.77-1.55)	1.05 (0.67-1.66)
	4	1.18 (0.77-1.82)	0.92 (0.55-1.51)	1.03 (0.73-1.46)	1.03 (0.73-1.46)
Academic risk (<i>ref: 0</i>)	1	0.31 (0.25-0.38)***	0.33 (0.27-0.41)***	1.94 (1.67-2.26)***	1.88 (1.60-2.19)***
	2	0.11 (0.08-0.15)***	0.12 (0.09-0.17)***	3.05 (2.42-3.85)***	2.85 (2.24-3.62)***
	3	0.06 (0.03-0.11)***	0.06 (0.04-0.12)***	2.75 (1.69-4.46)***	2.73 (1.68-4.43)***
EAP		2.06 (1.74-2.45)***	1.97 (1.64-2.37)***	0.79 (0.67-0.92)**	0.82 (0.70-0.97)*
School engagement			1.06 (1.04-1.09)***		0.96 (0.94-0.98)***
Model chi-square		1491867.4***	1491587.3***	1236852.9***	1264234.9***
-2 log likelihood		7195389.6	7007271.8	11480767	11312772
Total graduated/ arrested		9345	9265	2566	2532
Total N		10562	10444	10562	10444

Model 1 includes demographic characteristics and EAP. Model 2 includes demographic characteristics and both EAP and school engagement.

Table 5: Mediation of the effect of EAP on high school graduation or arrest after age 18 through school engagement. Models include demographic characteristics, academic risk, and neighborhood environment.

	Graduation				Arrest			
	b	S.E.	L-Cl	U-Cl	b	S.E.	L-Cl	U-Cl
Direct effect	0.616	0.071	0.477	0.754	-0.096	0.058	-0.209	0.018
Indirect effect	0.056	0.011	0.034	0.077	-0.040	0.009	-0.059	-0.024

Table 6: Survey items from the *Five Essentials School Survey*

Measure	Mean (range)	Item wording
Civic engagement	5.17 (0-10)	<ul style="list-style-type: none"> •Everyone has a responsibility to be concerned with state and local issues. •I have a responsibility to be actively involved in community issues. •I expect to be involved in improving the community. •I have good ideas for programs or projects that would help solve community problems.
School engagement Educational expectations	5.70 (0-10)	<ul style="list-style-type: none"> •Working hard in high school matters for success in the work force. •High school teaches me valuable skills. •I'm getting a good education at my school.
Student-teacher trust	4.63 (0-10)	<ul style="list-style-type: none"> •My teacher really cares about me. •My teacher always keeps their promises. •My teacher always tries to be fair. •I feel safe and comfortable with my teacher at this school. •When my teacher tells me not to do something, I know he/she has a good reason. •My teacher treats me with respect.
Social engagement Social conscience	4.59 (0-10)	<ul style="list-style-type: none"> •I should just take care of myself and let others take care of themselves. •It is important to help others in my community. •It is important to work to solve the problems of poor people.
Social competence	4.42 (0-10)	<ul style="list-style-type: none"> •I'm good at helping people. •I'm good at taking turns and sharing things with others. •I'm very good at working with other students. •I listen carefully to what other people say to me. •I can always find a way to help people end arguments.

All items were coded on a scale from 1-10 with responses ranging from strongly disagree (1) to strongly agree (10). The first social conscience item was reverse-coded.

Table 7: Indicators of social, civic, and school engagement by debate status

	Debaters			Non-debaters		
	N	Raw score	Mean-standardized	N	Raw score	Mean-standardized
Social engagement						
Social conscience	1231	4.87***	0.128	4561	4.51	-0.035
Social competence	1594	4.69***	0.123	6040	4.35	-0.032
Civic commitment	487	5.42**	0.125	1627	5.10	-0.037
School engagement						
Student-teacher trust	1950	4.66	0.017	7318	4.62	-0.005
Importance of education	821	5.90**	0.084	2706	5.63	-0.026
Engagement index	1964	4.91***	0.077	7356	4.66	-0.030

*p<.05

**p<.01

***p<.001

Adjusted for gender, race/ethnicity, age in 9th grade, and risk level

Table 8: Change in social, civic, and school engagement by debate status

	Debaters		Non-debaters	
	Raw score	N	Raw score	N
Social engagement				
Social conscience	-0.593	317	-0.389	1119
Social competence	0.190*	524	-0.056	1804
Civic commitment	0.111	248	-0.203	752
School engagement				
Student-teacher trust	-0.512	518	-0.615	1750
Importance of education	-0.400*	173	0.174	541

*p<.05

Adjusted for gender, race/ethnicity, age in 9th grade, and risk level

Table 9: Logistic regression predicting likelihood of graduating from or dropping out of high school

		Graduate		Drop out	
		Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Debate participant (ref: No)	Debater	2.84 (2.43-3.31)***	2.81 (2.41-3.28)***	0.41 (0.34-0.50)***	0.42 (0.34-0.51)***
Race/ethnicity (ref: White)	Black	1.41 (1.20-1.67)***	1.42 (1.20-1.67)***	1.02 (0.83-1.25)	1.01 (0.82-1.24)
	Latino	1.19 (1.01-1.41)*	1.20 (1.01-1.41)***	0.92 (0.74-1.13)	0.91 (0.74-1.13)
	Other	2.52 (1.90-3.35)***	2.53 (1.91-3.36)***	0.29 (0.18-0.45)***	0.28 (0.18-0.44)***
Gender (ref: Men)	Women	1.71 (1.55-1.89)***	1.67 (1.51-1.85)***	0.58 (0.52-0.66)	0.61 (0.54-0.69)***
Age (years)		0.58 (0.51-0.64)***	0.57 (0.51-0.64)***	1.86 (1.64-2.12)***	0.81 (0.75-0.89)***
Risk group (ref: Zero)	1	0.49 (0.39-0.60)***	0.48 (0.39-0.60)***	2.37 (1.73-3.25)***	2.41 (1.76-3.30)***
	2	0.33 (0.27-0.42)***	0.33 (0.27-0.41)***	3.87 (2.81-5.32)***	3.93 (2.86-5.41)***
	3	0.23 (0.19-0.29)***	0.23 (0.19-0.29)***	5.52 (3.98-7.65)***	5.57 (4.02-7.73)***
	4 or 5	0.23 (0.18-0.29)***	0.22 (0.18-0.29)***	5.89 (4.20-8.25)***	5.95 (4.24-8.34)***
Engagement index			1.11 (1.04-1.19)**		0.81 (0.75-0.89)***
Model chi-square		970.02***	978.60***	778.88***	802.07***
-2 log likelihood		9023.80	9015.21	6715.97	6692.78
Total graduated/ dropped out		5716	5716	1403	1403
Total N		8173	8173	8173	8173

Model 1 includes all demographic characteristics but does not include the survey index. Model 2 includes all demographic characteristics and the engagement index.

Table 10: Mediation of the effect of participation in an UDL on graduating from high school, dropping out of school, and reaching the benchmark on the ACT through school, social, and civic engagement

	Reaching the benchmark on the ACT			
	b	S.E.	L-CI	U-CI
<u>Graduation</u>				
Direct effect	1.027***	0.078	0.874	1.180
Indirect effect	0.008**	0.004	0.002	0.017
<u>Dropping out</u>				
Direct effect	-0.857***	0.101	-1.055	-0.659
Indirect effect	-0.016***	0.006	-0.030	-0.008
<u>English ACT</u>				
Direct effect	0.574***	0.075	0.427	0.722
Indirect effect	0.005*	0.004	0.0004	0.016
<u>Math ACT</u>				
Direct effect	0.137	0.074	-0.008	0.282
Indirect effect	0.009***	0.004	0.002	0.020
<u>Reading ACT</u>				
Direct effect	0.436***	0.068	0.303	0.570
Indirect effect	0.008**	0.004	0.002	0.018
<u>Science ACT</u>				
Direct effect	0.333***	0.084	0.169	0.498
Indirect effect	0.003	0.003	-0.003	0.012

*p<.05, **p<.01, ***p<.001

Adjusted for gender, race/ethnicity, age in 9th grade, and academic risk.

Table 11: Associations between debate intensity measures and survey scores

	Duration/intensity	Competitive success
	Total rounds	Wins ratio
	β (p-value)	β (p-value)
Social engagement		
Social conscience	0.002 (p=.17)	0.29 (p=.06)
Social competence	-0.001 (p=.54)	0.08 (p=.58)
Civic commitment	0.006 (p=.03)*	0.48 (p=.07)
School engagement		
Student-teacher trust	0.001 (p=.64)	0.26 (p=.04)*
Importance of education	0.004 (p=.04)*	0.17 (p=.41)
Engagement average	0.001 (p=.16)	0.19 (p=.03)*

*p<.05

Adjusted for gender, race/ethnicity, age in 9th grade, and academic risk.

Table 12: Logistic regression analysis predicting likelihood of reaching the benchmark on the ACT, by debater status and engagement score.

		Model 1 OR (95% CI)	Model 2 OR (95% CI)	Total reaching benchmark	N
English ACT	Debater (ref: no)	1.76 (1.52-2.05)***	1.76 (1.51-2.04)***	3365	5941
	Engagement		1.09 (1.00-1.19)*		
Math ACT	Debater (ref: no)	1.16 (1.00-1.35)*	1.15 (0.99-1.34)	1540	5941
	Engagement		1.16 (1.05-1.27)**		
Science ACT	Debater (ref: no)	1.42 (1.20-1.68)***	1.42 (1.20-1.68)***	953	5936
	Engagement		1.03 (0.92-1.15)		
Reading ACT	Debater (ref: no)	1.54 (1.35-1.76)***	1.53 (1.34-1.75)***	2290	5939
	Engagement		1.13 (1.04-1.23)**		

Models include demographic characteristics and academic risk.

*p<.05

**p<.01

***p<.001

Table 13: Logistic regression analysis predicting likelihood of graduating from high school or dropping out, by debate intensity measures.

Outcomes	Predictors	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Total graduated/ dropped out	N
Graduate	Wins ratio	4.59 (2.16-9.77)***	4.60 (2.16-9.80)***	1442	1662
	Engagement index		0.98 (0.81-1.20)		
	Total rounds debated	1.03 (1.02-1.04)***	1.03 (1.02-1.04)***	1469	1694
	Engagement index		0.98 (0.81-1.19)		
Dropout	Wins ratio	0.15 (0.05-0.40)***	0.15 (0.05-0.40)***	121	1662
	Engagement index		1.01 (0.78-1.30)		
	Total rounds debated	0.98 (0.97-0.99)**	0.98 (0.97-0.99)**	124	1694
	Engagement index		1.02 (0.79-1.31)		

Models include demographic characteristics and academic risk.

*p<.05

**p<.01

***p<.001

Study 2 Interview Guide

Introduction:

We are talking with youth who currently attend or previously attended programs at APEX Youth Center. I'm interested in learning about your experiences at APEX, what you like and dislike about it, and your experiences in your neighborhood and school, specifically concerning safety and violence.

A. Experiences at APEX

The purpose of this section is to understand why people attend APEX, what people do at APEX, and what you like and dislike about it.

1. How did you first get involved with APEX?
 - a. How did you find out about APEX? Tell me about the first time you came here.
 - b. Tell me about why you first came to APEX.
 - i. Why you come to APEX now?
 - c. Why do you think other young people go to APEX?
2. Now I'd like to talk about your experience at APEX.
 - a. How often do you go to APEX?
 - i. When do you usually come here? Is this when most people come here?
 - ii. How do you get here? Bus, walk, drive?
 - iii. Are the days/times when APEX is open good for you?
 - b. What do you do when you come here?
 - i. Tell me about your favorite programs or activities. What makes them special?
 - ii. Which programs or activities are most popular? Tell me about these programs.
 - iii. Tell me about things at APEX you don't like as well or anything you think they should do differently.
 - c. How do you get along with the other young people that come here?
 - i. Tell me about who you spend time with at APEX.
 - ii. Are they similar to or different from people you'd spend time with in other places? How so?
 - d. How do you get along with the APEX staff?
 - i. How much time do you spend much time with them?
 - ii. How do you get along with them?
 - iii. How do staff at APEX personally help or support you?
 - e. Tell me about the rules for people who attend programs at APEX.
 - i. How are these rules enforced? What happens if someone breaks a rule?
 - ii. Tell me about any other rules or requirements you would like to have at APEX. Tell me more about that.
 - iii. What about rules or requirements you think they should get rid of? Tell me more about that.
 - f. Do you think your experience at APEX is different from the experiences of other young people who come here?
3. Family's/friends' opinions of APEX:
 - a. You mentioned some of your friends attend APEX. What do they think about the program?
 - b. Of your friends who don't come here, what do they think of APEX? What do they know about it?

- c. What does your family think about APEX and your involvement in the program?
4. What are some other things that you do after school or work besides going to APEX?
 - a. Tell me about other community or church programs you are involved with.
 - b. How do these programs compare to APEX?

B. Now I'd like to hear about your school – what it's like, what the people are like, what you like and dislike about it, and how safe you think it is.

5. Are you in school?
6. If so, what school do you attend? Tell me about it.
 - a. How long have you been going there?
 - b. Is it nearby in your neighborhood, or do you have to travel to get there?
 - c. How big is it?
 - d. What are the students like?
 - i. Are there many from your neighborhood?
 - ii. Do any of them come to APEX?
 - e. Do you have many friends at your school?
 - f. What are the teachers like?
 - i. How well do you get along with them?
 - ii. How well do other students get along with the teachers?
 - g. How safe is your school? How safe do you usually feel safe there?
 - i. Do you think other students feel safe there? Tell me more about that.
7. Does your school have any after-school programs like sports, clubs, or tutoring.
 - a. If so, tell me about them. Do you participate in any of these after-school programs?
 - b. How do these activities or programs compare to what you do at APEX?
 - c. Do these after-school programs have any academic requirement to participate? Do you need to maintain a certain GPA to stay on the team or continue to attend?
8. Tell me what you want to do after you finish school.

C. Neighborhood

9. Now I'd like to hear about your neighborhood in general. How would you describe your neighborhood to someone who had never been here before?
 - a. What neighborhood do you live in?
 - b. What do you like about your neighborhood?
 - c. What are some things you dislike or you'd like to change?
 - d. Talk about the people who live in this neighborhood. Do people spend time outside socializing?
 - e. What about young people in your neighborhood? Where do they go to play and socialize?
 - f. Tell me about businesses in the neighborhood.
 - g. What are the schools like in this neighborhood? Do most young people in this neighborhood attend schools in the area? Tell me more about that.
10. If you were describing an ideal or perfect neighborhood, what would it be like?

D. Violence

11. Now I'd like to talk about violence and crime in your neighborhood. Let's talk about whether you think it's a problem in your neighborhood.
 - a. What types of violence are most common in your neighborhood?
 - i. What about violence among youth in particular?
 - ii. What makes people do violent things to other people?
 - b. What could be changed to decrease violence in your neighborhood?
 - i. What things could residents of the neighborhood do to help reduce violence?
 - ii. What about the police- what could they do?
 - iii. Tell us what programs like APEX or other similar agencies do to help reduce youth violence in the community.

E. Closing comments

We've finished all of the questions I have for you. We talked about APEX – how you learned about it, what do you here, what you like and dislike about it; your neighborhood; your school; and violence in the neighborhood – some of the reasons for it, and how violence can be prevented.

12. Is there anything you want to add to what we talked about?
 - a. Is there anything you think I should have asked that I didn't ask?
13. Is there anything that stood out for you during the interview, or anything you'd like to restate?