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Factors Mediating After-School Participation and Delinquency

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A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of requirements for the degree of
Master of Science

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ABSTRACT

Factors Mediating After-School Participation and Delinquency

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Utilizing Social Control Theory, this study explores the role of participation in After School Programs, mentoring relationships, and commitment to school in reducing adolescent delinquency. This study uses local survey data of 556 youth attending Boys and Girls Clubs collected from 2010-2012. The negative binomial regression results indicate that increased club attendance is associated with reduced delinquency. This effect is mediated by the presence of a mentor and by the youths' commitment to school.

Keywords: adolescence, after school programs, delinquency, mentor, school commitment, social bonds, social control theory

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Introduction

Adolescent delinquency is an ongoing subject of research and debate (Abbey et al. 2006; Gottfredson and Soulé 2005; Gottfredson et al. 2004). Research examining the causes of adolescent delinquency has addressed factors as varied as urban environment (Hanlon et al. 2009), economic disadvantage, and single parenthood (Abbey et al. 2006). The cost of early delinquent activity tends to follow adolescents into adulthood (Hanlon et al. 2009). Early drug use, for instance, can result in usage later in life, as well as low educational attainment and other delinquent behaviors (Abbey et al. 2006). Adolescent delinquency most often occurs in the hours following school when youth are regularly unsupervised (Hanlon et al. 2009; Gottfredson et al. 2004). As a result, after school programs (ASPs), in an effort to reduce adolescent delinquency, seek to engage youth in productive activities during these critical hours.

ASPs are designed to reduce delinquency by increasing attachment to school and by increasing interaction with mentors and pro-social peers through structured activities where adolescents can interact (Hanlon et al. 2009; Gottfredson et al. 2004). These programs have been shown to reduce violent behavior, heavy drinking, sexual intercourse (Hawkins et al. 1999), and delinquency (Gottfredson et al. 2004). Two of the pathways through which ASPs reduce delinquent behavior in youth are mentoring-type relationships youth form with adult leaders and increased school effort (Molnar et al. 2008; Gottfredson et al. 2004). This study examines the role of mentoring relationships and school effort in mediating the relationship between ASPs and delinquency.

Literature Review

Delinquency

Disruptive behavior in children tends to continue into adolescence and adulthood and is the best predictor of adult criminality (Broidy 2003). Furthermore, the intensity of delinquency

tends to increase with time (Hanlon et al. 2009; Gruber & Machamer 2000). These two trends have led researchers to examine the characteristics of youth and structural factors influencing the initiation of delinquent behavior and the intensification of already delinquent youth. For example, youth coming from higher socioeconomic status backgrounds are less likely to engage in delinquent behavior (Jessor 1995). Individual-level characteristics such as poor self-esteem and low self-control tend to result in higher levels of delinquent behavior (Beaver et al. 2009; Chapple 2005; Donnellan 2005). However, these characteristics are often influenced by youth interactions with others. For instance, youth who experience peer rejection also tend to have increased interaction with other troubled youth and report higher levels of delinquent behavior (Chapple 2005; Dishion, McCord, and Poulin 1999). Youth that experience parental violence or criminality, have poor attachment to parents, are a member of a gang, and live in disorganized neighborhoods or experience racism in their neighborhood all report higher levels of delinquency (Hoeve 2012; Reingle 2012; Fletch 2004; Herrenkohl 2000). Youth involvement in schools can also influence delinquent outcomes as youth having low academic performance, low school commitment, and low educational aspirations also report higher levels of delinquency (Wong 2005; Herrenkohl 2000).

Hirshi's (1969) Social Control Theory explains why some youth engage in delinquent activities whereas others do not. According to Hirshi's theory, all people have a natural inclination toward deviance as the most immediate means to satisfy desires (Horney, Osgood, and Marshall 1995; Wiatrowski, Griswold, and Roberts 1981; Hirshi 1969). Deviance is reduced by social bonds with others which represent an individual's stake in society (Brezina 1998). Without these bonds individuals have less to lose and greater freedom to engage in deviant acts (Brezina 1998).

Social bonds have four major components: attachment, commitment, involvement, and belief (Jang 1999; Wiatrowski et al. 1981; Hirshi 1969). Attachment refers to the emotional ties that youth form with significant others. Attachment typically centers on the family.

Commitment is characterized by well-defined goals including aspirations to go to college and attaining a high-status job. Involvement includes participation in activities that are socially valued. Finally, belief includes acceptance of the validity of the central social-value system.

As adolescents spend the majority of their time interacting with institutions, attachment, commitment, involvement, and belief tend to increase. Three institutions that impact social bonds in particular are family, school and peers (Jang 1999). Individual-level differences or changes in the influence of these institutions alter the amount of formal or informal control resulting in differing levels of delinquent activity across spans of time. For instance, delinquency tends to decrease when adolescents have a strong attachment to parents, high commitment to school, weak attachment to anti-social peers, and strong attachment to pro-social peers (Jang 1999; Thornberry et al. 1991; Thornberry 1987). Having a quality relationship with an intimate partner also decreases anti-social behavior (Meeus 2004).

The importance of each of these institutions and attachments tend to change over time resulting in rapid changes in delinquent behavior (Jang 1999; Thornberry et al. 1991; Horney et al. 1995). The importance of parents tends to be strong in early adolescence and decline over time (Jang 1999). Commitment to school, on the other hand, tends to be weak in early adolescence and increases into middle adolescence before declining in later adolescence. Finally, attachment to delinquent peers is strong in early adolescence and grows stronger in middle and late adolescence (Jang 1999).

ASP Participation

One of the primary purposes for which ASPs have been designed is to occupy youth in the hours following school during which delinquency peaks (Rorie et al. 2011). Having extra hours of structured activities with supportive staff has been found to provide numerous benefits to participants. For instance, ASPs have been linked to reduced childhood depressive symptoms (Fire, Vitulano, and Preddy 2011). Studies examining programs that include parents found that parenting styles improved and parents were more involved in their children's education (Webster-Stratton, Reid, and Hammond 2001). Direct improvements to youth's academic learning have been a particularly recurring result of participation in ASPs. The results of one study indicate that participation is associated with improved self-reported grades, and enjoyment and effort in school (Mahatmya and Lohman 2011). Studies of African American youth find participation to be linked to improved GPAs, teacher evaluations, and academic achievement on test scores (Hanlon et al. 2009; Martin et al. 2007). Academic benefits even extend to young children (Pierce, Bolt, and Vandell 2010).

In addition to these benefits, participation in ASPs tends to reduce delinquent outcomes, particularly externalizing behavior problems (Fire et al. 2011; Mahatmya and Lohman 2011; Martin et al. 2007; Pancer et al. 2007; Crank, Crank, and Christensen 2003; Webster-Stratton, Reid, and Hammond 2001; Hawkins et al. 1999). Webster-Stratton and colleagues (2001) report that high risk children who attend ASPs are significantly more likely to fall into normal behavior ranges compared to control groups. Hawkins and colleagues (1999) report that participation reduces lifetime prevalence of violent criminal behavior, heavy drinking, sexual intercourse, and pregnancy. ASP participation is also linked to reduced levels of truancy, favorable attitudes

toward cheating and smoking and can significantly buffer youth from the effects of poor neighborhood settings (Fire et al. 2011; Mahatmya and Lohman 2011).

The overall effect size of ASP participation on delinquency outcomes tends to be small across studies (Hanlon et al. 2009; Crank et al. 2003). In their study of urban African American youth, Hanlon and colleagues (2009) suggest that the small effect sizes may be the result of underreporting by delinquent youth since few of the youth admitted to the program reported engaging in delinquent activities. Crank and colleagues (2003) suggest that the limited effectiveness of ASPs may be the result of a small number of participants receiving large benefits while most experience little to no decline in delinquency. The study also hypothesizes that interventions may occur at a time when delinquency is at a peak. Subsequent declines in delinquency may be the result of a regression toward the mean. Furthermore, delinquency may not be a cumulative experience as suggested in the delinquency literature (Crank et al. 2003).

The structure of ASPs can also affect the levels of delinquency observed during studies (Gottfredson, Cross, and Soulé 2007). Programs with large amounts of unstructured time tend to be less effective because it is during unstructured time that peers are most likely to reinforce deviant behavior (Rorie et al. 2011). These findings are not unanimous, however. In some studies the degree of structured time is unrelated to delinquency or in some cases result in higher levels of delinquency due to increased interaction with anti-social peers (Gottfredson, Cross, and Soulé 2007; Gottfredson et al. 2004).

Another possible reason for these ambiguous findings may be that ASPs have less of an effect at an individual level than a community level. For example, communities with a larger number of youth organizations are associated with lower levels of exposure to community violence (Gardner and Brooks-Gunn 2009). Lower levels of community violence, in turn, are

associated with decreased juvenile delinquency (Buka et al. 2001). In particular, neighborhoods with more organizations and services targeting youth tend to have lower levels of aggressive youth behavior (Molnar et al. 2008). These results occur even if youth do not actively participate in the organizations (Gardner and Brooks-Gunn 2009).

Within the context of Social Control Theory, ASPs are most likely to foster social bonds by increasing commitment, involvement, and attachment. Commitment is increased as youth perform better in academic settings and gain aspirations to attend college and attain high-status jobs (Wiatrowski et al. 1981). One of the regular findings from ASP research is increased attachment and effort in school as well as improved academic outcomes (Mahatmya and Lohman 2011; Pierce et al. 2010; Hanlon et al. 2009; Martin et al. 2007). Involvement is increased as youth participate in structured activities provided by ASPs. This may explain why programs with large amounts of unstructured time are less effective at reducing delinquency as it leaves youth ample time to be involved with other anti-social youth (Rorie et al. 2011; Gottfredson et al. 2007). Attachment is increased as youth form bonds with adult and pro-social peer mentors that can provide resources and support that in turn reinforce commitment, involvement and even belief in the central social-value system.

Mentoring Relationships

One of the mechanisms through which ASPs may influence delinquency is through these mentoring relationships or attachments that youth develop with adults. Studies of mentoring relationships find that they yield many of the same benefits that ASP participation does. Youth who report having a mentor experience modest academic benefits, increased school competency, and improved self-perception of academic ability though there is no evidence of effect on classroom effort or social/personal well-being (Herrera et al. 2011; Langhout, Rhodes, and

Osborne 2004; Keating et al. 2002). Mentoring is significantly related to helping others, school attitudes, career attitudes, situational satisfaction, interpersonal relations, motivation, and skill competence and development with the largest effects observed for helping behaviors and school attitudes (Eby et al. 2008). School enjoyment and school efficacy improvements persist even when exposed to peers who socially discouraged school achievement (Zimmerman, Bingenheimer, and Notaro 2002). Although having a mentor may not be related to reduced anxiety or depression, cross-aged mentoring has been effective for improving self-esteem (Eby et al. 2008; Karcher 2005; Zimmerman et al. 2002). Evidence suggests that having a mentor may even affect the chances youth have of finding and keeping employment (McDonald et al. 2007).

Similar to ASP participation, mentoring relationships can have a negative effect on adolescent delinquency. Meta-analytic studies show that having a mentor is negatively related to withdrawal behaviors and intentions, deviance, substance use, and psychological stress and strain (Eby et al. 2008). Youth with mentors exhibit less destructive behavior toward themselves and others (Keating et al. 2002), less maladaptive behavior (Jackson 2002), lower overall levels of problem behavior, lower marijuana use, and lower levels of non-violent delinquent behaviors (Zimmerman et al. 2002).

Like ASPs, the effect sizes for these outcomes are small with larger effect sizes being observed for social, academic, and occupational benefits, than for problem behaviors (Eby et al. 2008). One proposed explanation for this phenomenon is that many at-risk youth do not see themselves as such, or are dishonest about feelings and behaviors, resulting in underreported levels of delinquency (Keating et al. 2002). Effects may also be small because mentors represent only a single positive influence against many possible negative influences (Jackson 2002). Eby and colleagues (2008:263) indicate that "...an individual's decision to engage in substance use

may be strongly influenced by peer pressure, access to drugs, parental role modeling, making it difficult for a mentoring relationship to have substantial impact.” Furthermore, adolescents may have different understandings of what constitutes a mentor or may misperceive characteristics of their mentor. This is particularly the case with younger mentors wherein protégés overestimate misconduct in the mentor resulting in high delinquency (Greenberger, Chen, and Beam 1998). These findings may also explain why certain kinds of peer mentoring result in increased prevalence of drug use and other illicit activities (Philip and Henry 1996).

The degree of structure between the mentor and protégé can also impact benefits gained through the relationship. Mentoring relationships that have moderate levels of structured activity yield the highest benefits whereas relationships with high levels of structured activities combined with unconditional acceptance by the mentor tend to displace other intimate relationships for the youth including parents (Langhout et al. 2004). However, highly structured activities also tend to improve social, psychological, and academic outcomes. Dubois and colleagues (2002) find that mentoring program outcomes vary based on a number of factors including whether implementation is monitored, if the mentor comes from a background of a helping role or profession, if ongoing mentor training is provided, the degree of structured activities for mentors and youth, the amount of parental support and involvement, and whether the youth is at-risk or not.

Hirshi’s (1969) Social Control Theory predicts that delinquency is deterred when individuals develop social bonds with others thereby increasing the costs of deviance. As a result, factors that predict the strength of mentoring relationships may also determine the degree to which they inhibit delinquency. High costs on the mentor tend to decrease mentor commitment and high benefits strengthen it (Allen and Eby 2008). Mentor commitment in turn

is highly predictive of relationship quality between the mentor and the youth and relationship sustainability. Relationship quality also alters the relationship of mentoring to other important outcomes (Cavell et al. 2009). Mentoring relationships are more likely to form based on the youth's perceived ability and potential compared to the perceived need for help (Allen, Poteet, and Russell 2000). Mentors are also more likely to create a relationship with youth that they view to be highly or moderately proactive (Hu, Thomas, and Lance 2008). Protégés with a strong achievement orientation (a desire to take on and overcome challenges) and avoidance orientation (desire to avoid failure) tend to benefit more from mentoring relationships with achievement orientation being the most significant predictor (Hirschfeld, Thomas, and Lankau 2006). Perceived attitudinal similarity between the mentor and the youth is also a key predictor of both mentor relationship formation and satisfaction across all types of mentoring (Ensher, Grant-Vallone, and Marelich 2002). Higher levels of empathy between mentor and youth are associated with higher levels of intimacy and confiding (Philip and Henry 1996).

These findings may explain in part the small effect size between mentoring and delinquency as the youth who are most delinquent are most likely to incur high costs on their mentors and are most likely to be viewed as having low potential, are the least likely to be proactive, are unlikely to have a strong achievement and avoidance orientation, and are thus the least likely to enter into mentoring relationships. Attitudinal similarity may also vary widely across groups of youth, lessening the effectiveness of programs.

Studies of the effects of ASPs and mentoring relationships on youth outcomes show many of the same academic and social benefits including modest decreases in delinquency. One possible reason for this is that both ASPs and mentors create and strengthen bonds by increasing attachments to pro-social significant others, commitment to education, involvement in

worthwhile conventional activities, and by increasing belief. Past studies suggest that positive peer associations and attachment to pro-social others may even be mediating mechanisms explaining the relationship between ASP participation and delinquency (Molnar et al. 2008; Gottfredson et al. 2004).

For example, a study by Molnar and colleagues (2008) examined the relationship between ASPs and non-parental mentors but reported that youth only benefit from these relationships in the presence of neighborhood resources. A study by Herrera and colleagues (2011) examining Big Brother/Big Sister programs reported no relationship between ‘special adults’ and delinquent outcomes. However, the short duration of interaction, structured context, and instrumental nature of the relationship make it unlikely that mentors qualified as a special non-parental adult. Meta-analytic studies of youth mentoring programs like the Boys and Girls Clubs find that participation is significantly related to withdrawal behavior, school attitudes, and interpersonal relations which in turn may predict delinquent outcomes (Eby et al. 2008).

Commitment to School

Social Control Theory predicts that as a youth’s commitment to school increases their likelihood of being delinquent decreases (Jang 1999; Thornberry 1996). The relationship between school commitment and delinquency often mediates the relationship between both ASPs and mentoring relationships and delinquency (Gottfredson et al. 2004). For instance, Hanlon and colleagues (2009) report that ASP participation has no direct effect on behavior, but that the observed effect is mediated through education. Education is effective against both problem behavior and substance abuse outcomes. A study by Zigler, Taussig, and Black (1992) indicates that intervention programs emphasizing reduced school failure and improved individual competency also affect delinquency. Although most mentoring studies do not examine

commitment to school as a mediating variable between having a mentor and delinquent outcomes, numerous studies find that students reporting having a mentor, also report academic benefits and increased commitment to school (Herrera et al. 2011; Eby et al. 2008; Langhout, Rhodes, and Osborne 2004; Keating et al. 2002; Zimmerman et al. 2002).

Other Background Characteristics Predictive of Delinquency

Research indicates that age, gender, race and ethnicity and family structure all predict the likelihood and prevalence of adolescent delinquency. With respect to age, studies show that delinquent behaviors are more likely to begin in childhood and tend to continue in to adolescence and adulthood and are less likely to begin during adolescence (Broidy 2003). This finding is consistent for both violent and nonviolent delinquency and is the best predictor of adult criminality. Other studies show that violent adolescent crime tends to disappear by the late teens and early 20s (Reingle 2012).

In addition to age, gender is strongly related to adolescent delinquent outcomes with males being more likely to engage in delinquency than females (Mahatmya and Lohman 2011; Lahey 2006; Broidy 2003; Herrenkohl 2000; Jessor 1995). Specifically, males are more likely to engage in behaviors such as drinking, delinquency, marijuana use, and sexual intercourse (Jessor 1995). The gap between males and females tends to increase over time (Herrenkohl 2000).

An adolescent's race, family characteristics, and family structure also influence delinquent outcomes. Youth who are Hispanic or Black tend to have higher levels of delinquency than whites (Jessor 1995). Youth who come from disrupted families and families with poor family management and family conflict tend to increase the levels of reported delinquency (Fletch 2004; Juby 2001; Herrenkohl 2000).

Drawing upon this literature, I examine the relationship between adult mentoring relationships at Boys and Girls Clubs and delinquency outcomes. Boys and Girls clubs are a nation-wide after school program. The primary mission of the club is “to enable all young people, especially those who need us most, to reach their full potential as productive, caring, responsible citizens” (BGCA 2012). Boys and Girls clubs strive to improve academic success, character and citizenship, and commitment to a healthy lifestyle. The clubs provide structured activities to develop character and leadership skills, enhance education and career knowledge, health and life skills, artistic skills, and physical fitness. Clubs goals include helping youth exhibit better academic performance, avoid risky behaviors, participate more frequently in healthy pro-social activities, and display behaviors that indicate development of character and leadership traits. Boys and Girls clubs focus primarily on low income youth. Accordingly, membership costs are kept very low with additional funding provided for youth and parents who cannot afford regular membership fees.

Several key characteristics differentiate Boys and Girls Clubs from other ASPs such as Big Brother/Big Sister programs. Boys and Girls Clubs have full-time paid staff that are placed over certain age groups of youth. Staff members are screened with criminal background checks and receive extensive ongoing training. While the youth that participate at the club come from a variety of backgrounds, Boys and Girls Clubs target youth from disadvantaged backgrounds. Participation is encouraged from youth as young as 4 to as old as 18. Long-term participation combined with paid staff allows for relationships to develop between staff and youth that may not occur with volunteer-based programs such as Big Brother/Big Sister programs.

Building upon the research of Herrera and colleagues (2011), I examine mentoring relationships as a mediating mechanism between ASP participation and delinquency. Applying

Social Control Theory, I also examine the role of commitment to education as a second mediating factor between ASP participation and delinquency using data from participants at Boys and Girls Clubs in a large metropolitan area of a major western city. My primary hypotheses are as follows:

Hypothesis 1: Attending Boys and Girls Clubs is negatively associated with delinquency.

Hypothesis 2: The relationship between club attendance and delinquency is mediated by the presence of a mentor.

Hypothesis 3: The relationship between mentoring and delinquency is mediated by increased school commitment.

Thus, utilizing data from participants in the Boys and Girls Clubs after school programs, I first model the relationship between club participation and delinquency; second I consider the mediating influence of developing mentored relationships with staff, followed by mediating role of school commitment. In addition, I include controls for age, race and ethnicity, gender, parental education, and family structure.

Data and Methods

Sample and Data Collection

Data for this study were collected using survey research, which allowed for collecting data from the entire local club population. Because the study examines beliefs and behaviors, a survey design is the ideal method. Cross sectional data were collected at three time points to increase response rates and minimize missing data and were collected from children and teens attending clubs only in a given month period during the year. Surveys were collected once per year during 2010, 2011, and 2012.

The form of the survey was a self-administered questionnaire completed by youth attending the Boys and Girls club and was distributed and overseen by club staff. Adequate time

was provided by staff members to allow participants to complete the survey thoroughly. Data collection occurred at each of the clubs over the course of several weeks allowing youth with less frequent attendance to complete the survey.

The survey was developed by the Boys and Girls club to assess a variety of youth outcomes including types and frequency of activities participated in at the club, delinquency, academic attitudes, moral attitudes, attitudes toward staff members, and self-esteem.

The population for this study is youth attending Boys and Girls Clubs in the greater metropolitan area of a major western city. Participants from all four clubs in the area were surveyed. The average total number of attendees from all clubs is about 350.

Measurement Validity and Reliability

The delinquency outcome variable is measured by a five item count measure that includes self-reported levels of skipping school/truancy, alcohol consumption, smoking, shoplifting/theft, and drug use. The items used to measure delinquency are as follows: *In the past month, I skipped or cut school; In the past month, other than for religious purposes, I drank wine, beer, or hard liquor; In the past month, I smoked cigarettes; In the past month, I took something from a store without paying for it; In the past month, I smoked marijuana or used drugs.* All of the items were scaled as 0 = *No*, 1 = *Yes*. These measures are frequently used in both ASP and mentoring literature as standard measures of delinquency (Herrera et al. 2011; Gottfredson et al. 2004; Zimmerman et al. 2002; Greenberger et al. 1998). Responses for each respondent are summed into a total delinquency count variable. The Cronbach's Alpha for this measure is .801.

Club mentoring relationships are measured using seven items. These items are: *Club staff care about what happens to me; I can talk to staff about things that are bothering me; Staff*

at the club try to be fair with kids; Staff at the club understand my interests; Someone at the club helps me finish my homework; Club staff and members help me feel proud of myself; and There is someone at the club who will listen to me. Response options for all items are 1= *NO, strongly disagree*, 2= *no, disagree*, 3= *yes, agree*, and 4= *YES, strongly agree*. The Cronbach's Alpha for mentoring is .850. Responses were summed into a mentoring construct.

Frequency of club attendance is assessed by asking respondents, *On average, how many days do you come to the club each week?* Response options are 0= *Once a week or less*, 1= *2 or 3 days a week*, and 2= *4 or more days a week*. Prior research indicates that other measures of attendance at ASPs such as length of club membership and the number and types of activities provided by the club do not significantly predict delinquent outcomes (Gardner and Brooks-Gunn 2009; Gottfredson et al. 2004).

School commitment is measured by asking respondents, *Now thinking back over the past year, how often did you try to do your best work in school?* Response options are 0= *Never*, 1= *Seldom*, 2= *Sometimes*, 3= *Often*, 4= *Almost Always*.

Age, gender, family structure, parental education, and race/ethnicity are used as control variables. Age is counted in years. Gender is coded as a dummy variable with 0= Male and 1= Female. Family Structure is measured as dummy variables based on the following categories: lives with both parents, lives with step parents, lives with one parent, other family structure. Two parent households is the reference category. Parental education is measured as dummy variables based on the following categories: completed grade school or less, some high school, completed high school, some college, completed college. Completed high school is the reference category. Race/ethnicity is measured as dummy variables based on the following categories: White, Black, Hispanic, other. White is the reference category.

Missing data is addressed using multiple imputation for the delinquency variables, mentoring relationship variables, club participation, school commitment and parental education using the respondent's age, race, gender, and family structure to impute missing values. Five iterations were performed. Research indicates that multiple imputation is effective when low numbers of iterations are performed especially when the level of missing data is small (Graham, Olchowski, and Gilreath 2007; Rubin 1996; Rubin and Schenker 1986).

Estimation Procedure

Descriptive statistics are presented first for the variables in the model. The dependent variable for the model is a count of delinquent acts committed by club attendees which under normal circumstances calls for Poisson regression. However, one assumption of Poisson regression is that the mean of the dependent variable equals the variance. The variance for delinquency (1.05) is nearly double the mean (.62) showing clear overdispersion. Negative binomial regression addresses overdispersion by including an extra parameter in its estimation and also addresses the lack of independence between observations (UCLA Statistical Consulting Group n.d.; Hoffmann 2004). The output of negative binomial regression provides IRRs or incident rate ratios. These ratios are the predicted rate of the dependent variable, in this case delinquency, occurring during the given time period, which is in the last month.

Model one tests hypothesis one by examining the relationship between ASP attendance and delinquency. Model two and three test hypothesis two and three by adding mentoring relationships and school commitment respectively. Model four includes controls to test for spuriousness.

Results

Descriptive statistics for delinquency, club attendance, mentoring relationship, school effort and control variables are presented in table 1. On average, youth at the boys and girls clubs report committing less than one of the five delinquent acts measured in the data, though the standard deviation (1.03) shows a large amount of variation in reported delinquency. The most commonly reported delinquent acts are truancy and stealing, with 25 percent and 14 percent of the sample reporting engaging in these at least once in the past month. The average attendance at the club is between 2 and 3 days a week, and 4 or more days a week. Most of the youth report having strong mentoring relationships, but like delinquency the standard deviation (4.63) indicates wide variation in mentoring relationships. On average, youth at the club report that they often try to do their best work in school.

Table 1 about here

Just under one third of the sample are white (31 percent), with another 35 percent reporting Hispanic ethnicity. Seventeen percent of the sample are black and eighteen percent other races. The average age for the sample is 11.9 years old. Fifty-eight percent are male. Most of the youth in the sample report coming from a two-parent households (42 percent) or from a single-parent household (36 percent). Just under one third of households have a parent who completed college or graduate school (32 percent). One quarter of the sampled youth indicate that a parent has not completed high school. Delinquency is not particularly prevalent in the sample, but club attendance, mentoring, and school effort are commonly reported. The next section examines the relationship between club attendance and delinquency with a focus on the mediating role of mentoring and school effort on multivariate results.

Incidence rate ratios from the multivariate results are presented in table 2. Model 1 tests hypothesis 1 by comparing reported delinquency to the frequency of club participation.

Consistent with hypothesis 1, each unit increase in club participation is associated with a 21 percent decrease in the rate of reported delinquency. Thus the more youth attend the club each week, the fewer delinquent acts they report engaging in.

Table 2 about here

Model 2 tests hypothesis 2 by including mentoring relationships as a possible mediator. Consistent with hypothesis 2, the presence of a mentor at the club is negatively associated with delinquent outcomes with each unit increase on the mentoring scale being associated with a 3 percent decrease in the rate of reported delinquency, controlling for club participation. Also consistent with hypothesis 2, the association between club participation and delinquency is mediated by mentoring from the staff. .

Model 3 tests hypothesis 3 by including school commitment as a possible mediator. As predicted by Social Control Theory, school commitment is negatively associated with delinquency. Each unit increase in school commitment is associated with a 26 percent reduction in the rate of reported delinquency, controlling for mentoring relationships and club participation. Adding school commitment to the model further reduces the association between club participation and delinquency as it mediates the association. However, once school commitment is included in the model, the influence of mentoring is reduced to non-significance, suggesting that the association between mentoring and delinquency is mediated further by increased school commitment.

Model 4 tests for spuriousness in the model by including age, gender, parental education, family structure, and race as controls. After adding controls, school commitment is associated

with a 22 percent reduction in the rate of reported delinquency in the full model. Mentoring relationships and club participation remain non-significant. Age is positively associated with delinquent outcomes with each year increase in age being associated with a 10 percent increase in the rate of reported delinquency. Hispanics are associated with a 58 percent increase in the rate of reported delinquency compared to Whites.

The results show some support for Hypothesis 1, 2, and 3. In particular, club attendance is associated with reduced delinquency, and the effect of participation is mediated by the presence of a mentor and school commitment. Further, the results suggest that the primary mediating factor is school commitment. Increased club attendance is related to greater mentoring, and increased commitment to school, which in turn is associated with less delinquency.

Discussion

Social Control Theory postulates that people have a natural inclination toward deviance as the most immediate means of satisfying desires and that deviance can be reduced by creating bonds between individuals and society (Brezina 1998; Horney et al. 1995; Wiatrowski et al. 1981; Hirshi 1969). ASPs provide a unique setting wherein pro-social bonds in the form of attachments to natural mentors, pro-social peers, and educational institutions and anti-social bonds with other delinquent youth can form in the same locale (Mahatmya and Lohman 2011; Eby et al. 2008; Gottfredson et al. 2007; Gottfredson et al. 2004). These bonds create attachment, commitment, involvement, and belief which act in turn to reduce delinquent outcomes or peer bonds that can encourage delinquency (Rorie et al. 2011; Gottfredson et al. 2007; Jang 1999; Wiatrowski et al. 1981; Hirshi 1969).

My first hypothesis was that that attendance at the Boys and Girls Clubs will be negatively related to delinquent outcomes. Consistent with research from Mahatmya and Lohman (2011) and Fire and colleagues (2011) the results show that increased club attendance is associated with reduced delinquency. Social Control Theory predicts that increased club attendance reduces delinquency primarily through involvement by providing structured conventional activities with socially valued objectives (Wiatrowski et al. 1981; Hirshi 1969). Club attendance simply occupies the time that youth would otherwise use to engage in deviant behavior (Hanlon et al. 2009). However, club attendance also provides opportunities to form attachments to other delinquent youth which may explain the small effect size (Gottfredson et al. 2007; Gottfredson et al. 2004).

One commonly reported result of club attendance at Boys and Girls clubs is the formation of attachments with informal mentors. These mentors influence youth primarily through commitment by helping youth develop well-defined educational goals (Wiatrowski et al. 1981; Hirshi 1969). Attachment, involvement, and belief in society's value system may also be influenced directly or indirectly by mentors. My second hypothesis was that bonds between youth and mentors mediate the relationship between club attendance and delinquency. This hypothesis is also supported by the data. Consistent with the findings of Zimmerman and colleagues (2002) having a mentor was associated with reduced levels of delinquency. These findings also concur with past research findings of Eby and colleagues (2008) who also found that mentors reduced deviance and substance use in youth. These findings contrast with the findings of Greenberger, Chen, and Beam (1998) as well as Philip and Henry (1996) who found that the presence of a mentor resulted in increased delinquency. Importantly, the results of this study contrast with the results of Herrera and colleagues (2011) that found mentoring

relationships in the Big Brother/Big Sister program did not mediate the relationship between program participation and delinquency.

To test whether mentors primarily influence youth through commitment, I further hypothesized that commitment to school would mediate the relationship between club participation and delinquent outcomes. Consistent with past research, increased school commitment decreased reported delinquency (Hanlon et al. 2009; Gottfredson et al. 2004; Zigler et al. 1992). However, in addition, I found that the relationship between mentoring and delinquency was also mediated by school commitment.

The results of this study have several important implications for ASPs and mentoring. These findings show that the delinquency-reducing effects of ASPs may actually be derived from the relationships that youth form with adult mentors within the program rather than the structured activities provided by the program. However, few studies have examined how these relationships affect program outcomes (Herrera et al. 2011; Eby et al. 2008; Molnar et al. 2008). Mentoring relationships in turn may be most beneficial when they aid youth in improving their academic success and attachment to educational institutions. As a result, ASPs may be more effective in reducing adolescent delinquency by creating environments where mentoring relationships can form. Additionally, mentors can best influence youth by providing academic support that will create stronger bonds to academic institutions, possibly by having ASPs and mentors operate at school facilities and in cooperation with school staff and administrators. Implementing these changes will shift the focus on ASPs away from merely occupying youth during peak delinquency hours toward a more active program of delinquency reduction.

Implications and Suggestions for Future Work

This study has several important limitations that should be noted. First the measured used in this study do not directly measure mentoring relationships but ask about respondent's relationship with staff members. The small sample size and limited geographic spread of the sample makes inferences to the larger national population problematic. The sample is not longitudinal which makes causal relationships impossible to infer. The data is based on self-reports which may underestimate the total amount of delinquency. Furthermore, delinquent youth may have less consistent attendance at the club than non-delinquent youth which may also result in underreporting.

Evidence from the current study suggests that ASP research and mentoring research may be more closely related than is currently reported. Much of the research to date has been conducted in less than ideal programs that do not allow for long-term informal mentorships to form (Herrera et al. 2011). More research is needed to further explain the relationship between these two fields and to assist ASPs in their mission to reduce delinquency and foster academic achievement among at-risk youth.

References

- Abbey, Antonia, Angela J. Jacques, Lenwood W. Hayman, and Joanne Sobeck. 2006. "Predictors of Early Substance Use among African American and Caucasian Youth from Urban and Suburban Communities." *Merrill-Palmer Quarterly Journal of Developmental Psychology* 52:305-326.
- Aizer, Anna. 2004. "Home Alone: Supervision after School and Child Behavior." *Journal of Public Economics* 88:1835-1848.
- Allen, Tammy D. and Lillian T. Eby. 2004. "Factors Related to Mentor Reports of Mentoring Functions Provided: Gender and Relational Characteristics." *Sex Roles* 50:129-139.
- Allen, Tammy D. and Lillian T. Eby. 2008. "Mentor Commitment in Formal Mentoring Relationships." *Journal of Vocational Behavior* 72:309-316.
- Allen, Tammy D., Mark L. Poteet, and Joyce E. A. Russell. 2000. "Protégé Selection by Mentors: What Makes the Difference?" *Journal of Organizational Behavior* 21:271-282.
- Beaver, Kevin, Eagle Shutt, Brian Boutwell, Marie Ratchford, Kathleen Roberts, J.C. Barnes. 2009. "Genetic and Environmental Influences on Levels of Self-Control and Delinquent Peer Affiliation." *Criminal Justice and Behavior* 36:41-60.
- Boys and Girls Clubs of America. 2012. "Who We Are." Retrieved October 10, 2012. (<http://www.bgca.org/whoweare/Pages/Mission.aspx>)
text citation: (BGCA 2012)
- Brezina, Timothy. 1998. "Adolescent Maltreatment and Delinquency: The Question of Intervening Processes." *Journal of Research in Crime and Delinquency* 35:71-99.
- Broidy, Lisa, Daniel Nagin, Richard Tremblay, John Bates, Bobby Brame, Kenneth Dodge, David Fergusson, John Horwood, Rolf Loeber, Robert Laird, Donald Lynam, Terrie

- Moffitt, and Gregory Pettit. 2003. "Developmental Trajectories of Childhood Disruptive Behaviors and Adolescent Delinquency: A Six-Site, Cross-National Study." *Developmental Psychology* 39:222-245.
- Buka, Steven L., Theresa L. Stichick, Isolde Birdthistle, and Felton J. Earls. 2001. "Youth Exposure to Violence: Prevalence, Risks, and Consequences." *Am J Orthopsychiatry* 71:298-310.
- Chapple, Constance. 2005. "Self-Control, Peer Relations, and Delinquency." *Justice Quarterly* 22:89-106.
- Crank, John, Joe Crank, and Wendy Christensen. 2003. "The Ada Sheriff's Youth Foundation: The Development of a Decentralized Youth Program." *Journal of Criminal Justice* 31:341-350.
- Dishion, Thomas, Joan McCord, Francois Poulin. 1999. "When Interventions Harm: Peer Groups and Problem Behavior." *American Psychologist* 54:755-764.
- Donnellan, Brent, Kali Trzensniewski, Richard Robins, Terrie Moffitt, and Avshalom Caspi. 2005. "Low Self-Esteem is Related to Aggression, Antisocial Behavior, and Delinquency." *Psychological Science* 16:328-335.
- DuBois, David L., Bruce E. Holloway, Jeffrey C. Valentine, and Harris Cooper. 2002. "Effectiveness of Mentoring Programs for Youth: A Meta-Analytic Review." *American Journal of Community Psychology* 30:157-197.
- Eby, Lillian T., Tammy D. Allen, Sarah C. Evans, Thomas Ng, and David L. DuBois. 2008. "Does Mentoring Matter? A Multidisciplinary Meta-Analysis Comparing Mentored and Non-Mentored Individuals." *Journal of Vocational Behavior* 72:254-267.

- Ensher, Ellen A., Elisa J. Grant-Vallone, and William D. Marelich. 2002. "Effects of Perceived Attitudinal and Demographic Similarity on Protégés' Support and Satisfaction Gained from Their Mentoring Relationships." *Journal of Applied Social Psychology* 32:1407-1430.
- Fire, Paula J., Michael L. Vitulano, and Teresa M. Preddy. 2011. "The Positive Impact of Attending a Community-Based Youth Program on Child Depressive Symptoms." *Journal of Community Psychology* 39:804-814.
- Fletcher, Anne, Laurence Steinberg, Meeshay Williams-Wheeler. 2004. "Parental Influences on Adolescent Problem Behavior: Revisiting Stattin and Kerr." *Child Development* 75:781-796.
- Flores, Lisa Y. and Ezemenari M. Obasi. 2005. "Mentors' Influence on Mexican American Students' Career and Educational Development." *Journal of Multicultural Counseling and Development* 33:146-164.
- Gardner, Margo and Jeanne Brooks-Gunn. 2009. "Adolescents' Exposure to Community Violence: are Neighborhood Youth Organizations Protective?" *Journal of Community Psychology* 37:505-525.
- Gottfredson, Denise C., Stephanie A. Gerstenblith, David A. Soule, Shannon C. Womer, and Shaoli L. Lu. 2004. "Do After School Programs Reduce Delinquency?" *Prevention Science* 5:253-266.
- Gottfredson, Denise C., and David A. Soule. 2005. "The Timing of Property Crime, Violent Crime, and Substance Use among Juveniles." *Journal of Research in Crime and Delinquency* 42:110-120.

- Graham, John W., Allison E. Olchowski. 2007. "How Many Imputations are Really Needed? Some Practical Clarifications of Multiple Imputation." *Prevention Science* 8:206-213.
- Greenberger, Ellen, Chuansheng S. Chen, and Margaret R. Beam. 1998. "The Role of "Very Important" Non-Parental Adults in Adolescent Development." *Journal of Youth and Adolescence* 27:321-343.
- Gruber, Enid, and Ann Machamer. 2000. "Risk of School Failure as an Early Indicator of Other Health Risk Behavior in American High School Students." *Health, Risk & Society* 2:59-68.
- Haddad, Eileen, Chuansheng S. Chen, and Ellen Greenberger. 2011. "The Role of Important Non-Parental Adults (VIPs) in the Lives of Older Adolescents: A Comparison of Three Ethnic Groups." *Journal of Youth and Adolescence* 40:310-319.
- Hanlon, Thomas E., Betsy D. Simon, Kevin E. O'Grady, Steven B. Carswell, and Jason M. Callaman. 2009. "The Effectiveness of an After-School Program Targeting Urban African American Youth." *Education and Urban Society* 42:96-118.
- Hawkins, J. David, Richard F. Catalano, Rick Kosterman, Robert Abbott, and Karl G. Hill. 1999. "Preventing Adolescent Health-Risk Behaviors by Strengthening Protection During Childhood." *Archives of Pediatrics & Adolescent Medicine* 153:226-234.
- Herrenkohl, Todd, Eugene Maguin, Karl Hill, David Hawkins, Robert Abbott, and Richard Catalano. 2000. "Developmental Risk Factors for Youth Violence." *Journal of Adolescent Health* 26:176-186.
- Herrera, Carla, Jean B. Grossman, Tina J. Kauh, and Jennifer McMaken. 2011. "Mentoring in Schools: An Impact Study of Big Brothers Big Sisters School-Based Mentoring." *Child Development* 82:346-361.

- Hirschfeld, Robert R., Chris H. Thomas, and Melenie J. Lankau. 2006. "Achievement and Avoidance Motivational Orientations in the Domain of Mentoring." *Journal of Vocational Behavior* 68:524-537.
- Hirschi, Travis. 1969. "Causes of delinquency." Berkeley, California: University of California Press.
- Hoeve, Machteld, Geert Stams, Claudia Put, Judith Dubas, Peter Laan, and Jan Gerris. 2012. "A Meta-Analysis of Attachment to Parents and Delinquency." *Journal of Abnormal Child Psychology* 40:771-785.
- Hoffmann, John P. 2004. *Generalized Linear Models*. Boston: Pearson Education Inc.
- Horney, Julie, Wayne Osgood, and Ineke Marshall. 1995. "Criminal Careers in the Short-Term: Intra-Individual Variability in Crime and its Relation to Local Life Circumstances." *American Sociological Review* 60:655-673.
- Hu, Changya Y., Kecia M. Thomas, and Charles E. Lance. 2008. "Intentions to Initiate Mentoring Relationships: Understanding the Impact of Race, Proactivity, Feelings of Deprivation, and Relationship Roles." *Journal of Social Psychology* 148:727-744.
- Jackson, Yo. 2002. "Mentoring for Delinquent Children: An Outcome Study with Young Adolescent Children." *Journal of Youth and Adolescence* 31:115-122.
- Jang, Sung. 1999. "Age-Varying Effects of Family, School, and Peers on Delinquency: A Multilevel Modeling Test of Interactional Theory." *Criminology* 37:643-685.
- Jessor, Richard, Jill Van Den Bos, Judith Vanderryn, Frances Costa, and Mark Turbin. 1995. "Protective Factors in Adolescent Problem Behavior: Moderator Effects and Developmental Change." *Developmental Psychology* 6:923-933.

- Juby, Heather, David Farrington. 2001. "Disentangling the Link between Disrupted Families and Delinquency." *British Journal of Criminology* 41:22-40.
- Karcher, Michael J. 2005. "The Effects of Developmental Mentoring and High School Mentors' Attendance on Their Younger Mentees' Self-Esteem, Social Skills, and Connectedness." *Psychology in the Schools* 42:65-77.
- Keating, Lisa M., Michelle A. Tomishima, Sharon Foster, and Michael Alessandri. 2002. "The Effects of a Mentoring Program on At-Risk Youth." *Adolescence* 37:717-734.
- Lahey, Benjamin, Carol Van Hulle, Irwin Waldman, Joseph Rodgers, Brian D'Onofrio, Steven Pedlow, Paul Rathouz, Kate Keenan. 2006. "Testing Descriptive Hypotheses Regarding Sex Differences in the Development of Conduct Problems and Delinquency." *Journal of Abnormal Child Psychology* 34:737-755.
- Langhout, Regina D., Jean E. Rhodes, and Lori N. Osborne. 2004. "An Exploratory Study of Youth Mentoring in an Urban Context: Adolescents' Perceptions of Relationship Styles." *Journal of Youth and Adolescence* 33:293-306.
- Lorson, Reed. 2006. "Positive Youth Development, Willful Adolescents, and Mentoring." *Journal of Community Psychology* 34:677-689.
- Mahatmya, Duhita and Brenda Lohman. 2011. "Predictors of Late Adolescent Delinquency: The Protective Role of After-School Activities in Low-Income Families." *Children and Youth Services Review* 33:1309-1317.
- Martin, Don, Magy Martin, Suzanne S. Gibson, and Jonathan Wilkins. 2007. "Increasing Prosocial Behavior and Academic Achievement among Adolescent African American Males." *Adolescence* 42:689-698.

- McDonald, Steve, Lance D. Erickson, Monica K. Johnson, and Glen H. Elder. 2007. "Informal Mentoring and Young Adult Employment." *Social Science Research* 36:1328-1347.
- Meeus, W., S. Branje, G.J. Overbeek. 2004. "Partners and Partners in Crime: a Six-Year Longitudinal Study on Changes in Supportive Relationships and Delinquency in Adolescence and Young Adulthood." *Journal of Child Psychology and Psychiatry* 45:1288-1298.
- Molnar, Beth E., Magdalena Cerda, Andrea L. Roberts, and Steven L. Buka. 2008. "Effects of Neighborhood Resources on Aggressive and Delinquent Behaviors among Urban Youths." *American Journal of Public Health* 98:1086-1093.
- Pancer, S. Mark, Michael Pratt, Bruce Hunsberger, and Susan Alisar. 2007. "Community and Political Involvement in Adolescence: What Distinguishes the Activists from the Uninvolved?" *Journal of Community Psychology* 35:741-759.
- Philip, Kate and Leo B. Hendry. 1996. "Young People and Mentoring - Towards a Typology?" *Journal of Adolescence* 19:189-201.
- Pierce, Kim M., Daniel M. Bolt, and Deborah L. Vandell. 2010. "Specific Features of After-School Program Quality: Associations with Children's Functioning in Middle Childhood." *American Journal of Community Psychology* 45:381-393.
- Reingle, Jennifer, Wesley Jennings, and Mildred Maldonado-Molina. 2012. "Risk and Protective Factors for Trajectories of Violent Delinquency among a Nationally Representative Sample of Early Adolescents." *Youth Violence and Juvenile Justice* 10:261-277.
- Rorie, Melissa, Denise C. Gottfredson, Amanda Cross, Denise Wilson, and Nadine M. Connell. 2011. "Structure and Deviancy Training in After-School Programs." *Journal of Adolescence* 34:105-117.

- Rubin, Donald B. 1996. "Multiple Imputation after 18+ Years." *Journal of the American Statistical Association* 91:473-489.
- Rubin, Donald B., Nathaniel Schenker. 1986. "Multiple Imputation for Interval Estimation from Simple Random Samples with Ignorable Nonresponse." *Journal of the American Statistical Association* 81:366-374.
- Thornberry, Terence. 1987. "Toward an Interactional Theory of Delinquency." *Criminology* 25:863-891.
- Thornberry, Terence, Alan Lizotte, Marvin Krohn, Margaret Farnworth. 1991. "Testing Interactional Theory: An Examination of Reciprocal Causal Relationships among Family, School, and Delinquency." *Journal of Criminal Law and Criminology* 82:3-35.
- UCLA: Statistical Consulting Group. n.d. Stata Data Analysis Examples Negative Binomial Regression. Los Angeles, California. Retrieved March 11, 2013 (http://www.ats.ucla.edu/stat/mult_pkg/faq/general/citingats.htm)
text citation: (UCLA Statistical Consulting Group n.d.)
- Wadsworth, Martha E. and Lauren E. Berger. 2006. "Adolescents Coping with Poverty-Related Family Stress: Prospective Predictors of Coping and Psychological Symptoms." *Journal of Youth and Adolescence* 35:57-70.
- Webster-Stratton, Carolyn, M. Jamila Reid, and Mary Hammond. 2001. "Preventing Conduct Problems, Promoting Social Competence: A Parent and Teacher Training Partnership in Head Start." *Journal of Clinical Child Psychology* 30:283-302.
- Wiatrowski, Michael, David Griswold, Mary Roberts. 1981. "Social Control Theory and Delinquency." *American Sociological Review* 46:525-541.

- Wong, SiuKwong. 2005. "The Effects of Adolescent Activities on Delinquency: A Differential Involvement Approach." *Journal of Youth and Adolescence* 34:321-333.
- Zagar, Robert J., Kenneth G. Busch, and John R. Hughes. 2009. "Empirical Risk Factors for Delinquency and Best Treatments: Where do we go from here?" *Psychological Reports* 104:279-308.
- Zigler, Edward, Cara Taussig, and Kathryn Black. 1992. "Early-Childhood Intervention-a Promising Preventative for Juvenile Delinquency." *American Psychologist* 47:997-1006.
- Zimmerman, Marc A., Jeffrey B. Bingenheimer, Paul Notaro. 2002. "Natural Mentors and Adolescent Resiliency: A Study with Urban Youth." *American Journal of Community Psychology* 30:221-243.

Table 1 Descriptive Statistics, Factors Influencing Delinquency among Members of Boys and Girls Club, 2010-2012

Characteristics	Mean or %	Stddev	Range
<i>Dependent Variable</i>			
Delinquency	0.62	1.03	0 to 5
<i>Key Independent Variable</i>			
Club attendance	1.61	0.65	0=once a week or less to 2=4 or more days a week
<i>Mediating Factors</i>			
Mentor Relationship Scale	23.0	4.63	0=no mentoring relationships to 28=strong mentoring relationships
School effort	3.33	1.02	0=never to 4=always
<i>Control Variables</i>			
Race			
White	31%		
Hispanic	35%		
Black	17%		
Other race	18%		
Gender			
Male	58%		
Female	42%		
Family Structure			
Two parent	42%		
Single Parent	36%		
Step Family	12%		
Other Family Type	10%		
Age	11.9	3.0	6 to 19
Parent Education			
Grade school or less	10 %		
Some high school	15%		
Completed high school	23%		
Some college	19%		
Completed college or grad school	32%		
[N]	[556]		

Source: Boys and Girls Club Survey Data, 2010-2012 [United States]

Table 2: Rate Ratios for Factors Predictive of Adolescent Delinquency among Boys and Girls Club Attendees, 2010-2012.

Characteristics	Model 1 IRR	Model 2 IRR	Model 3 IRR	Model 4 IRR
Constant	.89	1.77	2.25*	.44
Club participation	.79*	.83	.93	1.00
<i>Mediating Factors</i>				
Mentor		.97*	.99	.99
School Commitment			.74***	.78***
<i>Control Variables</i>				
Age				1.10***
Female				1.04
Parent Education				
Grade School or less				----
Some High School				.87
High School Diploma				.79
Some College				.73
Completed College				.66
Family Structure				
Two Parent				----
Step Parents				.93
Single Parent				1.18
Other				1.35
Race				
White				----
Black				1.29
Hispanic				1.58**
Other Race				2.23**
F-Value	4.75*	4.66**	9.04***	4.14***
[N]	556	556	556	556

Source: Boys and Girls Club data Salt Lake City area, 2010-2012

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