



Deciphering the Relationship Between Extracurricular Activities and Delinquency Among Teenage Youth

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Abstract

The link between involvement in extracurricular activities and delinquent conduct may be impacted by internal factors, such as self-control. The current study utilizes data from a sample of delinquent youth to examine the two-way relationship between self-control, participation in extracurricular activities, and antisocial behaviors. Our findings indicated that individuals exhibiting lower self-control appeared to gain from heightened involvement in extracurricular activities (i.e., increased variety and intensity of experiences) in extracurricular activities. However increased participation in extracurricular activities was found to correlate with a rise in delinquent behaviors among those exhibiting higher established levels self-control. This relationship is examined through the theoretical lens of personality trait theory, which suggests that youth experience shifts in the superordinate personality dimensions of Engagement and Self-Control as youth mature developmentally.

Keywords Self-Control · Delinquency · Extracurricular Activities · Antisocial Behavior · Engagement

Introduction

Several adults assert that their participation in school-related extracurricular activities during their youth and teenage years steered them away from engaging in criminal activities (Salguero, 2009). Such activities, which can range from athletics and music to leadership roles, volunteering, or academic pursuits, are widely thought to promote prosocial behavior. This prosocial behavior is seen as a safeguard, mitigating the potential risks that might otherwise lead to involvement in criminal conduct. Furthermore, extracurricular activities within school environments hold significant

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relevance in the development of adolescents. These experiences provide opportunities for young individuals to experiment with different roles, exercise personal influence over their surroundings, and develop a sense of independence, as highlighted by Darling (2005). Continuing, research indicates that structured, cooperative extracurricular activities in schools offer platforms for focused, interactive social participation, contributing to numerous beneficial outcomes for the overall wellness of young people (Gilman et al., 2004). A substantial amount of research on this subject aligns with these findings, though the underlying processes explaining this relationship differ (Mahoney & Cairns, 1997). The mechanisms range from an increase in positive/prosocial relationships to simply occupying one's time which could limit opportunity. A diminished level of opportunity could potentially lessen the adverse effects stemming from internal factors, such as self-control (Hay & Forrest, 2008).

Some studies have also found that this generally positive link between extracurricular activities in deviant behavior may not hold true for all types of negative behavior (Burton & Marshall, 2005). Moreover, recent studies indicate that extracurricular activities might have certain negative impacts, particularly associated with delinquency and other problematic behaviors involving substance abuse, such as drugs and alcohol (Farineau & McWey, 2011). In a similar context, research exploring the link between adolescent employment and antisocial behaviors discovered that intensive employment during the teenage years correlates with delinquency and substance abuse. However, this relationship may be influenced or moderated by other factors that change over time (Paternoster et al., 2003). Considering the ambiguity around how extracurricular activities correspond with offending behavior, the present research seeks to examine these relationships in greater detail by examining the direct effects of school-based extracurricular activities on general and aggressive offending outcomes and test for the relevance of self-control as a moderator of this relationship among a sample of justice-involved youth (JIY). This predisposition is determined by personality traits such as Engagement and Self-Control (refer to Olson, 2005), within a group of judicially processed young individuals. We hypothesize that the effect of extracurricular activities may fluctuate based on the levels of Self-Control and Engagement. The outcomes of this study could potentially identify those individuals who would gain the most from involvement in extracurricular activities.

Literature Review

A longstanding belief suggests that participation in extracurricular activities might decrease engagement in delinquent behavior, as these activities are predominantly viewed as fostering prosocial conduct (Mahoney & Cairns, 1997). Initial research predominantly validated the prosocial advantage of extracurricular activities, particularly among middle-class, white males (Landers & Landers, 1978). Indeed, since the 1970s, upper-middle-class youths have shown increased involvement in various extracurricular activities, while the trend has been the opposite for working-class adolescents. This hints at an "engagement gap," indicative of the widening income disparity that influences patterns in social mobility (Snellman et al.,

2015, p. 194). Other studies have suggested that more structured activities (e.g., band, orchestra, chorus, plays, and musicals) yield a better-associated reduction in delinquency (Mahoney, 2000; Zill et al., 1995). Osgood et al. (1996); Osgood & Anderson (2004) found that unstructured socializing with peers, absent of adult authority supervision, increases opportunities for deviance or delinquency. The benefit of certain activities may be contingent on peer influence, particularly in terms of engaging in risky behavior. For instance, Mahoney (2000) discovered an interplay between participation in extracurricular activities at schools and social networks. The arrest rates for boys at high risk depended on the proportion of their peers involved in after-school activities within their social network. Mahoney (2000) also noted that boys who participated in unstructured activities (i.e., youth recreation center activities with irregular schedules and minimal adult supervision) and showed lesser involvement in structured activities (like music, sports, theater) had an increased likelihood of antisocial behavior. Consequently, the type, intensity, and duration of participation might influence the impact these activities have on involvement in delinquency. For example, isolated, unstructured activities (like playing video games) requiring little or no adult supervision might have more negative effects compared to structured, interactive activities that necessitate adult guidance and team-building skills (like athletics or performing arts; Gilman et al., 2004). While the impact of different types of activities on deviant behavior are acknowledged, due to data limitations in the present study, the current study will only focus on structured extracurricular activities.

Pathways to Delinquent Behavior and Theoretical Considerations

Many theoretical explanations support the link between prosocial behavior and a reduction in antisocial behavior. These theories include Hirschi's (1969) social bonding theory, Akers' social learning theory (1985), and Moffitt's (1993) dual taxonomy. Social bonding theory suggests that an individual who has strong bonds to a group and secure associations with peers, among others, will be less likely to engage in delinquent activity (Hirschi, 1969). In accordance with social bonding theory, attachment involves an emotional attachment to another, and when such a relationship exists and commitment and involvement to that relationship endures, a person is less likely to engage in delinquency for fear of jeopardizing the longevity of that relationship (Hirschi, 1969). The emotional and rational bonds forged through engagement in extracurricular activities may deter youth from the temptations of delinquency or encourage them to desist from further involvement in antisocial behaviors. Social learning theory specifies that individuals learn to engage in delinquency by being exposed to delinquent peers and then by adapting values that encourage antisocial behavior and crime (Akers, 1985). Therefore, social learning theory indicates that peer groups matter, but prosocial peers will be more likely to prevent engagement in delinquency; hence, the type of peer group matters (Akers, 1985). Extracurricular involvement creates the opportunity for lasting prosocial peer networks to be formed. Moffitt (1993) proposed that there were two types of offender groups—individuals who participate in criminality throughout their lives (i.e., life course-persistent) and individuals who are only temporally involved in

criminal behavior during adolescent/teenage years (i.e., adolescence-limited). One key factor dictating which pathway is taken is the development of prosocial activities (Moffitt, 1993). Life-course persisters tend to be void of these prosocial activities for a variety of reasons (e.g., difficulties stemming from early neuropsychological, cognitive, and/or biological deficits coupled with risky environmental factors; Moffitt, 1993). Conversely, adolescence-limited offenders often develop prosocial behaviors through turning points in their life course trajectories that allow for them to desist from delinquency involvement as they mature developmentally and associate more with positive peer groups (Moffitt, 1993). Meaningful engagement in extracurricular activities may present an opportunity for such turning points to occur.

Unlike the theories described above, Gottfredson and Hirschi's (1990) General Theory of Crime posits that low Self-Control, when combined with the opportunity to engage in antisocial behavior, is the only personality trait underpinning all delinquent and antisocial behavior (see also Cauffman et al., 2005). Thus, Gottfredson and Hirschi (1990) argue that a youth's level of Self-Control determines delinquency involvement rather than engagement or disengagement in prosocial activities, positive peer associations, or any other personality characteristics that may be strengthened through social involvement in extracurricular activities (Cauffman et al., 2005). On the other hand, social learning theory and Moffitt's (1993) dual taxonomy, among other theoretical frameworks, permit other psychological (e.g., personality) factors to be considered (Cauffman et al., 2005). However, the exact mechanism through which self-control operates in this context remains unclear. On the other hand, social learning theory and Moffitt's (1993) dual taxonomy, among other theoretical frameworks, permit other psychological (e.g., personality) factors to be considered (Cauffman et al., 2005). Additionally, the Big Five personality traits that have emerged from personality inventories and are applicable cross-culturally include: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (i.e., emotional stability) (Costa & McCrae, 1992; Olson, 2005).

Olson (2005) postulates two superordinate personality constellations based on factor analyses of the Big Five traits, which include: (1) Engagement (i.e., Extraversion and Openness to Experience) and (2) Self-Control (i.e., Agreeableness, Conscientiousness, and Emotional Stability). Under this perspective, Olson (2005) asserts, "the most basic personality trait characteristics are, in broad terms, the extent to which individuals (a) actively engage their inner and outer worlds, and (b) exert self-control" (p. 1698). As such, individuals can be either engaged or disengaged and have either low self-control or high self-control, which can both affect involvement in antisocial behavior (Olson, 2005). According to Olson (2005), the Engagement higher-order factor "encompasses positive affective states, openness to a variety of novel and imaginative experiences, and social and interpersonal involvement" (p. 1692). The superordinate personality dimensions of Engagement (engaged versus disengaged) should be interpreted as personal growth versus personal constriction, a dimension emphasized by personal growth theorists (Digman, 1997; Olson, 2005). Therefore, the fusion of "Extraversion, with descriptors such as outgoing, adventurous, and active, and Openness to Experience, with descriptors of creative, imaginative, and open to new ideas and change, is seen as involving personal growth," (Olson, 2005, p. 1690) "an enlargement of self by a venturesome encounter with life and its attendant risks, by being open to all experience, especially

new experience'' (Digman, 1997, p. 1250). Thus, the degree of engagement with prosocial activities reflects the presence of the personality dimensions related to Extraversion and Openness to Experience. Those with high levels of engagement exhibit deep and purposive involvement in activities and lead to more positive affective states, life experiences, self-concepts, and adaptive benefits (Olson, 2005). Likewise, the Self-Control higher-order factor encompasses self-restraint, carefulness, and inhibition to antisocial behaviors at an interpersonal level (Agreeableness), emotional level (Emotional Stability), and task-oriented level (Conscientiousness) (Olson, 2005). As a result, those with higher levels of Self-Control are more likely to achieve personal and professional success and happiness in life and are less likely to develop personal and social problems, such as addiction, delinquency, academic failure, and the like (Olson, 2005). Thus, Olson (2005) suggests that Engagement personality traits may be empirically related to positive and negative outcomes for youth much like Self-Control traits are. Extracurricular activities are largely considered a prosocial behavior that strengthens social ties (Schaefer et al., 2011), builds skills, cultivates character, and fosters commitment (Eccles et al., 2003), which are consistently associated with reduced criminal involvement (Akers, 1985). Participation in prosocial behaviors can provide numerous positive influences, and juveniles with higher levels of Engagement traits are likely to demonstrate increased proclivity to intense and vital involvement in such activities allowing for greater personal growth beyond mere development of impulse restraint alone (Olson, 2005).

Extracurricular Activities and Delinquency

A wide array of studies has explored the relationship between the participation in school-based extracurricular activities and juvenile delinquency. Indeed, research has indicated that there are various benefits these youth can realize by participating in extracurricular activities beyond avoiding delinquency, particularly those involving athletic activity (Mokabane et al., 2014). Numerous studies have found positive correlations between extracurricular activity participation and encouraging outcomes in terms of avoiding delinquency and academic performance (Crispin et al., 2017; Eisman et al., 2018; Fredricks et al., 2006; Landers & Landers, 1978; Mahoney, 2000; Meier et al., 2018). More recent research suggests that these positive outcomes manifested themselves via interactions with prosocial peers (Eisman et al., 2018). Additionally, positive outcomes in the form of reduced rates of early dropout and criminal arrest were dependent on the participation of a youth's social network (Mahoney, 2000). While previous research has suggested that participation in extracurricular activities have positive long-term impacts in terms of academic success and civic engagement for up to two years after participation (Fredricks & Eccles, 2006), more recent literature suggests these outcomes do not persist over an extended period (Crispin et al., 2017). The effectiveness of extracurricular activities in terms of positive development has been found to be different based on the type of activity in which the youth is involved (Feldman & Matjasko, 2005; Himelfarb et al., 2014).

In terms of delinquency, the extant research has generally shown youth participation to be associated with rather positive outcomes as measured by school

performance and refraining from delinquency. Many of the studies that find participation in extracurricular activities to be associated with negative outcomes have focused on athletic activities (see Kreager, 2007). While athletic participation appears to have relatively unique impacts compared to other types of school-based extracurricular activities, Himelfarb et al. (2014) found participation in the arts to be most beneficial to youth. A recent meta-analysis found strong positive association between sport participation and alcohol use in fourteen out of the seventeen sample cases, although lower use of other illegal substances, especially those other than marijuana, was also revealed (Kwan et al., 2014). Such outcomes of partaking in risky behavior have been observed for both males and females (Eccles et al., 2003). Notably, a meta-analysis by S nderlund et al. (2014) found increased rates of violence among sport participants, though this study focused on collegiate athletes. Similarly, Burton and Marshall, (2005) found that participation in sports was associated with increased involvement in aggressive behavior.

Other studies have made findings that can be classified as more mixed in terms of the relationship between extracurricular participation and desirable youth outcomes (Merkel, 2013). Darling (2005), somewhat like the findings made in the realm of athletic participation, found that while positive outcomes were observed in academic terms, the same could not be said for alcohol use and depression among youth participating in school-based extracurricular activities. Dworkin and Larson (2006) found that while participation was mostly good for youth, negative experiences did occur and these could be attributed to adult leaders and, particularly, to negative peers and poor peer group interactions. Studies have struggled to find the precise mechanisms by which youth who engage in extracurricular activities generally have more positive outcomes than those who do not. In summary, these findings have certainly not been uniform across all studies and exhibit variations based on gender, socio-economic status, and the types or total number of activities in which youth engage.

The Current Study

Prior research has suggested that there are a multitude of factors that could increase one's level of risk. These factors range from parental crime involvement, exposure to delinquent peers, poor parenting, neighborhood disorganization, family disruption, and academic difficulties. Each of these risk factors may contribute to or be an artifact of internalized factors such as one's level of self-control or externalized factors such as one's engagement or disengagement in activities. Individuals with low self-control have consistently been found to be more susceptible to participating in anti-social behavior. In fact, self-control theory has consistently been cited as an inverse correlate with criminal and analogous behaviors (Cauffman et al., 2005). The current study uses a sample of justice-involved teens to examine how individual differences may be accounted for by considering internal factors, specifically one's level of impulse control as it relates to a person's engagement or disengagement in extracurricular activities and subsequent involvement in delinquency. Previous research has utilized internal factors, such as an individual's level of self-control, to elucidate disparities among various crime correlates and similar behaviors (Brown, 2019). These

factors have been found to moderate the relationship between protective factors (i.e. exposure to violence) and subsequent behavior. Self-control has also been identified for having some moderating potential in explaining various other correlates of crime (Brown, 2019). Likewise, individuals who are disengaged, characterized by apathy and detachment (i.e., low engagement traits), are more likely to miss opportunities for successful adaptation to shifting social environments. They are also less likely to seize life experiences that could stimulate motivation and inspire personal success and growth (Olson, 2005). The present research utilizes a sample of justice involved teenagers to explore how internal factors might influence a person's participation or lack thereof in after-school activities, and the resulting implications on their subsequent engagement in delinquent behavior.

Method

Participants

The data for this study are from a longitudinal study conducted over a seven-year period beginning in late 2000, called the Pathways to Desistance (Pathways study) project. The sample consisted of 1,354 teens from Philadelphia, Pennsylvania or Phoenix, Arizona who were at some point incarcerated in the juvenile justice system for a serious offence. The current sample has distinct advantages, such as a wider variation in our key independent and dependent variables. Even though the sample solely includes individuals with a felony conviction, a significant portion does not reoffend at any particular time point. This allows us to evaluate the effect of our key independent variables on reoffending within a group of youth at risk. We contend that this sample selection enables us to aim our analyses, and subsequent policy implications, more precisely at an at-risk demographic. The ages ranged from 14 to 18. Eligible crimes were all felony offences, less serious property crimes, misdemeanor weapons charges, and sexual assault offenses. The measures utilized in the pathways study were selected after receiving decades of validation from prior research.

The design of the current study utilizes each wave of the publicly available Pathways study. Specifically, the independent and control variables—which are defined in the next section—are taken at baseline while the outcome variables (offending) are computed from subsequent waves. This approach staggers the dependent to ensure that there is a temporal order established. The descriptive statistics can be seen in Table 1. Utilizing the data from the Pathways study in this manner will ensure temporal order, as the dependent variable is measured after the independent and control variables.¹

¹ Due to the limitations and the complexity of running nonlinear models in the current study, these models utilized the default method in Stata 16 for dealing with missing data in regression modeling. The default technique in Stata is equation-wise deletion, but given the simplicity of the models in the study this equation-wise deletion equates to list-wise deletion. However, a number of comparison models were computed to ensure there were no systematic issues with the missing data, which ensured this method was appropriate for dealing with missing data. The comparison regression models were found to be substantively similar to the presented findings.

Table 1 Descriptive statistics

Measure	M	Skewness	SD	Range
Age	16.54	−0.26	1.1	14–18
Gender (female = 0, male = 1)	0.86	−2.13	0.34	0–1
White (non-White = 0, White = 1)	0.20	1.48	0.40	0–1
Black (non-Black = 0, Black = 1)	0.41	0.35	0.49	0–1
Hispanic (non-Hispanic = 0, Hispanic = 1)	0.34	0.70	0.47	0–1
Offending	4.59	0.52	3.43	0–13
Number of extracurricular activities	0.81	1.71	1.11	0–8
Time in extracurricular activities	2.40	2.68	3.99	0–35
Neighborhood	2.35	0.96	0.75	1–4
Peer delinquency	2.32	0.40	0.93	1–5
Exposure	0.70	−0.62	0.28	0.07–1
Self-control	5.74	0.16	1.71	2–10

Measures

Dependent Variables

General Offending The general offending variable in the current study is a variety score of the 20 offending measures in waves 2 through 11. Assembling measures from different time points has better criterion validity than self-report measures from a single time point (Paschall et al., 2001). Also, variety scales that count the type of offences rather than number of occurrences are common in criminological research and they tend to correlate with other measures of antisocial behavior, report a similar proclivity for antisocial behavior, and can be more accurate in terms of recall when compared to self-reported frequency counts (Sweeten, 2012). The measure for offending collected by the Pathways to Desistance project measured self-reported involvement in antisocial and illegal activities (Huizinga et al., 1991). The offending measure in the Pathways Study consisted of 24 items measured at each wave reporting offending for the previous ~6 months.² Participants were asked whether they had partaken in the specific item (0 = No; 1 = Yes). Due to the exclusion of items in the Pathways Study, the offending measure in the current study utilized a variety score of the 20 items over waves 2 through 11.

² Four of the items from this scale were excluded from the current study for two reasons. First, two of the items (“Broke into car to steal” and “Went joyriding”) were added to the Pathways questionnaire after many of the participants had already completed their baseline or six-month follow-up interview. The introduction of these two items resulted in a large amount of missing data. To avoid complications and inconsistencies, these two items are excluded. The second two items (“Forced someone to have sex” and “Killed someone”) excluded from this analysis were masked for confidentiality in the data set provided by ICPSR. One noted limitation of this study is that by excluding rape and murder, violent antisocial behavior might be underestimated.

Independent Variables

Extracurricular Activities Involvement The total number of extracurricular activities in which an adolescent is involved is an important determinant in terms of positive outcomes. Early research suggests that the more activities adolescent was involved in yielded more positive the outcomes, but more recent research has revealed that this relationship may have a threshold effect. This measure attempts to capture the level of engagement or disengagement youth exhibit through the intensity of involvement in extracurricular activities. This measure was created from the baseline self-reported measure of involvement extracurricular activities. Respondents indicated whether they had partaken in the specific activities (e.g., student government, athletic teams, cheerleading, band, school clubs, National Honor Society, newspaper/yearbook, Theater.) These indicators were summed to create the total involvement measure.

Time Spent in Extracurricular Activities The second independent variable is designed to capture extracurricular activity engagement by measuring the amount of time a respondent self-reported involvement in extracurricular activities. This was measured using the number of hours spent each week involved in the activities from the measure of extracurricular activity involvement. This measure, likewise, attempts to capture aspects of youth engagement or disengagement by assessing the duration of involvement in extracurricular activities. Therefore, current study accounts for the concept of engagement (i.e., seeking a variety and intensity of experiences; see Olson, 2005) by measuring both the total number of extracurricular activity involvement as well as the hours per week involved in extracurricular activities.

Low Self-control There are several ways to capture the concept of self-control (see Piquero et al., 2000; Tittle et al., 2004). Much of the measurement debate is centered in whether self-control is better measured attitudinally or behaviorally. Self-control in the current study is measured attitudinally by utilizing the Weinberger Adjustment Inventory (WAI, Weinberger & Schwartz, 1990) measure included in the Pathways Study. The WAI has shown to be reliable and valid (Feldman & Weinberger, 1994) with some studies suggesting it rivals other personality assessment inventories, such as the Minnesota Multiphasic Personality Inventory (see Huckaby et al., 1998). The current study uses measures from the restraint dimension of the WAI. The specific facets of the WAI, which resemble self-control, as defined as the ability to delay gratification, are impulse control and suppression of aggression. To measure impulse control and suppression of aggression participants read various statements and were asked to rate how accurate these statements were to their life. These statements were ranked on a scale of 1 to 5 (1 = False to 5 = True). After some necessary reverse coding, higher scores were indicative of greater levels of the construct (i.e., more impulse control and suppression of aggression).

The measure for impulse control was a scale of eight items, which yielded a Cronbach's alpha of 0.76.³ These items consisted of statements aimed at addressing the ability to regulate spontaneous acts (e.g., "I do things without giving them much thought"). Suppression of aggression is another component of the restraint dimension of the WAI, and consisted of seven items (e.g., "People who make me angry better watch out") and was utilized to assess the respondent's ability to deal with anger without hurting others. Suppression of aggression yielded a Cronbach's alpha of 0.78. The composite measure for impulse control and suppression of aggression (IC/SA) was a yielded a Cronbach's alpha of 0.77.

Control Variables

Due to the nature of the data we are unable to measure the adolescent behavior prior to participation in group activities thus it is necessary to control for several known factors which relate to delinquent behavior. These factors included as control variables in the study are age, sex, race, ethnicity, neighborhood conditions, peer delinquency and time spent outside a detention facility.

Demographic Controls

Age Age is a common control variable included in this type of research due to its relationship with offending. Much of the extant research demonstrates that age is a strong predictor of antisocial behavior, which reflects that many individuals commit crimes between the ages of 15 and 21 (Hirschi & Gottfredson, 1983). Considering the consolidated nature of the dependent variables, which incorporate data from all subsequent waves following the baseline measure, the participant's age at the point of baseline is utilized. A limitation of this measure is that it is merely a proxy for age as it is not measuring age at the time in which the crime was committed.

Sex Sex is a commonly used control variable in criminological research as males typically commit and self-report more crime than females (Steffensmeier & Allan, 1996). Also, some theorists have suggested that there may be gender differences among the predictors of violent behavior (Daigle et al., 2007). In addition, some research has suggested that females participate in more extracurricular activities than boys, with the exception of athletics (Eccles & Barber, 1999; Mahoney & Cairns, 1997). One limitation of this sample is that there are significantly fewer females than males in this sample (i.e., 1170 males and 184 females).

Race and Ethnicity Race and ethnicity have problematically been used as common statistical controls in prior literature to account for discrepancies in offending. Prior literature suggests that people of color are more likely to be exposed to criminogenic

³ The generally accepted cutoff for Cronbach's alpha is .7 (see Lance et al., 2006).

factors in an attempt to elucidate differential offending patterns without accounting for how racial stratification enables systems of structured inequality (Henne & Shah, 2015). These factors will be carefully considered when interpreting any significant relationships.

Neighborhood Persons who reside in less than desirable living conditions have less opportunity to have desirable employment, promising education opportunities, and/or resources for or access to extracurricular activities, which could increase the possibility deviant behavior (Snellman et al., 2015). The current study uses a measure of neighborhood condition to serve as a proxy for socioeconomic status. No other measures for social class were available. The items in this measure are self-reported physical disorder in the respondent's neighborhood (e.g., cleanliness of the street, graffiti on walls of buildings), and social disorder in the respondent's neighborhood (e.g., adults fighting or arguing, people using drugs). This measure consists of 21 items to which participants respond to on a 4-point Likert scale ranging from "Never" to "Often," with higher scores indicating greater disorder within the community. The scale yielded high internal consistency with a Cronbach's alpha of 0.94.

Peer Delinquency Peer delinquency as measured in the Pathways study is a subset of 12 items which were originally developed for the Rochester Youth Study (Thornberry et al., 1994). These items capture the prevalence of friends who engage in 12 types of deviant behavior (e.g., "How many of your friends have sold drugs?"). The mean rating of friends involved in these behaviors is computed as the peer delinquency measure. Peer delinquency is necessary to be controlled for to account for peer influence and isolate the specific relationship between self-control and other criminological factors (Burton et al., 1994).

Exposure Time The longitudinal nature of the dependent variable and an offender sample is utilized, time while incarcerated is controlled for. Individuals who spend more time outside a correctional facility have more opportunity to commit crime and analogous behaviors. To compute this measure participants reported the number of days they were in a detox/drug-treatment program, psychiatric hospital, residential treatment program, or secure institution. The portion of time a participant spends outside of these facilities is measured at each wave. From these wave measures a total proportion of total time outside of these facilities is created.

Analytic Strategy

Several studies utilize a staged approach for their statistical strategy, a method also employed in our current study. Given the definitions of the variables provided earlier, we construct a series of Tobit regression models. These models examine the interaction between self-control and the extent of participation in extracurricular activities on reported antisocial behavior, aiming to test their combined effect on general offending. We will also create an additional interactive Tobit regression model to explore any potential interaction effects between self-control and time

Table 3 Interaction between time spent in extracurricular activities and self-control on offending

Offending	Coef	Std. Err	t	P> t	[95% Conf	Interval]
Time on ECA	-0.2376**	0.0892	-2.66	0.008	-0.4127	-0.0626
Self-Control	-0.5777***	0.0728	-7.93	0.000	-0.7206	-0.4348
Time*Self-control	0.0417**	0.0154	2.71	0.007	0.0115	0.0719
Peer delinquency	1.1039***	0.1234	8.94	0.000	0.8616	1.3461
Neighborhood	-0.0008	0.1434	-0.01	0.995	-0.2823	0.2807
Gender	1.4488***	0.2943	4.92	0.000	0.8714	2.0263
Black	-1.1750***	0.2577	-4.56	0.000	-1.6807	-0.6692
Hispanic	-1.0480***	0.2550	-4.11	0.000	-1.5484	-0.5476
Age	-0.3583***	0.0876	-4.09	0.000	-0.5301	-0.1864
Exposure	-2.2866***	0.3914	-5.84	0.000	-3.0546	-1.5186
Constant	12.2457	1.6293	7.52	0.000	9.0487	15.4427
Number of observations	= 1,049					
LR χ^2	= 367.17***					
Pseudo R ²	= 0.0682					
Log likelihood	= -2516.19					

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

spent on extracurricular activities on subsequent antisocial behavior. The use of Tobit regression is suitable as it accounts for zero-clustering and the positive skew found in self-reported delinquency responses.⁴ Also, preliminary analysis did not reveal any significant issues associated with multicollinearity.

Results

Table 1 displays the descriptive statistics. The sample is predominantly male and relatively mixed in terms of race/ethnicity. Notably, number of extracurricular activities and time spent in extracurricular activities was positively skewed. Indeed, more than half of respondents did not engage in any extracurricular activities and only about one-quarter spent more than four hours per week in them. On average, respondents reported committing between four and five types of offenses; this should not come as much of a surprise considering the offending nature of the sample.

It must be emphasized that we conducted two separate analyses. The first one focusses on number of extracurricular activities and can be seen in Table 2 and Fig. 1, while the second one looks at the amount of time spent in the extracurricular activities, which is discussed later and can be seen in Table 3 and Fig. 2.

⁴ Tobit regression is particularly beneficial and is often favored over other regression methods in several scenarios. These include situations where a substantial number of values are clustered at a lower limit, when the dependent variable can either be zero or a positive figure, and when the dependent variable has a known maximum or minimum value with a considerable concentration of values at these extremes. Each of these factors are characteristic of our dependent variables.

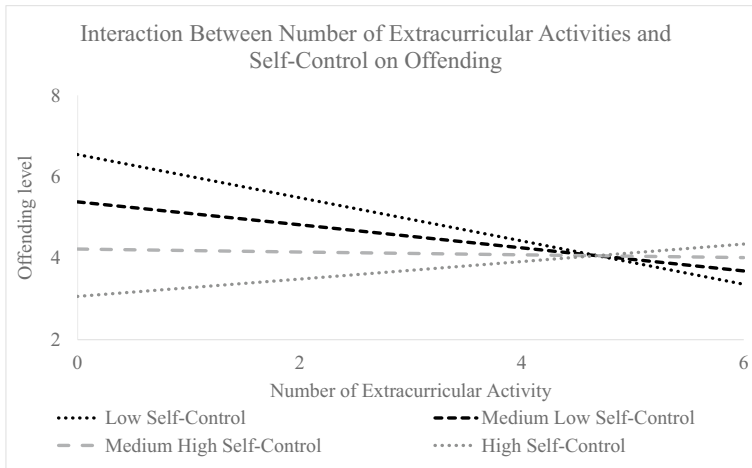


Fig. 1 Interaction between number of extracurricular activities and self-control on offending

Table 2 Interaction between number of extracurricular activities and self-control on offending

Offending	Coef	Std. Err	t	P> t	[95% Conf	Interval]
Number of ECA	-0.8174*	0.3168	-2.58	0.010	-1.4391	-0.1957
Self-control	-0.5880***	0.0765	-7.68	0.000	-0.7381	-0.4378
Number*Self-control	0.1302*	0.0534	2.44	0.015	0.0254	0.2350
Peer delinquency	1.0980***	0.1234	8.90	0.000	0.8559	1.3401
Neighborhood	-0.0116	0.1434	-0.08	0.936	-0.2929	0.2698
Gender	1.4866***	0.2939	5.06	0.000	0.9098	2.0633
Black	-1.1539***	0.2572	-4.49	0.000	-1.6585	-0.6492
Hispanic	-1.0441***	0.2549	-4.10	0.000	-1.5442	-0.5440
Age	-0.3507***	0.0875	-4.01	0.000	-0.5224	-0.1790
Exposure	-2.3361***	0.3909	-5.98	0.000	-3.1031	-1.5692
Constant	12.2571	1.6304	7.52	0.000	9.0578	15.4563
Number of observations	= 1,053					
LR X ²	= 369.40***					
Pseudo R ²	= 0.0682					
Log likelihood	= -2524.57					

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

Table 2 displays the multivariate output of the interaction between number of extracurricular activities and self-control, among other variables, on the dependent variable of self-reported offending. As the model shows, there is a statistically significant relationship at the 95% confidence level between offending and the interaction variable ($b = 0.1302$, $p < 0.05$). Additionally, the model reveals negative relationships between the number of extracurricular activities and delinquency, as well as between self-control and delinquency. Thus, as the number of activities increases,

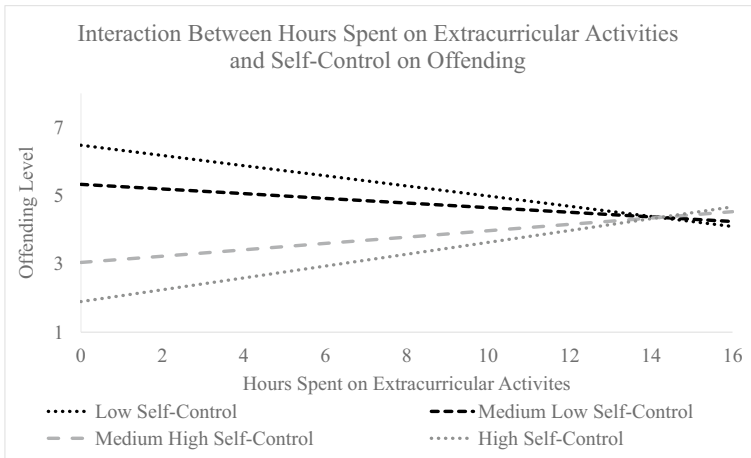


Fig. 2 Interaction between hours spent on extracurricular activities and self-control on offending

delinquency decreases, and likewise, as the level of self-control increases, delinquency decreases. All control variables were held constant at their mean values in the multivariate analyses. As anticipated, significant relationships were also found for peer delinquency, exposure time, age, gender, and race. Specifically, younger, White, non-Hispanic, male youth with lower levels of self-control, who had more delinquent peers and exposure time, were significantly more likely to engage in delinquent acts than their counterparts. Unlike all of the other variables, neighborhood context was not significantly related to the offending variable.

Figure 1 provides a graphical display of the relationship between the interaction term (i.e., Number of ECA * Self-Control) and self-reported offending. The figure disaggregates by level of self-control the relationship between number of extracurricular activities and offending level. As can be seen, respondents have been classified into four levels of self-control as measured by the impulse control suppression of aggression instrument. These four tiers were established as an illustrative tool by employing the average value of self-control and setting two stages evenly both above and below this statistical metric. Interestingly, the likelihood of offending is not uniform across these different groups. Rather, at different levels of self-control and number of extracurricular activities, an individual will have a unique likelihood of offending. For example, a respondent with low self-control who does not participate in any extracurricular activities would be expected to commit over six offenses. This is, unsurprisingly, a much higher level of delinquency than a comparable respondent with high self-control, who can be expected to commit about three types of offenses. Looking at offending at a different level of participation, we see that a respondent with high self-control and one with low self-control would both be expected to commit approximately the same number of offenses (four) if participating in four extracurricular activities. This trend continues at higher levels of extracurricular involvement. Notably, a youth with high self-control would actually be expected to commit more offenses than one with low self-control if both were participating in

six activities. Bear in mind that this projection, which becomes reliant on a progressively smaller number of cases as you look further to the right on the graph, has limited confidence. Nevertheless, the trend that should be the primary focus. Indeed, less than ten percent of the sample engaged in more than just two activities and less than one percent of the sample engaged in six or more. Worth mentioning is that the downward trend for those with low self-control is more pronounced than the upward offending trend for those with high self-control.

Table 3 presents the multivariate output of the interaction between the amount of time spent in extracurricular activities and its interaction with self-control on offending outcomes. A significant relationship was found, in this case at the 99% confidence level, between offending and the interaction variable ($b=0.0417$, $p<0.01$). The singular independent variables of self-control and time spent in activities were also each significantly, negatively related to the dependent variable. Therefore, as the duration of engagement in activities increases, delinquency decreases, while delinquency also decreases as level of self-control increases. As was the case in the earlier model, all of the control variables, with the exception of neighborhood context, were significant. Again, this means that younger, White, non-Hispanic, male youth with lower levels of self-control, who had more delinquent peers and exposure time, were significantly more likely to engage in delinquent acts than their counterparts. The neighborhood context variable's non-statistically significant relationship to delinquency involvement may be an indication of the variable's insufficiency as a measurement tool in the study.

Figure 2 depicts a visual representation of the relationship between the interaction term (i.e., Time in ECA * Self-Control) and self-reported offending. The relationship between self-control and offending is moderated by the number of hours an individual spends in extracurricular activities. Echoing, the results of the earlier model, there is a dynamic relationship among offending, self-control, and extracurricular activity engagement. Specifically, a person with low self-control can be expected to commit over six types of crimes if they engages in zero hours of activities per week but this goes down to five if they spend ten hours per week in extracurricular activities. Likewise, someone who has high self-control and spends no time in extracurricular activities can be expected to commit less than two types of offenses, but we can anticipate this same person would commit three offenses if they were to spend six hours per week in extracurricular activities. One must of course be mindful again that few respondents actually engaged in activities for more than a few hours each week. Only five percent of the sample spent ten or more hours in extracurricular activities weekly. Interestingly, the downward trend for those with low self-control is slightly less distinct than the upward trend for the high self-control group.

Discussion

The two models, taken together, show a clear relationship between offending, self-control, and engagement in extracurricular participation. Offending levels vary along different patterns based on the number of extracurricular activities youth engage in and their level of self-control. Youth who exhibit more engagement in extracurricular

activities and who have higher levels of self-control are less likely to be involved in delinquent acts. When the interaction of engagement with self-control is considered, the levels of offending based on self-control appear to converge at a certain point of extracurricular activity involvement. Interestingly, at a certain point of extracurricular participation, those with low self-control are projected to engage in less delinquent activity than those who have higher levels of self-control. Research has found that Extraversion and Openness to Experience (i.e., Engagement) declines as a person matures, while Agreeableness, Conscientiousness, and Emotional Stability (i.e., Self-Control) increases with developmental maturity (Olson, 2005). A possible explanation for the relationships depicted in Figs. 1 and 2, may be that those participants in the high self-control group are demonstrating more developmental maturity and have already begun to distance themselves from Engagement needs because they may have already gained the life experiences necessary to increase their autonomy and level of self-control. Perhaps the increase in exposure to extracurricular activities, which requires enhanced engagement, may cause someone with high self-control to become more susceptible to delinquency due to increased opportunity structures when exposed to the influences of potentially delinquent peers. Future research should investigate the influence opportunity structures have on this relationship. On the other hand, the members of the low self-control group benefited most from increased engagement (e.g., more activities and more hours spent involved in activities), because they are likely still navigating the earlier stages of psychosocial development and require more social engagement and life experiences, which are necessary to strengthen Self-Control in order to learn from and avoid negative social, emotional, and behavioral outcomes in the future (Olson, 2005).

The results are generally consistent with the prior literature, particularly in the fact that those individuals who are at the highest risk (i.e., lower levels of self-control) often having the most benefit to gain from participating in extracurricular activities. The importance of peer associations can also be seen, with a trend toward convergence in terms of offending among the various groups. The potential positive effects of participation for some (i.e., low self-control group), as well as possible negative outcomes for others (i.e., high self-control group) are interesting though not wholly surprising based on the literature, which has documented developmental changes in Big Five traits as youth mature out of adolescence and into adulthood (see Olson, 2005). Similar to prior research findings (Zill et al., 1995), this investigation revealed evidence of a threshold in which the number of activities no longer exerts a positive influence on behavioral outcomes, especially for the high self-control group. Taken together, these findings suggest factors beyond the variety and intensity of engagement in extracurricular activities should also be considered in future studies. In particular, the personal *meaningfulness* of engagement in extracurricular activities should be examined (see Bundick, 2011). Engagement in school-based activities that are seen as meaningful are likely to require a youth's own autonomous volition for participation rather than be imposed by external parties or for extrinsic reasons (e.g., just to look good on college applications; Bundick, 2011).

This research is important for adults who serve in supervisory roles (e.g., counselors, school administrators, educators, and coaches) in educational settings for these

activities, as well as parents and guardians of the youth. Indeed, structure and leadership have been shown to play a role in positive outcomes for youth. Despite the less optimistic results for some youth in this study, delinquency can often be considered normal during adolescence, and for most youth, it is not expected to persist into adulthood (see Moffitt, 1993). While it appears that youth who demonstrate low levels of self-control could benefit most from engagement in more extracurricular activities, as well as longer time spent in these activities, our findings do not necessarily negate the potential benefits that school-based extracurricular involvement can have for youth with high self-control. Engagement for this group may just require more careful strategy and planning. Given this group's high level of self-control, these youth may benefit best from one or two highly structured activities (e.g., student government, Model UN, arts, etc.) that aim to focus on developing individual achievement through leadership roles, since this group is less likely to seek social and experiential engagement, and instead, might crave future goal-oriented activities that permit these youth to build more autonomy and self-efficacy (Bundick, 2011; Olson, 2005). Adults with supervisory roles over youth may want to employ personality inventories (e.g., WAI or MMPI) to discern the level of Self-Control and Engagement youth exhibit. Based on those determinations, supervising adults could additionally survey youth about interests and skills to offer and encourage potential extracurricular opportunities tailored for them.

Our study's finding that White, non-Hispanic youth were more likely to commit delinquent acts compared to their counterparts reveals that self-report data uncovers a greater amount of delinquency than that which is captured in official data (e.g., arrests or adjudications), which tends to suggest differential juvenile offending across race and ethnicity. However, racial disparities depicted in studies using official statistics have been argued to be a product of institutional racism resulting from disproportionate minority contact between youth of color and the juvenile justice system (Tonry, 1995). In fact, studies have found that White juveniles are actually more likely than Black or Hispanic youth to self-report illicit drug use, which is a common delinquent act committed during adolescence (Johnston et al., 2011). Thus, the findings from self-report studies, like this one, have lead many to conclude that there are few if any substantial and consistent differences between the delinquency involvement of different racial or ethnic groups (see Huizinga & Elliott, 1987).

However, there is a well documented "engagement gap" between the "haves" and the "have-nots" in regard to extracurricular participation among adolescents in the United States (Snellman et al., 2015, p. 195). Specifically, low-income, working-class youth in the U.S. have less resources and access to extracurricular activities in their communities compared to their more affluent counterparts (Snellman et al., 2015). Extracurricular activities have typically perceived enrichment opportunities in the public sphere, but neoliberal restructuring in education has resulted in budget cuts in public spending, making involvement in such activities a private luxury for youth whose families can afford it (Snellman et al., 2015). Without better public funding and access to structured, collaborative extracurricular activities, vulnerable youth will continue to be denied equal opportunity to these prevention programs that serve to reduce delinquency involvement, promote social connectedness, inspire self-actualization, and stimulate civic involvement (Snellman et al., 2015).

Limitations

The study is not without limitations. Participants in this sample engaged in a higher degree of offending than is typical of high school youth. Additionally, we did not break the results down by the particular type of extracurricular activity the youth engaged in, and we could not source activities not sponsored by their school. Previous studies have indicated that the type of activity can be an important consideration. Self-selection into an activity is also an issue in this type of research and controlling for this difficult. It is possible that adolescents who are more prone to engage in extracurricular activities (i.e., higher levels of extraversion and openness to experience) may be innately more prosocial when compared to those that do not participate. Due to the inability to account for selection issues in this type of research, it must be acknowledged as a limiting factor. The offending variable was unique in that it only measured whether or not a respondent had committed a type of offense and did not address the frequency of its commission. Additionally, offenses of varying types, and seriousness, would not be distinguishable in the results. As such a respondent who sold marijuana on one occasion would be weighted the same as an individual who committed numerous robberies. The proxy for socioeconomic status (Neighborhood Context) was not the best measure for social class, albeit the only one available for this dataset. Future investigations need to utilize individual-level measures to control for social class. Moreover, we did not evaluate the level of meaningfulness youth ascribed to engagement in extracurricular activities, which was also a limitation of the variables in this dataset. For the purposes of this investigation, our analysis was limited to moderation; however, future studies may consider conducting mediation analysis to further evaluate the relationships between these variables. Finally, the offending measure was the only outcome examined; therefore, other outcomes, such as positive academic performance were not included. Future research can address and build upon these shortcomings.

Conclusion

The current study examined how self-control affected the relationship between extracurricular activities and subsequent delinquency. We found that level of self-control mitigated the impact of involvement in extracurricular activities in its relationship with subsequent delinquency. More specifically, while youth with the lowest levels of self-control benefited the most from engagement in extracurricular activities, individuals with the highest levels of self-control were likely to be negatively impacted by the more involved they became in extracurricular activities. This finding also supports the approach suggested by Olson (2005) who proposed that the more mature an adolescent becomes the less likely this person will seek out engagement needs because of declines in Neuroticism, Extraversion, and Openness to Experience. Instead, youth displaying maturational change by elevated levels of self-control, will likely pursue more autonomous, future goal-oriented experiences that promote new forms of stimulation, which might further increase personal growth,

better self-efficacy, and self-actualization. Thus, the more self-control one has the less engaged they may become. Our study supports this theory because those with higher levels of self-control may be self-selecting out of participation that requires social exploration/experience and would likely benefit more from involvement in activities that enable opportunities for self-determination, leadership, and future-oriented planning. These findings suggest that it is important to consider a youth's level of engagement needs and self-control before encouraging extracurricular involvement, because it is likely that based on these personality characteristics, recommendations should be tailored to the unique individual needs of youth to maximize benefits and reduce the likelihood of delinquency.⁵

Data Availability The datasets generated during and/or analyzed during the current study are available in the Inter-university Consortium for Political and Social Research (ICPSR) repository, <https://www.icpsr.umich.edu/web/NAHDAP/studies/29961>.

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⁵ Also, we must recognize that during writing of this study people are experiencing various restrictions (e.g., social distancing and school closures) related to social interaction due to the ongoing global pandemic. As such, there is much uncertainty in what extracurricular activity involvement will look like in the near future until vaccinations reach the necessary level to achieve herd immunity or reliable treatments for COVID-19 are found. However, we are hopeful that current conditions will improve and eventually permit typical extracurricular interactions for youth.

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