Organized Activity Participation and Positive Youth Development: Trajectories and Mechanisms

By

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A dissertation submitted in partial fulfillment
of the requirements of the degree of
Doctor of Philosophy
(Health Behavior and Health Education)
in the University of Michigan
2014

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Dedication

This dissertation is dedicated to my family: my husband, Rob Eisman, and our children Alex, Evan and Alana.

Acknowledgements

I am grateful for the tremendous support I received from so many people during this educational journey. In particular, I would like to thank my dissertation committee, Dr. José Bauermeister, Dr. Cleopatra Caldwell and Dr. Sarah Stoddard, for their support and mentoring throughout this process. I am indebted to you all for your wisdom, guidance, patience and encouragement. I would like especially to thank my chair, Dr. Marc Zimmerman for continually pushing me to grow as a scholar, sharing his wisdom and humor throughout this process, and appreciating my life situation as an asset. I wouldn't have achieved this milestone without my family. To my children, Alex, Evan and Alana: you are my greatest inspiration to be the best person I can be. To my husband Rob, for your encouragement, support and partnership; without you this would not have been possible and I am truly grateful. And to our parents, thank you for your endless support and encouragement. Without these people, I would not have completed this dissertation and I am deeply grateful to them all.

Table of Contents

Dedication ii

Acknowledgements iii

List of Tables v

List of Figures vi

Abstract vii

Chapter 1 Introduction 1

Chapter 2 Trajectories of Participation Among Urban Adolescents: An Analysis of Predisposing Factors 20

Chapter 3 Trajectories of Participation Among Urban Adolescents During the High School Years: Associations with Young Adult Outcomes 64

Chapter 4 Organized Activity Participation and Aggressive Behavior: The Role of Positive Youth Development 104

Chapter 5 Organized Activity Participation and Positive Youth Development: Findings and future directions 139

List of Tables

Table 2.1 Descriptive statistics for study variables 58

Table 2.2 Fit statistics for participation LCGA by class solution 58

Table 2.3 Three class model results 59

Table 2.4 Participation trajectory class by context 60

Table 3.1 Descriptive statistics for study variables 100

Table 3.2 Fit statistics for participation LCGA by class solution 101

Table 3.3 Three class model results 101

Table 3.4 Distal outcomes by trajectory class membership 102

Table 4.1 Descriptive statistics for study variables 135

Table 4.2 Decomposed and integrated PYD model results 135

Table 4.3 Final integrated model results 136

List of Figures

Figure 2.1 Growth Mixture Model Diagram. X: covariates, C: latent class variable, I: intercept, S: slope, Y_1-Y_4: repeated outcomes 61

Figure 2.2 Observed means of organized activity participation by wave, corresponding to the high school years 62

Figure 2.3 Model-estimated means for the three-class latent class growth analysis solution for organized activity particiption, Wave 1-4 corresponding to the high school years 63

Figure 3.1 Model-estimated means for the three-class latent class growth analysis solution of organized activity participation across the high school years 103

Figure 4.1 The decomposed model for the relationship between organized activity participation and relational aggression, mediated by PYD. 137

Figure 4.2 The integrated model for the relationship between organized activity participation and relational aggression, mediated by PYD 138

Abstract

Participation in organized activities plays a key role in positive youth development (PYD). Few researchers have considered the possibility of multiple participation trajectories during the high school years, predisposing and contextual factors that may influence trajectory group membership and how various trajectories may be associated with young adult outcomes. Furthermore, few researchers have explicitly examined PYD as a mechanism by which organized activities influence youth outcomes. I used growth mixture modeling with longitudinal data from African American adolescents attending urban high schools to identify latent classes of participation (N=681 Wave 1, 49% male). I examined how predisposing risk and promotive factors and ecological contexts were related to participation trajectory subgroups. I investigated if subgroup membership predicted psychological well-being, substance use, educational and employment-related outcomes in young adulthood. I also used structural equation modeling to investigate if PYD mediated the relationship between participation and relational aggression among a diverse sample of early adolescents (N=196, 60% female). My results indicated three participation trajectories during the high school years: low, decreasing class (74% of the respondents); moderate, consistent class (21%) and moderate, increasing class (5%). Results indicated that, net of sociodemographic and self-selection factors, substance use, parent support and participation across contexts were associated with trajectory class membership. I also found that psychological well-being, substance use and educational attainment in young adulthood differed by participation trajectory class. Finally, I found that PYD partially mediated the relationship between participation and relational aggression. My results suggest that early substance use may reduce the likelihood of participation over time in activities that support positive development. Participation across contexts may promote participation over time. Young

people who expand their participation over time may be more likely to experience the positive effects of this involvement into young adulthood. My results also support the idea that the positive effects of participation operate in part through building assets and resources related to PYD. This research suggests that efforts to address barriers to participation and enhance opportunities for involvement may be helpful for development of skills and resources that adolescents need to become healthy, productive adults.

Chapter 1

Introduction

Interest in organized activity participation during adolescence and its potential for promoting positive youth development has grown dramatically over the last several decades. Organized activities refer to structured, supervised activities outside the school curriculum that may provide youth with opportunities to gain confidence, learn new skills, and develop positive social relationships (Bohnert, Fredricks, & Randall, 2010; Feldman & Matjasko, 2005; Gardner, Browning, & Brooks-Gunn, 2012). Youth participation in organized activities has the potential to 1) promote positive and prevent negative developmental outcomes, 2) provide important opportunities for youth to build assets and resources that support healthy developmental trajectories, 3) address social class and racial/ethnic disparities and 4) constructively use adolescents' discretionary time (Eccles, Barber, Stone, & Hunt, 2003; Eccles & Templeton, 2002). Consequently, studying various aspects of organized activities is a useful program of research to promote positive youth development.

About half of adolescents' waking hours in the United States are discretionary (Larson & Verma, 1999; Roth, Malone, & Brooks-Gunn, 2010). The developmental consequences of how that time is spent are of primary concern for parents, policy-makers and professionals invested in adolescent health and well-being. Unsupervised, unstructured discretionary time is generally associated with increased risk of negative behavioral and psychological outcomes, including delinquency and depression (Bartko & Eccles, 2003; Bohnert, Richards, Kohl, & Randall, 2009). As a result, individuals, organizations and communities interested in youth development have

turned their attention to organized activities as an alternative for unstructured time, particularly in the United States (Eccles & Gootman, 2002; Lauer et al., 2006). Participation in structured, supervised activities outside the school curriculum is generally associated with positive developmental trajectories and fewer problem behaviors (Eccles et al., 2003; Eccles & Templeton, 2002; Larson et al., 2004; Lauer et al., 2006). Consequently, organized activity participation presents a unique opportunity for promoting healthy development among adolescents during out-of-school time (Bohnert et al., 2009).

Researchers have found that involvement in organized activities contributes to positive development among adolescents (Eccles et al., 2003; Eccles & Gootman, 2002; Larson et al., 2004; Lauer et al., 2006). Participation has many short and long term benefits for youth. In the short term, organized activity participants have higher academic achievement, better social and psychological functioning and fewer problem behaviors compared to non-participants (Bartko & Eccles, 2003; Bohnert et al., 2009; Mahoney, 2000; Roth et al., 2010). In the long-term, researchers have found that participation during adolescence is associated with positive adolescent and adulthood outcomes, including higher occupational status, better mental health outcomes and fewer negative outcomes such as substance use, compared to limited or no participation (Barber, Eccles, & Stone, 2001; Mahoney, Cairns, & Farmer, 2003; Zaff, Moore, Papillo, & Williams, 2003). Taken together, these results suggest that organized activities help promote positive developmental trajectories, may help reduce risk of detrimental behaviors and that these positive effects may be longer term (Gardner, Roth, & Brooks-Gunn, 2008).

Given the generally positive effects associated with organized activities, researchers suggest that participation is a constructive use of adolescents' time (Eccles et al., 2003; Mcneely, Nonnemaker, & Blum, 2002). Although researchers have made considerable strides in recent

years examining organized activity participation and youth development, much is unknown regarding how participation shapes development and what factors may influence this relationship. Theories of ecology and development may guide our understanding of the dynamic relationship between organized activity participation and youth development.

Theoretical Framework

Positive Youth Development. Positive Youth Development and the developmental-ecological model are useful theoretical frameworks for understanding the relationship between participation and youth development. Positive Youth Development (PYD) is a developmental systems-based model that emphasizes the plasticity of human development through interactions between the individual and his/her developmental contexts (Lerner, Lerner, & Benson, 2011). PYD represents a shift in the focus of youth development work from primarily a problem-based to a strength-based approach, with attention to factors that prevent negative outcomes and promote healthy development (Damon, 2004). These factors, referred to as developmental assets and resources, aid youth in acquiring the capacity necessary to successfully transition from childhood to adulthood and avoid detrimental outcomes. Developmental assets and resources are a theoretically and empirically based set of experiences, opportunities and supports associated with promoting positive youth outcomes (e.g., school success) and reducing negative outcomes (e.g., violence) (Benson, Scales, & Syvertsen, 2011).

Guided by the PYD framework, assets and resources may fall into six broad categories: 1) Confidence (self-esteem and positive identity), 2) Competence (capabilities in social, cognitive, academic and vocational areas), 3) Connections (prosocial relations within important developmental contexts), 4) Character (prosocial values, conscience and integrity), 5) Caring (concern and empathy for others), and 6) Contribution (to self, family and community) (Lerner,

Lerner, von Eye, Bowers, & Lewin-Bizan, 2011; Lerner et al., 2005; Lerner, Fisher, & Weinberg, 2000; Roth & Brooks-Gunn, 2003). Foundational concepts of PYD emphasize mutually influential person-context interactions as the building block of human development (Lerner, 2005). As such, the developmental-ecological model provides a useful complementary framework for investigating the role of organized activities in fostering PYD.

Developmental-ecological framework. The developmental-ecological framework considers the dynamic nature of development through incorporating multiple levels of influence and considering interactions between person and context across levels of influence (Bronfenbrenner & Ceci, 1994; CDC, 2002; Sallis, Owen, & Fisher, 2008). Using a developmental-ecological approach, human development is influenced by characteristics of the individual, the settings in which an individual interacts and the extent of those interactions over time (Bronfenbrenner & Morris, 2006; Farb & Matjasko, 2012). Individual characteristics can refer to biological and genetic characteristics, such as sex, race and age, as well as individual mental (e.g., intelligence), emotional (e.g., self-esteem) and material resource characteristics that can influence youths' developmental trajectories (Tudge, Mokrova, Hatfield, & Karnik, 2009). Individual characteristics that have been investigated most extensively in the participation literature include sociodemographic and self-selection characteristics. Among sociodemographic characteristics, parent education and sex may influence participation. Researchers have found that youth whose parents have higher levels of education are more likely to participate in organized activities than youth whose parents have less education (Bartko & Eccles, 2003; Linver, Roth, & Brooks-Gunn, 2009). Some researchers examining potential sex differences suggest that females generally participate more than males (except sports) (Eccles et al., 2003), while others have reported no sex differences (Pedersen, 2005).

Self-selection characteristics are individual-level factors that have been empirically supported as factors that create bias in terms of which students elect to participate (Farb & Matjasko, 2012; Linver et al., 2009; Zarrett et al., 2009). Self-selection factors, such as self-esteem and academic achievement, may influence who may be more or less likely to engage in organized activities (Linver et al., 2009). Adolescents who start high school with higher levels of self esteem, for example, may be more likely to engage in (or select into) organized activities because of the high levels of competition and skill required to participate (Farb & Matjasko, 2012; Linver et al., 2009). Academic achievement may also be associated with self-selection. Although participation is generally associated with academic achievement (Denault & Poulin, 2009; Eccles & Gootman, 2002; Linver et al., 2009), some researchers suggest that students who select into organized activities may have higher academic achievement prior to participation compared to non-participants (Fredricks & Eccles, 2005; Gottfried, Fleming, & Gottfried, 2001; Gottfried, 1985). Thus, youth who participate may also be more likely than non-participants to do well in school in the first place. Consequently, self-esteem and academic achievement may be important self-selection factors associated with organized activity participation. Taken together, these results suggest that it is vital to account for sociodemographic and self-selection characteristics when investigating important settings in which an individual interacts such as organized activities and its effects on youth development.

Adolescence is a time of expanding social influence, and youth interact across a variety of contexts, including school, home/family, church and community. These interactions, called proximal processes, are a key factor in youth development (Bronfenbrenner & Ceci, 1994). Compared to childhood, proximal processes in settings outside the home become increasingly important influences on development as youth transition to adulthood (Cobb, 2007; Crosby,

Santelli, & DiClemente, 2009). Proximal processes within organized activity settings may be particularly influential to development because of their voluntary nature. Because youth generally have some autonomy around participation, organized activities are a setting where adolescents report high levels of motivation and engagement (Larson et al., 2004; Nakamura & Csikszentmihalyi, 2002). Organized activities may provide important opportunities for adolescents to be active agents in their own development compared to other aspects of their lives (Larson et al., 2004). These unique features of organized activities may create a setting that is especially conducive to fostering PYD.

The potential for organized activity participation to promote positive development, however, may depend on many factors. Consistent with the developmental-ecological model, proximal processes may need to occur for extended periods of time in order positively influence development (Bronfenbrenner & Morris, 2006). Engaging in organized activities over time influences how proximal processes, the interactions that create opportunities to build assets and resources, shape development. From the developmental-ecological perspective, the relative constancy or change of activities may influence how organized activities shape development (Tudge et al., 2009). The pattern of engagement in activities over time may influence the extent to which youth develop assets and resources related to PYD. As a result, certain activity participation patterns, such as those that remain consistent or increase over time, likely will expose adolescents to greater opportunities for building developmental promotive factors. Yet, despite the potential for organized activity participation to contribute to PYD, few researchers have examined possible participation trajectories and its predictors, long-term outcomes (age 25 and older) of participation trajectories during adolescence and specific mechanisms of influence.

Limitations of Previous Research

Research on organized activity participation has grown substantially in recent years, yet notable gaps remain. First, the vast majority of the research examining organized activity participation and youth development is based on nationally-representative and middle-class White samples of youth. Researchers examining participation among urban, disadvantaged youth suggest that the developmental benefit may equal or exceed the benefits found for economically advantaged samples (Fauth, Roth, & Brooks-Gunn, 2007; Fredricks & Eccles, 2006, 2010). Organized activity participation may provide developmental opportunities that these youth may not otherwise experience to build assets and resources that may help them overcome risk and foster positive development (Fredricks & Simpkins, 2012; Mcneely et al., 2002; Zimmerman et al., 2013). Yet, youth living in disadvantaged contexts are largely understudied in the participation literature. Second, although both the nature and extent of proximal processes over time are important influences on development (Bronfenbrenner & Morris, 2006), few researchers have investigated possible patterns or trajectories of participation during the high school years. Those that have investigated participation over time have generally incorporated crude measures, such as summing dichotomous participation questions over several years or included only two time points and could not study trajectories. Third, although researchers have taken into account factors associated with participation and youth outcomes (i.e., sociodemographic and self-selection factors), few have examined if other important developmental risk and promotive factors influence adolescent's trajectories of participation and differences in trajectories. Fourth, while many researchers have examined the relationship between participation and adolescent and emerging adulthood outcomes, few have investigated if the positive effects of participation extend into young adulthood. Furthermore, few have examined if specific trajectories of participation during the high school years influence positive

and negative young adult outcomes. Fifth, although researchers suggest that organized activity participation plays a key role in positive youth development through opportunities for building important developmental assets and resources (Bohnert et al., 2010; Gardner et al., 2012; Lerner, Lerner, von Eye, et al., 2011), most researchers have focused on outcomes of organized activity participation (Mueller, Lewin-bizan, & Urban, 2011; Roth et al., 2010). Fewer researchers have examined empirically PYD as a mechanism by which participation operates to promote positive or help avoid negative developmental outcomes.

Description of Studies

This dissertation includes three studies that focus on organized activity participation among adolescents. To address gaps in the research literature, these studies focused on youth who reside in an economically challenged context and were guided by PYD and developmental-ecological frameworks. The first and second studies focused on African Americans residing in primarily low-income neighborhoods and at risk for school dropout. Study Three included a diverse sample of middle school students from both urban and suburban areas.

Study Context and Samples

The city of Flint is unique in that it has seen much economic prosperity and misfortune throughout the years. Transitioning from a manufacturing to service economy has had a strong effect on the life-circumstances of young people in Flint. At one time, Flint and surrounding Genesee County was one of the most affluent metropolitan areas in the U.S. because of high-paying manufacturing jobs. In the past 40 years, over 70,000 auto industry jobs have been lost, and the population has declined by half. Like many urban Michigan communities facing declining populations, the city and surrounding areas face extreme economic and health challenges, including high rates of crime and violence; Flint has been ranked as the most violent

city over 100,000 in the U.S. (Weigley, Hess, & Sauter, 2013) and has suffered from higher unemployment levels compared to state and national averages for well over a decade (Bureau of Labor Statistics, 2014).

Studies One and Two utilized data from the Flint Adolescent Study, a longitudinal study from adolescence into young adulthood. Data were collected over 12 Waves from 850 adolescents (Wave 1: 1994). Waves 1 through 4 correspond to the high school years. Waves 5 through 8 correspond to years two through five post-high school 1999-2002). Data for Waves 9 through 12 were collected in 2008, 2010, 2011 and 2012, respectively. Participants in Waves 1-4 were interviewed at one-year intervals. Students engaged in face-to-face interviews in school or in a community setting if participants could not be found in school. Interviews post-high school years were conducted in a community setting. Prior to each interview, participants reviewed and signed the study's assent/consent forms (depending on their age) and asked any confidentiality-related questions. Parents contacted study staff if they did not provide consent when participants were minors. Following the face-to-face interview, participants completed a self-administered paper and pencil questionnaire addressing primarily sensitive issues such as substance use and delinquent behaviors. Each interview lasted approximately 50-60 minutes. Youth were eligible to participate in the initial study if they were in ninth grade enrolled in one of Flint's four main public high schools with an eighth grade GPA of 3.0 or below and were not diagnosed as having developmental impairments. I focus my analyses for Studies One and Two on the African American adolescents sample (N-681), which constituted eighty percent of the total sample.

Study Three was based on data collected as part of a school-based survey focused on understanding risk and protective factors for youth violence. Data were collected from 7th grade students at a Flint, Michigan suburban middle school during their health class. Although

geographic location of the school is considered a suburban area, the catchment area cut across both urban and suburban areas. The student population is both economically and racially diverse. Written parental consent and student assent was obtained prior to participation. Participation in the study was completely voluntary and no compensation was provided to participants. The survey was administered in classrooms by trained research staff during the 2011-2012 academic year. Participants completed a self-administered paper and pencil questionnaire that included items about violent behavior and risk and protective factors associated with youth violence. Participants were assured of the confidentiality of their responses. Students completed the survey in approximately 35 minutes. Non-participating students were given workbooks and instructed to work quietly during the survey hour while the rest of the class took the survey. Study staff made accommodations for students with lower reading levels or limited English proficiency. Approximately 60% of 7th grade students participated in the survey (mean age = 12.39 years; SD = .52; N = 196; 60% female). The sample consisted of 45% African American, 27% White, 21% Multiracial, and 7% Other (e.g., Asian-American, Latino/a, Native American).

Study One and Two utilized data collected during the high school years to examine participation trajectories across adolescence and if distinct subgroups of participation trajectories existed. This study included sociodemographic and self-selection variables as controls, but extended previous research by including risk and promotive predisposing factors to participation trajectories. Thus, this study explored factors that may inhibit or promote likelihood of a participation trajectory among youth. Study Two study built upon the trajectory classes (subgroups) established in Study One to explore effects of participation on the health and well-being of study participants fifteen years after high school. I explored if participation trajectory subgroups, the patterns of participation that youth followed during adolescence, influenced

outcomes during young adulthood. Specifically, I examined if participation trajectories, accounting for demographic and self-selection factors, were associated with positive and negative outcomes when participants were in their early thirties. Study Three examined the mechanism by which participation influences positive developmental outcomes and reduces risk of negative developmental outcomes. Thus, I examined a mediating model that explored if organized activity participation increased developmental assets, which, in turn, reduced relational aggressive behavior among youth.

These three studies contribute to the body of literature on organized activity participation among youth, positive youth development (PYD) and preventing negative developmental trajectories. The abstracts for my dissertation studies: Trajectories of Participation Among Urban Adolescents: An Analysis of Predisposing Factors, Trajectories of Participation Among Urban Adolescents During the High School Years: Associations with Young Adult Outcomes and Organized Activity Participation and Aggressive Behavior: The Role of Positive Youth Development are included below.

Study #1: Trajectories of Participation Among Urban Adolescents: An Analysis of Predisposing Factors

Organized activity participation may provide important opportunities to develop assets and resources related to positive youth development. In this study, I used growth mixture modeling with longitudinal data from African American adolescents attending urban high schools in Flint, MI to identify subgroups of participation trajectories. I measured activity participation using psychological and behavioral engagement across multiple contexts and over time. I examined how predisposing risk and promotive factors and ecological contexts were related to trajectory class membership. Predisposing risk factors included substance use, conflict in the family environment and peer negative behaviors. Predisposing promotive factors included parent support and school attachment. I expect to find multiple participation trajectory subgroups within this sample. I hypothesize that the presence of risk factors will increase the likelihood of a lower level participation trajectory and promotive factors will increase the likelihood of higher level participation trajectories during the high school years. Furthermore, I expect that youth who participated in multiple contexts will be less likely to follow a lower level trajectory compared to those participating in a single context. Efforts to utilize organized activity participation as a way to foster positive development among at-risk youth would benefit from addressing predisposing factors and contextual considerations that may facilitate or inhibit participation over time.

Study #2: Trajectories of Participation Among Urban Adolescents During the High School Years: Associations with Young Adult Outcomes

Participation in organized activities provides vital opportunities for adolescents to develop assets and resources that promote positive developmental trajectories whose effects may extend into young adulthood. In this study, I investigated if organized activity participation trajectory subgroup membership (low and decreasing, moderate and consistent, moderate and increasing) was associated with young adult outcomes, accounting for sociodemographic and self-selection characteristics. I used a composite measure of organized activity participation using behavioral and psychological engagement across contexts (school, church and community) from Study One to define growth trajectories using growth mixture modeling. I investigated if trajectory subgroup membership predicted psychological well-being, substance use, educational and employment-related outcomes in young adulthood. I hypothesize that individuals in the moderate/consistent and moderate/increasing trajectory subgroups will be more likely to report higher life satisfaction, educational attainment, and more positive job characteristics in young adulthood than individuals in the low/decreasing participation subgroup. I also hypothesize that individuals in the moderate/consistent and moderate/increasing trajectory subgroups would report lower depressive symptoms and substance use than those in the low/decreasing participation subgroup. My results may elucidate the importance of promoting participation in organized activities over time during adolescence as a means to foster developmental assets and resources whose positive effects may extend into young adulthood.

Study #3: Organized Activity Participation and Aggressive Behavior: The Role of Positive Youth Development

Aggressive behavior among adolescents is a pervasive problem that compromises their health and well-being. Researchers, professionals and other adults working with youth have generally moved beyond just preventing problem behavior, and have begun to incorporate an integrative approach that includes promoting positive development. Participation in organized activities is a key way that youth build assets and resources related to positive youth development. Yet, few researchers have examined empirically promotive assets and resources as a mechanism by which organized activity participation helps prevent negative outcomes such as relational aggression. In this study, I used structural equation modeling to investigate if assets and resources associated with positive youth development (PYD) mediated the relationship between organized activity participation and relational aggression. I tested two competing models, one with decomposed PYD factors and one with an integrated PYD factor. In the decomposed model, I examined if competence and connection were associated with contribution as a mediating mechanism between breadth of participation and relational aggression. In the integrated model, I examined peer connections, competence and contribution as indicators for an integrated, latent PYD factor mediating the relationship between participation and relational aggression. I expect participation to have a direct negative effect on relational aggressive behavior. My results may provide empirical support for building PYD-related factors as a mechanism by which participation may reduce risk of negative behaviors and if PYD-related factors operate independently or collectively within the context of organized activities.

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Chapter 2

Trajectories of Participation Among Urban Adolescents: An Analysis of Predisposing Factors

Introduction

Participation in organized activities plays a key role in positive youth development by providing youth with opportunities to learn skills, develop self-confidence, nurture prosocial relationships, and avoid negative developmental trajectories (Eccles & Gootman, 2002; Gardner, Roth, & Brooks-Gunn, 2008; Mueller, Lewin-bizan, & Urban, 2011). Organized activities refer to a broad range of structured, supervised activities outside the school curriculum in diverse contexts such as schools, churches and community organizations (Bohnert, Fredricks, & Randall, 2010). Organized activity participation presents a unique opportunity for promoting healthy development among adolescents during out-of-school time (Bohnert, Richards, Kohl, & Randall, 2009). Researchers have found that involvement in organized activities contributes to positive youth development (PYD) (Eccles, Barber, Stone, & Hunt, 2003; Eccles & Gootman, 2002; Larson et al., 2004; Lauer et al., 2006). Participation has many benefits for youth, both short and long term. In the short term, organized activity participants have lower school dropout and criminal offending rates compared to non-participants (Mahoney, 2000). In the long-term, researchers have found that participation during adolescence is associated with positive outcomes for emerging adults (ages 18-25), including higher occupational status and fewer negative outcomes such as substance use, compared to limited or no participation (Arnett, 2000;

Barber, Eccles, & Stone, 2001; Mahoney, Cairns, & Farmer, 2003; Zaff, Moore, Papillo, & Williams, 2003). Although some negative effects have been associated with specific types of activity participation (e.g., increased alcohol use among sports participants) (Barber et al., 2001; Mahoney, Lord, & Carryl, 2005), researchers have generally found support for the promotive effects of participation on youth development (Eccles & Gootman, 2002; Mahoney, Lord, et al., 2005). Yet, these promotive effects may vary by how youth participate during adolescence; but we know relatively little about the various trajectories that participation may take over time and what factors may help set the course for a more positive or problematic trajectory of participation. Furthermore, the promotive effects of participation may vary among different groups of adolescents.

Organized activity participation may be especially beneficial for youth living in disadvantaged, urban environments as these activities may provide PYD opportunities and help youth overcome risk associated with disadvantage (Fredricks & Simpkins, 2012; Mahoney, Lord, et al., 2005; Zimmerman et al., 2013). Youth in living in urban, disadvantaged contexts face multiple risks that increase the likelihood of negative developmental trajectories (Bohnert, Richards, Kolmodin, & Lakin, 2008; Patton, Woolley, & Hong, 2012). Researchers suggest that participation in organized activities is a promising way to offset risks from living in an high-risk environment and promote healthy development (Fredricks & Simpkins, 2012; Gardner, Browning, & Brooks-Gunn, 2012; Mahoney, Lord, et al., 2005). Organized activity participation may provide developmental opportunities that these youth may not otherwise experience to build promotive assets and resources that foster positive development (Fredricks & Simpkins, 2012; Mahoney, Lord, et al., 2005; Zimmerman et al., 2013). Yet, despite potential benefits, youth living in at-risk contexts are less likely to participate in organized activities than their wealthier

counterparts, often due to resource and access limitations (Larson, 2001; Pedersen, 2005; Quinn, 1999). Furthermore, youth living in disadvantaged contexts have greater exposure to risk factors (Like, 2011; Sampson & Wilson, 2005) that may impede their opportunities for interactions within positive developmental contexts. Thus, although participation has potential to build promotive factors and offset risks, youth who may derive the most benefit are also be those facing the greatest challenges to participation.

Theoretical Framework

I used positive youth development (PYD) and the developmental-ecological frameworks to characterize different trajectories of participation over time and examine the factors that may influence which trajectory youth follow. Positive Youth Development (PYD) is a developmental systems-based model that emphasizes the plasticity of human development through interactions between the individual and his/her developmental contexts (Lerner, Lerner, & Benson, 2011). Using a developmental-ecological framework (Bronfenbrenner & Morris, 2006), these interactions, called proximal processes, represent key forces shaping adolescent development. Proximal processes are interactions between a person and the immediate environment (contexts) such as school, church and community and experiences within those contexts (Bronfenbrenner & Ceci, 1994). PYD focuses on proximal processes that provide opportunities to develop assets (individual characteristics- e.g., skills) and resources (social and material resources- e.g., supportive relationships) to promote positive developmental trajectories (Fergus & Zimmerman, 2005; Lerner, 2002, 2005). Participation in organized activities provides adolescents opportunities for proximal processes that promote positive development. Yet, there are multiple aspects of participation that may be associated with PYD.

Participation Measurement: Behavioral and Psychological Engagement

The degree to which proximal processes shape development within organized activities may depend on engagement, both behavioral and psychological, and the extent of interactions over time (Bartko & Eccles, 2003; Weiss, Little, & Bouffard, 2005). Behavioral engagement includes dimensions such as intensity (Archambault, Janosz, Morizot, & Pagani, 2009; Bohnert et al., 2010). Intensity, or frequency of involvement, is a critical aspect of youth participation because it may best reflect an adolescent's overall level of involvement in activities (Bohnert et al., 2010; Denault & Poulin, 2009a, 2009b). An adolescent who attends an activity daily, for example, is likely more involved than one who attends once per week. During mid- to late-adolescence, youth have increasing control over how they spend their time compared to early adolescence (Cobb, 2007; Fredricks & Eccles, 2010). Thus, when considering developmental issues such as autonomy (Cobb, 2007), intensity of involvement in activities may be particularly meaningful to high-school age youth because participation is largely self-directed. Furthermore, adolescents during the high school years may participate in fewer activities more intensely compared to late childhood/early adolescence (Busseri, Rose-Krasnor, Willoughby, & Chalmers, 2006; Denault & Poulin, 2009b). Consequently, intensity of participation may be the most developmentally appropriate measure of behavioral engagement during mid- to late adolescence.

Psychological engagement, how youth perceive the experience of participating and its importance or relevance to them, is another key aspect of organized activity participation (Bohnert et al., 2010). Researchers suggest that psychological engagement or affective investment (e.g., activity importance) is a vital aspect of participation in promoting positive developmental outcomes (Mahoney, Larson, Eccles, & Lord, 2005; Weiss et al., 2005). The degree to which adolescents feel an activity is important to them influences the potential for

participation to build assets and resources that promote positive development (Bundick, 2011). In fact, some researchers suggest that psychological engagement may be more important for positive developmental outcomes than time spent participating in activities (Adachi & Willoughby, 2014). Yet, few researchers have considered both behavioral and psychological engagement combined in a single measure when examining organized activity participation among youth. Measures including both behavioral and psychological engagement may capture multiple dimensions of participation particularly relevant during middle and late adolescence.

Participation Over Time

Although the quantity and quality of time spent in activities influences the role of organized activities in positive development, so too does the temporal aspect of activity participation. The pattern of participation in activities over time may influence the extent to which youth develop assets and resources for positive development (Tudge, Mokrova, Hatfield, & Karnik, 2009). Consistent or increasing activity participation patterns over time, for example, may expose adolescents to greater opportunities for building developmental assets and resources compared to low/no participation. Yet, despite the potential developmental implications, few researchers have examined possible differences that may exist in participation trajectories during adolescence. Efforts to explore possible differences in participation trajectories may aid in our understanding of developmental factors that influence participation over time.

Researchers generally suggest that higher levels of participation over time are associated with more favorable developmental outcomes (Bohnert, Martin, & Garber, 2007; Denault & Poulin, 2009b; Mahoney, Harris, & Eccles, 2006), but concern exists among parents and professionals that adolescents who spend excessive amounts of time participating in organized activities (e.g., >20 hours/week) may experience negative effects (Mahoney et al., 2006). In

response to this concern, several researchers have examined the overscheduling hypothesis: the theory that a threshold may exist where participation is no longer beneficial to development (Farb & Matjasko, 2012). Although this is a notable concern, researchers have found limited support for this hypothesis (Bohnert et al., 2010; Mahoney et al., 2006). Among researchers who have found a threshold effect (a point at which more involvement may be associated with unfavorable outcomes), their results suggest that the threshold is quite high (Busseri et al., 2006; Rose-Krasnor, Busseri, Willoughby, & Chalmers, 2006). Furthermore, the vast majority of adolescents spend considerably more time in unstructured leisure activities (e.g., watching television) versus structured activities (Mahoney et al., 2006; Mahoney & Vest, 2012). A threshold effect may be even less likely among adolescents living in disadvantaged contexts due to generally lower levels of participation compared to their wealthier counterparts (Larson, Richards, Sims, & Dworkin, 2001; Pedersen, 2005; Quinn, 1999). Thus, overscheduling of organized activities is likely improbable among these youth. Yet, possible repercussions of overscheduling are concerning. One way to examine potential overscheduling is to sum behavioral engagement (intensity) across all activity domains to account for adolescents' total activity involvement (Bohnert et al., 2010). In addition, testing for nonlinear trajectories may also help account for patterns of participation that may be associated with overscheduling (Bohnert et al., 2010; Mahoney et al., 2006). In order to investigate possible overscheduling, researchers need to account for aggregate activity involvement and consider non-linear trajectories of participation.

Researchers have found that organized activity participation is a dynamic phenomena that may vary throughout adolescence (Farb & Matjasko, 2012). Some have found that participation generally decreases during the high school years (Denault & Poulin, 2009a). Other researchers

have found that participation may remain consistent (Mahoney et al., 2003; Zaff et al., 2003) or even increase during adolescence (Mahoney et al., 2003). These inconsistent findings may be explained in several ways. First, given the multitude of approaches to activity participation measurement (Bohnert et al., 2010; Farb & Matjasko, 2012; Zaff, Kawashima-Ginsberg, & Lin, 2011), inconsistencies may be associated with how participation is operationalized. Notably, few use a multidimensional approach that considers both behavioral and psychological engagement even though these factors may change over time. Second, inconsistencies may also be associated with the sample characteristics; some studies include nationally representative samples, others examine primarily white, middle class samples and few include urban, minority samples (Farb & Matjasko, 2012; Feldman & Matjasko, 2005; Lauer et al., 2006). Finally, these inconsistencies may be found because distinct subgroups of participation trajectories over time may exist. Examining a single pattern or trajectory of organized activity participation assumes that all adolescents within a population follow the same pattern over time (Jung & Wickrama, 2008). Researchers examining change of participation over time have not taken into consideration that different subgroups of youth may have distinct trajectories of change. Most researchers who have investigated change in participation over time have used a growth curve modeling approach (GCM); GCM captures individual differences in developmental trajectories over time (Duncan, Duncan, & Strycker, 2006). Yet, GCM assumes that a single growth trajectory will adequately approximate the entire sample population (Jung & Wickrama, 2008). Organized activity participation may instead be more adequately represented through considering multiple distinct trajectories. Other researchers have examined differences in participation trajectories based on characteristics such as activity context (e.g., school, church, community), but this does not take into account aggregate participation over time. Few researchers have examined distinct

subgroups of participation with different patterns of change over time. Efforts to investigate change over time across contexts may help our understanding of the forms that adolescent participation takes over time and what factors contribute to different trajectories.

Factors Related to Participation Trajectories

Sociodemographic factors, self-selection characteristics, predisposing factors and participation context may all influence adolescents' participation trajectories. Self-selection characteristics are individual-level factors that have been established empirically as factors that create bias in terms of which students elect to participate (Farb & Matjasko, 2012; Linver, Roth, & Brooks-Gunn, 2009; Zarrett et al., 2009). Predisposing factors, in contrast, are developmental factors that may facilitate or inhibit prosocial behaviors such as organized activity engagement (Gielen & McDonald, 2002). Participation context refers to the setting in which the activity takes places such as school, church or community.

Sociodemographics. Among sociodemographic characteristics, researchers have found that youth whose parents have higher levels of education are more likely to participate in organized activities than youth whose parents have less education (Bartko & Eccles, 2003; Linver et al., 2009). Participation may also vary by sex. Some researchers examining potential sex differences suggest that females generally participate more than males (except sports) (Eccles et al., 2003), while others suggest no sex differences (Pedersen, 2005). Denault and Poulin (2009b) found, however, that sex was associated with initial levels of participation depending on activity (e.g., sports versus school-based clubs) and that sex was not associated with change in participation over time. Thus, it is vital to account for sociodemographic characteristics when investigating participation trajectory subgroups among adolescents.

Self-selection. Self-selection factors, such as self-esteem and academic achievement, may also influence participation trajectory and who may be more or less likely to participate (Linver et al., 2009). Adolescents who start high school with higher levels of self esteem may be more likely to engage in (or select into) organized activities because of the high levels of competition and skill required to participate (Farb & Matjasko, 2012; Linver et al., 2009). Academic achievement may also be associated with self-selection. Researchers have reported consistently a relationship between academic achievement (often measured by GPA) and participation (Eccles & Gootman, 2002; Linver et al., 2009; Roth, Malone, & Brooks-Gunn, 2010), but most of them examine academic achievement as an outcome. Some researchers suggest that academic achievement may remain fairly consistent throughout the high school years (Gottfried, Fleming, & Gottfried, 2001; Gottfried, 1985). Thus, although more participation is associated with higher academic achievement, youth with higher levels of participation may also be more likely than non-participants to do well in school in the first place. Consequently, academic achievement may be a self-selection factor associated with organized activity participation.

Predisposing factors: risk and promotive. Predisposing factors are variables that may influence the likelihood that a youth's trajectory may be similar to some and different from others (i.e., membership in a particular participation subgroup). Predisposing factors may be risk (i.e., increase likelihood of negative developmental trajectories) or promotive (i.e., support positive developmental trajectories).

Risk factors. Substance use, conflict in the family environment and negative influences of friends may decrease the likelihood that youth will participate in organized activities over time. Substance use during early adolescence increases the risk of negative outcomes such as

violent behavior and educational failure; early substance use may also decrease the likelihood that youth participate in organized activities during mid- to late-adolescence (Catalano, Kosterman, Hawkins, Newcomb, & Abbott, 1996; Hawkins, Catalano, & Miller, 1992; Windle & Windle, 2009). Thus, in addition to increasing the likelihood of negative outcomes, substance use may also inhibit participation in activities that contribute to developmental assets and resources such as organized activities.

Conflict in the family may also result in less participation over time. Family-related factors are important influences on development, and conflict in the family is associated with negative outcomes among youth such as delinquency, violence and mental health disorders (Cobb, 2007; Gorman-Smith, Tolan, & Henry, 2000; Kennedy, Bybee, Sullivan, & Greeson, 2010). The effect of conflict in the family on promotive opportunities such as organized activity participation during adolescence is not well known.

Negative peer influences, such as having friends who engage in substance use or violence, increases risk of negative developmental trajectories (Hawkins, Herrenkohl, & Farrington, 2000; Youniss & Haynie, 1992). Yet, negative peer influences may also decrease the likelihood of engaging in PYD-related opportunities such as organized activities. Despite the notable influence of peers during the time of life, peer group is not frequently examined as a predictor of participation over time.

Most researchers investigating risk factors and participation have made conclusions based on white, middle class or nationally representative samples. Consequently, the effects of risk factors on organized activity participation are less well understood among youth living in urban, disadvantaged contexts who likely have higher exposure to risk (Like, 2011; Sampson & Wilson, 2005). Although developmental risk factors have been frequently examined as predictors of later

negative outcomes, few researchers have studied how risk factors may also influence the likelihood engaging in promotive pursuits, including participation over time during adolescence.

Promotive factors. Developmental promotive factors, like parent support and school attachment, may influence how youth participate over time. Parent support and school attachment are critical promotive factors that may influence participation trajectories during high school. Although family relationships change during adolescence, parents continue to be an vital source of support for youth (Cobb, 2007). Researchers have found that parent-related factors, such as beliefs about organized activities and parents' own extracurricular involvement, influence activity participation during early adolescence (Denault & Poulin, 2009b). Less studied, however, is the association between parent support and organized activity participation over time. Parent support may provide youth with encouragement to engage in developmentally promotive pursuits such as organized activities, especially as they become more independent during mid- to late adolescence.

School attachment is another promotive factor that may be associated with patterns of organized activity participation over time. Researchers have found that adolescents who report higher levels of school attachment are more likely to engage in organized activities (specifically school-based) than adolescents with lower levels of attachment (Linver et al., 2009; Mcneely, Nonnemaker, & Blum, 2002). Researchers, however, have rarely investigated how school attachment may be associated with different participation trajectories during the high school years.

Most researchers examining promotive factors associated with participation have explored these relationships among primarily White, middle class or nationally representative samples. Consequently, the effects of promotive factors on organized activity participation over

time among adolescents living in urban, disadvantaged contexts are not well understood. Taken together, these results suggest that developmental risk and promotive factors may be an important influence on adolescents' participation patterns (trajectories) over time and that more research examining these relationships among urban, disadvantaged youth is needed. Yet, other factors, such as activity context, may also influence the likelihood of an adolescent following one trajectory or another.

Participation Context

Participation across contexts may influence the likelihood of following a particular participation trajectory. Prosocial interactions with peers and adults across contexts (e.g., school, church and community) and over time may provide expanded opportunities for resource building and skill development to support positive youth development (Linver et al., 2009; Pedersen, 2005). Linver et al (2009) found, for example, that adolescents who demonstrated patterns of participation across multiple contexts were more likely to report higher levels of developmental assets compared to those participating in a single context. Although researchers suggest that participation in multiple contexts may be especially beneficial to positive youth development, more research is needed to examine how single or multiple contexts may influence adolescents' likelihood of following a particular participation trajectory.

In the current study, I address the issue of participation trajectories and factors that may influence these trajectories explore the following hypotheses: I expect to find multiple (at least 3) groups or classes of participation trajectories that exist among youth during the high school years. I also expect that developmental risk factors, including substance use, conflict in the family environment and negative influences of friends, and promotive factors including parent support and school attachment, will influence the likelihood of following a particular

participation trajectory controlling for sociodemographics and self-selection. I expect that the presence of risk factors will increase the likelihood of a lower level participation trajectory and promotive factors will increase the likelihood of higher level participation trajectories during the high school years. Finally, I hypothesize that adolescents who participate in multiple contexts will be less likely to follow a low level trajectory compared to those participating in a single context. My study builds on this previous research in the following ways. First, I utilize a measure of participation that is developmentally-informed and incorporates both behavioral and psychological engagement. Second, I examine possible subgroups (classes) of organized activity participation trajectories among adolescents during the high school years. This approach differs from growth curve modeling because it does not assume that the participation trajectories for all participants can be approximated with a single growth curve; this approach allows the possibility of different growth trajectory subgroups within the larger sample of participants (Jung & Wickrama, 2008). Third, I investigate the influence of predisposing factors and single versus multiple activity contexts on these trajectories while accounting for sociodemographic and self-selection factors related to activity participation using PYD and developmental-ecological frameworks. Predisposing factors included developmentally-focused risk and promotive factors. Fourth, I examine these trajectories and their correlates among a sample of youth living in an urban, disadvantaged community- an understudied group in the participation literature.

Method

Research Context

The current study includes participants from Flint, Michigan. The city of Flint is unique in that it has seen much economic prosperity and misfortune throughout the years. Transitioning from a manufacturing to service economy has had a strong effect on the life-circumstances of

young people in Flint. At one time, Flint and surrounding Genesee County was one of the most affluent metropolitan areas in the U.S. because of high-paying manufacturing jobs. In the past 40 years, however, over 70,000 auto industry jobs have been lost, and the population has declined by half. Like many urban Michigan communities facing declining populations, the city faces extreme economic challenges resulting in high rates of crime and violence.

Participants

This study is based on 4-years of data collected as part of a longitudinal study of youth from mid-adolescence (i.e., high school years) to young adulthood. Data were collected from 850 adolescents at-risk for high school dropout at the beginning the ninth grade in four public high schools in a Flint, Michigan. Youth were eligible to participate in the initial study if they were in ninth grade enrolled in one of Flint's four main public high schools with an eighth grade GPA of 3.0 or below and were not diagnosed as having developmental impairments (Zimmerman, Ramirez-valles, Zapert, & Maton, 2000). Waves 1 through 4 correspond to the participants' high school years. The full sample included 52% female, 80% African-American, 18% White at Wave 1. Mean age at Wave 1 was 14.86 years (SD=0.64). In order to focus on our investigation on organized activity participation among an understudied group of adolescents, I included only African American respondents in our analyses (N=681 at Wave 1, 49% male). Following institutional IRB approval and necessary parental consent and participant assent, data were collected during in-school interviews.

Measures

Descriptive statistics for the measures used in this study are reported in Table 2.1. All predictors of class membership were assessed at Time 1. Organized activity participation was calculated annually during the four high school years.

Organized Activity Participation. I measured organized activity participation using student-report of behavioral (intensity) and psychological (importance) engagement. Participants were asked annually to list up to four activities each for school, church and community contexts. For each activity, students were asked to report how often they participated using a 4 point frequency scale (1=hardly ever; 4= most of the time) and how important the activity was to them using a 4 point scale (1=not important; 4=very important). Non-participants were coded as zero. I created a composite score for each activity by multiplying student's reported frequency by importance. I then summed activity scores within and across domains (school, church and community) to obtain an aggregate participation score. Scores could range from 0 to 256 per wave (the high score would require scores of 16 per activity for 12 activities), but the highest score was 119. Thus, if a participant attended an activity "most of the time" (4) and rated it as "very important" (4) that activity's score would be 16 (4x4). A student in the 99th percentile of participation, for example, was involved in 7 of such activities. Table 2.1 includes means and standard deviations of organized activity participation for youth in the current study.

Risk factors.

Substance use. I calculated substance use as the sum of alcohol, cigarette and marijuana use reported in the last 30 days. Respondents were asked how often they had consumed alcohol and marijuana from 1=none to 7=40 or more times and cigarettes from 1=not at all to 7=two or more packs per day. To create a sum substance use score, I standardized past 30-day use for each substance and summed them.

Negative influence of friends. I calculated negative influence of friends as the mean of 17 items asking about the number of friends engaging in negative behaviors. Items were scored

from 1=none to 5=all. Sample items include how many of the respondent's friends have used substances at school, been suspended, gotten into fights and carried a weapon (α =0.90).

Conflict in the family environment. I measured conflict in the family environment with 5 items from the Family Environment Scale (Moos & Moos, 1986). Items include how often family members fight, get so angry they throw things, lose their tempers, criticize each other and hit each other in anger from 1 (Hardly ever) to 4 (Often). I calculated the conflict in the family environment score as the mean of these five items (α=0.76).

Promotive factors.

Parent support. I measured parent support with 5 items from Procidano & Heller's (1983) Perceived Social Support- Family (PSS-Fa) scale. Participants were asked, for example, if their parents enjoyed hearing what they thought, if they relied on their parents for emotional support and if they had a caring relationship with their parents. Response options ranged from 1 (Not true) to 5 (Very true). I calculated parent support as the mean of the five items (α=0.89).

School attachment. I measured school attachment with 5 items, rated from 1=strongly agree to 4=strongly disagree, about how respondents felt about school (Hawkins et al., 1992). Sample items included "I like school" and "I like my classes this year". School attachment was the mean of these 5 items (α=0.70).

Controls: sociodemographic and self-selection factors.

Parent education. I used the highest reported education level (from 1=completed grade school or less to 7=graduate or professional school after college) between respondents' parents. If only one parental education score was provided, I used that score in the analyses.

Self-acceptance. I used the Bentler Psychological Inventory (BPI), Self-acceptance subscale (Bentler & Newcomb, 1978) to measure adolescent's self-acceptance. I calculated the

score as the mean of four items, asking the respondent to report how true pairs of statements are for them, such as (I am) happy with myself or unhappy with myself, from 1=the first statement is true for me to 5=the second statement is true for me (α =0.64).

8th grade GPA. Grade point average in this study was at the end of 8th grade, on a 4-point scale. 4.0=A to 1.0=D, summed and divided by the number of classes.

Data Analytic Strategy

I used a person-centered approach, which focuses on relationships among individuals in order to best classify them into groups; the goal being that as a result of this classification, individuals within groups are more similar than between groups (Jung & Wickrama, 2008). I used growth mixture modeling (GMM) (Ram & Grimm, 2009), to model possible heterogeneity among urban youth in organized activity participation with MPlus version 7 (Múthen and Múthen, 2013) (Figure 2.1). Whereas conventional growth models assume that growth trajectories of all individuals can be captured by estimating a single growth parameter, GMM allows differences in growth trajectories across unobserved (latent) subgroups (Jung & Wickrama, 2008; Múthen, 2004; Ram & Grimm, 2009). Thus, I tested if two or more subgroups, or classes, of participation trajectories existed within this sample, with the goal of estimating the optimal class membership for each participant (Schaeffer, Petras, Ialongo, Poduska, & Kellam, 2003).

I followed a model building strategy as suggested by Jung and Wickrama (2008). First, I specified a single-class latent growth curve model, utilizing descriptive analyses of organized activity participation over time, inclusion of linear and quadratic growth terms and comparisons of model fit to determine the optimal functional form (Singer & Willett, 2003). Next, I specified an LCGA (latent class growth analysis) model (i.e., a model that fixes within class variance on

growth factors to zero) to identify the optimal number of classes without covariates. I next determined the optimal number of classes with covariates. Múthen (2004) recommends estimating GMM with covariates, as covariates may affect class membership and thus model specification. Although determining final class structure after covariates are added has been questioned (see Tofighi & Enders, 2008), empirical and theoretical research support the notion that the covariates examined in the current study may influence class membership. The covariates in the present study represent indicators of selection bias so are conceptually justified for the analysis as well. I used theoretical and empirical justification, fit statistics (log-likelihood, Akaike information criterion (AIC) and sample-adjusted Bayesian information criterion (aBIC) values and Lo-Mendel-Rubin adjusted Likelihood Ratio Test (LRT) to compare models to those with one fewer class) and parsimony to determine the number of classes (Jung & Wickrama, 2008). I considered entropy (how well the model predicts individual's class membership) (Ram & Grimm, 2009), successful convergence, interpretability and substantive theoretical meaning of the class structure. (Jung & Wickrama, 2008). I rejected classes that were less than 1% (Jung & Wickrama, 2008) and not substantively meaningful and did not achieve successful convergence. Additionally, I sought to verify that the identified class structure was not due to the notable number of non-participants in the sample (approximately 25%); I removed the non-participants at Wave 1 and again explored the class structure, which remained unchanged. Finally, I freed within-class variances of the intercepts and slopes to allow for the possibility of heterogeneity within the latent classes (Ram & Grimm, 2009). Following the latent class analysis, I conducted post-hoc comparisons of participants in each class to see if they differed by context of participation (school only, church/community only or both) using chi square test.

Missing Data

Researchers use different approaches for handling missing data on time-varying and time-invariant covariates, including multiple imputation (MI) and full information maximum likelihood (FIML) (Schenker et al., 2006; Schlomer, Bauman, & Card, 2010). Although researchers debate the best method of handling missing data, some suggest that FIML and MI are equivalent methods, both preferred over deletion approaches or nonstochastic imputation methods (e.g., mean imputation) (Enders, 2010; Schlomer et al., 2010). Allison (2012) suggests that FIML may be a superior method for handling missing data because it consistently produces the same results, implementation decisions involve less uncertainty and the method estimates a single model rather than multiple models, thereby reducing potential conflict between imputation and analysis models. FIML does not impute values into new datasets, but rather estimates parameters based on available complete data and implied values for missing data conditioned on observed data (Schlomer et al., 2010). In the current study, I used FIML to address missing data on both time-varying and time-invariant variables. For participation, sample sizes by wave are provided in Table 2.1.

Results

Descriptive statistics

Observed means of activity participation over time is depicted in Figure 2.2. Approximately 75% of adolescents participated in at least one school, church or community activity at Wave 1, 67% at Waves 2 and 3, and 50% at Wave 4. Total sample participation across the four waves of data appears to have a fairly consistent, low-level across the high school years, with some decline overall from freshman to senior year.

Growth Models and Trajectory Classes

I modeled change in participation over time, with Wave 1 equivalent to the beginning of 9th grade. Mean age at each wave differed by 1 year and thus subsequent waves correspond to the beginning of 10th, 11th and 12th grades. Similar to Coie et al (1995), I used grade as opposed to age among adolescents because grade is more of a social measure of time and thus developmentally appropriate for this age group. Descriptive analyses of participation over time and model building results for the single-class latent growth curve model suggested that a linear growth parameter best fit the data (results not shown). Next, I compared one-, two-, three- and four-class solutions to identify the best fitting model. Results without covariates (not shown) and with covariates suggested that a three-class model best fit the data. Model building results with covariates are given in Table 2.2. Latent class trajectories are depicted in Figure 2.3. The classes consisted of a low-level activity participation class that decreased participation over time (74% of the respondents, N=502), a moderate-level consistent participation class (21% of the respondents, N=143) and a moderate initial-level increasing participation class (5% of the respondents, N=33).

Following estimating the LCGA with covariates, I examined the intercept and slope variances for each class to explore within-class heterogeneity. All combinations of freeing slope and intercept variances within class resulted in issues with parameter and standard error estimation, such as a non-positive-definite covariance matrix. The estimation issues and information from exploratory plots suggested limited within class variability in organized activity participation intercept and slope. Consequently, my models moving forward included within class intercept and slope variances fixed to zero (LCGA) as this approach best fit the data.

Predictors of Class Membership

Three-class model estimates with covariates are provided in Table 2.3. The coefficients in Table 2.3 represent the change in log odds/odds of membership in a given class relative to the comparison or reference class, in this case the moderate/consistent participation group. Among demographic (sex and parent education) and self-selection (self-acceptance, 8th grade GPA), higher parent education was associated with lower odds of being in the low/decreasing versus moderate/consistent participation groups and higher self acceptance was associated with higher odds of being in the moderate/increasing versus moderate/consistent group. A higher 8th grade GPA was associated with lower odds of being in the low/decreasing versus moderate/consistent participation group. Among risk factors, higher substance use was associated with higher odds of being in the low/decreasing versus moderate/consistent and moderate/increasing participation groups; a one unit increase on the 30-day substance use scale was associated with a 21% increase in the odds of being in the low/decreasing versus moderate/consistent participation group. Among promotive factors, parent support was associated with class membership. Higher levels of parent support were associated with lower odds of being in the moderate/increasing versus moderate/consistent group; for every one unit increase in parent support, the odds of being in the moderate/increasing group compared to consistent group decrease by 55 percent.

Participation Context and Class Membership

Following my examination of class membership predictors, I sought to investigate if trajectories differed by participation context. I examined if participants involved in school only, church/community only or both church and community contexts by trajectory class (See Table 2.4). Results from the Chi-Square analyses indicate that there are no differences in school only or church/community only participation by trajectory class. The results indicate that there were

differences in multiple-context (both church/community and school) participation by trajectory class. A higher proportion of adolescents in the moderate/increasing and moderate/consistent participation groups (69.1% and 60.1%, respectively) reported participating in multiple contexts of organized activities compared to the low/decreasing participation group (30.1%) (χ^2= 55.45, p<.0001).

Discussion

Participation in organized activities enhances positive youth development (PYD) through providing opportunities to build skills, self-confidence, prosocial relationships and reduce risk of negative outcomes (Eccles & Gootman, 2002; Gardner et al., 2008; Mueller et al., 2011). Yet, these promotive effects may vary according to different participation trajectories that adolescents may follow. My study is one of the few to identify different subgroups of participation trajectories and predisposing and contextual factors related to subgroup membership. Guided by PYD and developmental-ecological frameworks, I identified several factors that increased or decreased the likelihood of following a particular trajectory, including sociodemographic and self-selection factors, predisposing risk and promotive factors and participation contexts.

Overall, my results suggest three distinct trajectories: low initial level, decreasing participation over time; moderate initial level, consistent participation and moderate initial level, increasing over time. These participation classes are consistent with patterns of participation over time reported by other researchers (Denault & Poulin, 2009b; Mahoney et al., 2003; Zaff et al., 2003). In determining these trajectories, I explored the possibility of overscheduling. I did not, however, find support for overscheduling within this sample. My results suggested that developmental risk and promotive factors may influence the trajectory of participation that

adolescents are likely to follow during the high school years. Investigating factors that may influence participation trajectory group membership among youth in this sample contributes to our understanding of how risk and promotive factors may influence engagement in contexts that support positive development.

I found that, among predisposing factors, substance use and parent support were associated with participation trajectory subgroup (class) membership. Higher levels of substance use by 9th grade were associated with higher odds of being in the low/decreasing participation trajectory subgroup compared to the moderate/consistent subgroup. My results suggested that youth who engage in substance use early in adolescence may be less likely to become involved over time in activities that support positive development. One explanation for this finding is that the negative effects of substance use may be multifold. Substance abuse may both increase the odds of negative outcomes and impede opportunities for participation in activities that support positive development (Catalano et al., 1996; Hawkins et al., 1992; Windle & Windle, 2009). Efforts directed toward substance use prevention and engaging youth in organized activities during early- and mid-adolescence may help increase the likelihood of supporting positive developmental trajectories and reducing risk of detrimental behaviors such as substance use (Fredricks & Simpkins, 2012; Mahoney, Larson, et al., 2005).

Higher parent support was associated with higher odds of moderate/consistent versus moderate/increasing participation class membership. Although this result does not support my a priori hypothesis that adolescents with the highest levels of parent support would also be those who participate the most, one explanation for this finding is that teens who perceive less parental support may become more engaged in organized activities over time to develop other meaningful, supportive relationships (Lerner, 2005; Zimmerman, Stewart, Morrel-Samuels,

Franzen, & Reischl, 2011). Thus, adolescents who increase levels of organized activity participation during adolescence may be adaptively seeking additional support from non-familial adults. Nevertheless, we should not over-interpret this finding because adolescents in the consistent group did report relatively high levels of parent support.

School attachment was not associated with participation class membership. This was inconsistent with my hypothesis derived from prior research. One reason for this result may be due to the conceptualization of participation as a multi-context construct. Many researchers who have examined the relationship between school attitudes and participation included only organized activities within school contexts (Linver et al., 2009; Mcneely et al., 2002). Although my measure included a broader scope of participation including school, my focus of participation across contexts may have made the relationship between school connectedness and participation more difficult to detect. Although school attachment may be associated with higher levels of participation, this relationship may be limited to activities within the school context.

Among self-selection factors, adolescents with higher academic achievement had lower odds of belonging to the low/decreasing participation class than to the moderate/consistent participation class. This is consistent with other researchers' findings of an association between academic achievement and participation (Eccles & Gootman, 2002; Linver et al., 2009; Roth et al., 2010). Youth in this study who had higher GPAs in 8th grade, even among this academically at-risk sample (GPA 3.0 or below), were more likely to be in a higher participation trajectory subgroup. Consequently, my results also suggest that youth need not attain the highest levels of academic achievement to increase the likelihood of belonging to a higher participation subgroup. Even moderate levels of academic success may influence the likelihood that youth participate in positive developmental activities over time. Youth-oriented professionals who utilize organized

activities to promote PYD, particularly within disadvantaged areas, may focus on elevating academic achievement as a way to encourage the positive relationship between academic success and organized activity participation over time. Thus, through promoting academic achievement, professionals and other adults working with youth may also help youth engage in opportunities to build assets and resources related to PYD through organized activities.

Sex was not associated with participation trajectory class membership. My results regarding sex are consistent with Pedersen's (2005) findings. One plausible explanation for not seeing sex differences may be because I did not distinguish specific activities within my participation measure (i.e., school sports vs. school clubs). Differences in engagement by sex may be very context specific and depend on the particular social environment and norms of the school, district or region (Barber et al., 2001; Hansen, Larson, & Dworkin, 2003). Future research examining possible differences in participation trajectories by sex may benefit from investigating factors related to the social environment in addition to considering differences by specific activities.

Self-acceptance was associated with participation trajectory class membership. Adolescents reporting higher self-esteem were more likely to be in the moderate/increasing versus moderate/consistent participation group. Adolescents with higher levels of self-esteem may participate in increasing amounts of activity over time because of the high level of skill potentially required for activities (Farb & Matjasko, 2012; Linver et al., 2009). Adolescents with high levels of skill may have higher levels of self-acceptance, which, in turn, may also make them more prone to expand their level of participation over time. More in-depth research investigating self-acceptance among all participation subgroups, including ways to increase both

self-acceptance and participation among the low/decreasing group, would be a useful program of future research.

My results indicated that participation across contexts was associated with trajectory class membership among urban youth. Participation trajectory membership was not associated with participation in single contexts. I found no differences in trajectory class membership between adolescents who engaged in only school or only church/community contexts. Trajectory class membership, however, did vary for youth involved in multiple contexts. Youth who participated in school and church/community contexts were more likely to be in the moderate/consistent or moderate/increasing participation trajectory groups than the low/decreasing group. My results are consistent with researchers who suggest that participation across multiple contexts (including school and church/community) may be particularly beneficial to youth development (Linver et al., 2009; Pedersen et al., 2005). Guided by developmental-ecological and PYD frameworks, participation across contexts may be especially beneficial for positive development because an adolescent that experiences proximal processes (interactions between the person and immediate environment) across contexts such as school, church and community, may have greater opportunities to develop a wider range of assets and resources than those involved in only one context (Lerner, 2002, 2005). This has important implications for professionals interested in adolescent development through organized activities. Professionals interested in promoting positive development and engagement over time may benefit from structuring activities so youth are exposed to multiple participation contexts as a way to expand opportunities for building developmental assets and resources. School-based programs, for example, might consider or collaborating with a youth serving organization to enhance the promotive potential of participation and increase sustained engagement over time.

Limitations

Although this is one of the first attempts to examine subgroups of participation trajectories among academically at-risk adolescents, several limitations of this study should be noted. First, my study was conducted in one urban location so the results may not be generalizable to other community settings. Yet, this is a critical population to study as organized activities may be particularly beneficial for these youth, who are higher risk for negative developmental trajectories and may participate less than their higher SES counterparts (Bohnert et al., 2008; Pedersen et al., 2005). Second, the size of our moderate/increasing participation class was small (5% of the sample), so power to detect subgroup differences and conclusions regarding factors associated with subgroup membership compared to the other subgroups may be limited (Ram & Grimm, 2009). This proportion, however, falls within acceptable range for a latent trajectory class (Jung & Wickrama, 2008) and is substantively meaningful for understanding positive youth development (Mahoney et al., 2003). Future research that explores predictors of membership within this trajectory class would be useful because the increasing participation group is among the least studied, and there may be unique considerations to membership within this subgroup. Third, although my participation measure incorporated both behavioral and psychological engagement, this measure may not have captured other aspects of organized activity participation such as breadth. Furthermore, my measure included only a single measure of psychological engagement. Yet, my measure represents a unique contribution to participation measurement as it included multiple dimensions of organized activity engagement developmentally relevant for high school age youth. Most researchers have focused on single characteristics of participation. Moreover, I examined three different contexts within which participation may occur, including school, church and community. Fourth, my participation

measure itself did not include information about specific categories of activities such as school clubs, sports and arts. Although these specific activities have been linked to positive and negative outcomes among youth (Barber et al., 2001; Eccles & Gootman, 2002), activity categories have been defined in numerous ways (Barber et al., 2001; Denault & Poulin, 2009a; Fredricks & Eccles, 2006). Furthermore, relationships between specific activities and developmental outcomes vary depending on features of adolescents included in the sample, activity setting and social context. Thus, results regarding specific activities may be very population and context-specific. I emphasized organized activity participation more broadly, which allowed me the opportunity to investigate predisposing and contextual factors that may influence participation across activity types and contexts.

These study limitations notwithstanding, my results contribute to our understanding of adolescent organized activity participation in several key ways. First, I constructed a measure of organized activity participation that included both behavioral and psychological engagement. Second, I investigated possible subgroups of participation trajectories during the high school years. Third, I examined possible predictors of participation trajectory class membership including risk and promotive factors and participation context in an understudied subgroup of adolescents. Fourth, I account for important sociodemographic and self-selection characteristics associated with organized activity participation. In the final analysis, my results support heterogeneity within trajectories of organized activity participation. My results also suggest that predisposing developmental risk and promotive factors may influence the likelihood that an adolescent would belong to a particular participation trajectory subgroup. My study provides useful insights regarding factors may influence trajectory class membership, including substance use and activity contexts. Although promoting positive development is an important objective for

all youth, investigating factors that may increase or decrease the likelihood of engagement in promotive activities over time may be particularly important among adolescents living in urban, disadvantaged contexts. A useful next step for this research would be to examine how participation trajectory class membership may influence long-term outcomes associated with organized activities such as substance use, educational and employment related outcomes, psychological well-being.

Conclusions

Organized activities are central developmental contexts for adolescents that support positive youth development (PYD) and may help offset risk exposure (Fredricks & Simpkins, 2012; Lerner et al., 2011; Mahoney, Larson, et al., 2005). Organized activity participation trajectories may influence the degree to which participation influences positive development (Darling, 2005; Mahoney et al., 2003; Zaff et al., 2003). Developmental risk and promotive factors, in addition to sociodemographic and self-selection characteristics, may influence the likelihood of youth following a particular participation trajectory. This study provides a unique examination of the predisposing factors and contextual considerations associated with organized activity participation trajectory subgroups that considers participation over time and the risk, promotive and contextual factors that may hinder or enhance youth involvement.

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Table 2.1 Descriptive statistics for study variables

Time-varying	**Mean(SD)**
Participation[§] Wave 1 (N=681)	18.87(18.96)
Participation Wave 2 (N=646)	17.05(18.32)
Participation Wave 3 (N=621)	17.82(19.30)
Participation Wave 4 (N=588)	14.33(18.66)

Time-invariant*	**Mean(SD)**
Parent education	4.39(1.41)
Self-acceptance	4.51(0.70)
Substance use	-0.11(2.53)
Friends' negative behavior	1.99(0.69)
Conflict in the family environment	1.73(0.66)
8th grade GPA	2.02(0.68)
Parent support	3.94(1.03)
School attachment	2.88(0.70)

*****Time invariant measures from Wave 1, [§]Participation= sum of intensity x importance for each activity

Table 2.2 Fit statistics for participation LCGA by class solution

Model	**Log-Likelihood**	**AIC**	**SSABIC**	**Entropy**	**LMR LRT test**
1 class (growth model)	-12303.24	24670.48	24713.49	n/a	n/a
2 classes	-12210.63	24481.27	24521.59	0.88	211.78
3 classes	-9802.26	19670.51	19713.07	0.89	156.72*
4 classes	***	***	***	***	***

*p<0.05; LMR LRT test: Lo-Mendel-Rubin adjusted LRT TEST for N-1(Ho) vs. N classes

***4 class model did not successfully converge.

Table 2.3 Three class model results

LCGA Model results	**Intercept (SE)**	**Linear growth (SE)**
Class 1 (Low/decreasing participation group)	15.3(0.75)	-3.22(0.25)
Class 2 (Moderate/increasing participation group)	24.48(3.32)	14.46(1.37)
Class 3 (Moderate/consistent participation group)	30.55(2.26)	0.67(0.74)

Participation groups compared	**Low-Consistent**			**Increasing-Consistent**		
Predictor	**B**	**SE**	**OR**	**B**	**SE**	**OR**
Demographic & self-selection						
Sex◆	-0.36	0.25	0.70	-0.25	0.46	0.78
Parent education	-0.30**	0.10	0.74	0.07	0.21	1.07
Self-acceptance	0.22	0.18	1.25	0.91*	0.44	2.49
8th grade GPA	-0.57*	0.23	0.56	-0.32	0.39	0.73
Risk factors						
Substance use	0.19**	0.07	1.21	-0.09	0.14	0.91
Friends' negative behavior	0.12	0.21	1.01	-0.61	0.39	0.54
Conflict in the family environment	0.04	0.24	1.04	-0.93	0.56	0.40
Promotive factors						
Parent support	-0.29	0.16	0.75	-0.80**	0.26	0.45
School attachment	-0.37	0.21	0.69	0.02	0.36	1.03

*p<0.05 **p<0.01, ◆females: reference group

Table 2.4 Participation trajectory class by context

Trajectories	**Increasing *n(%)***		**Consistent *n(%)***		**Low *n(%)***		**X2**
Participation Context (Wave 1)	Yes	No	Yes	No	Yes	No	
School only	4 (12.1)	29(87.9)	18 (13.5)	115(86.5)	86 (16.8)	426(83.2)	1.21
Church/community only	5 (15.2)	28(84.8)	28 (21.1)	105(78.9)	115 (22.5)	397(77.5)	1.03
Both school and church/community	23 (69.7)	10(30.3)	80 (60.1)	53(39.9)	154 (30.1)	358(69.9)	55.45**

**p>0.0001, 158 participants did not engage in any activities at Wave 1

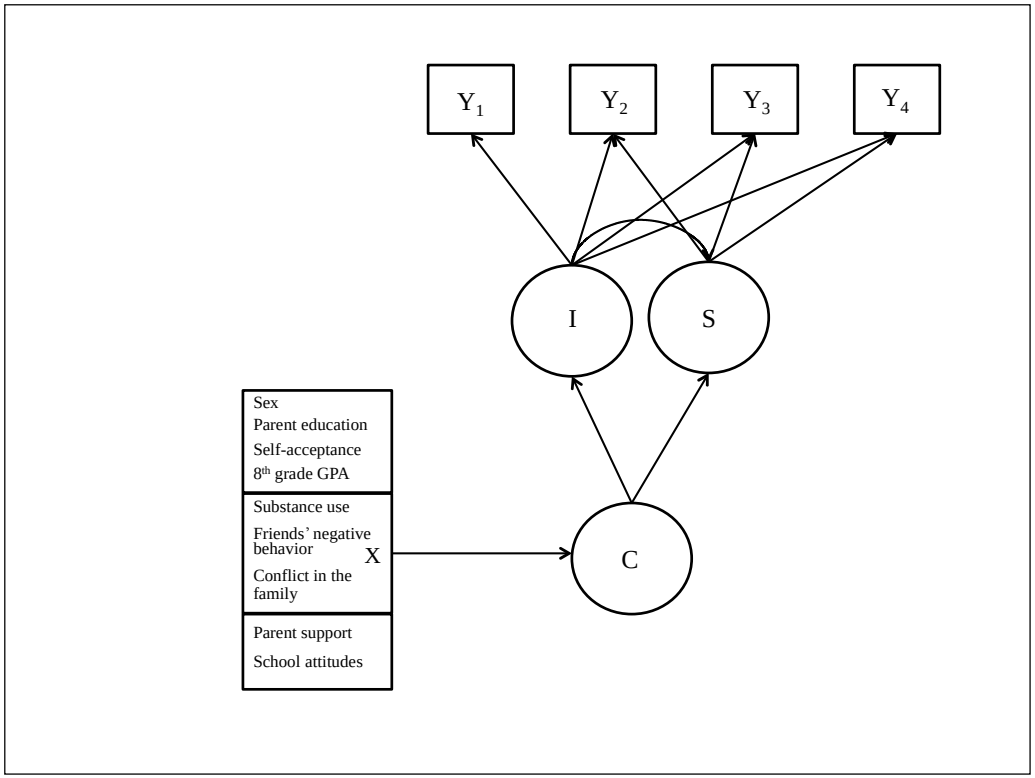

Figure 2.1 Growth Mixture Model Diagram. X: covariates, C: latent class variable, I: intercept, S: slope, Y_1-Y_4: repeated outcomes

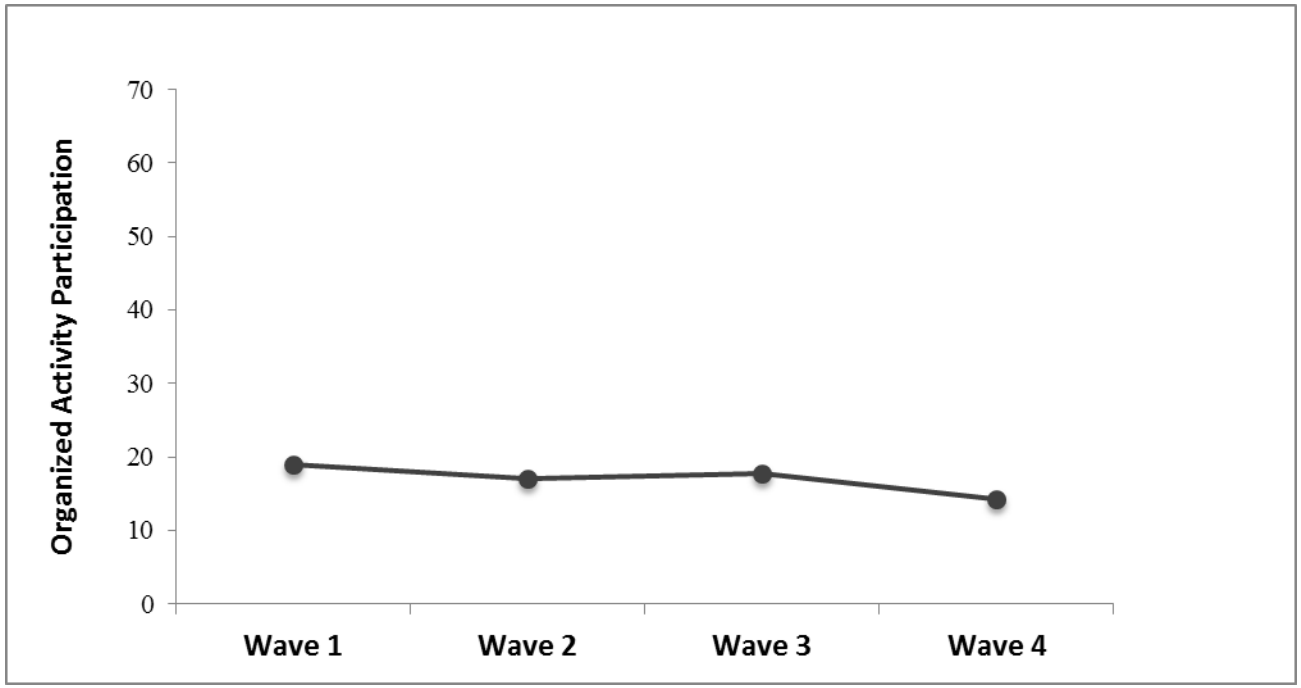

Figure 2.2 Observed means of organized activity participation by wave, corresponding to the high school years

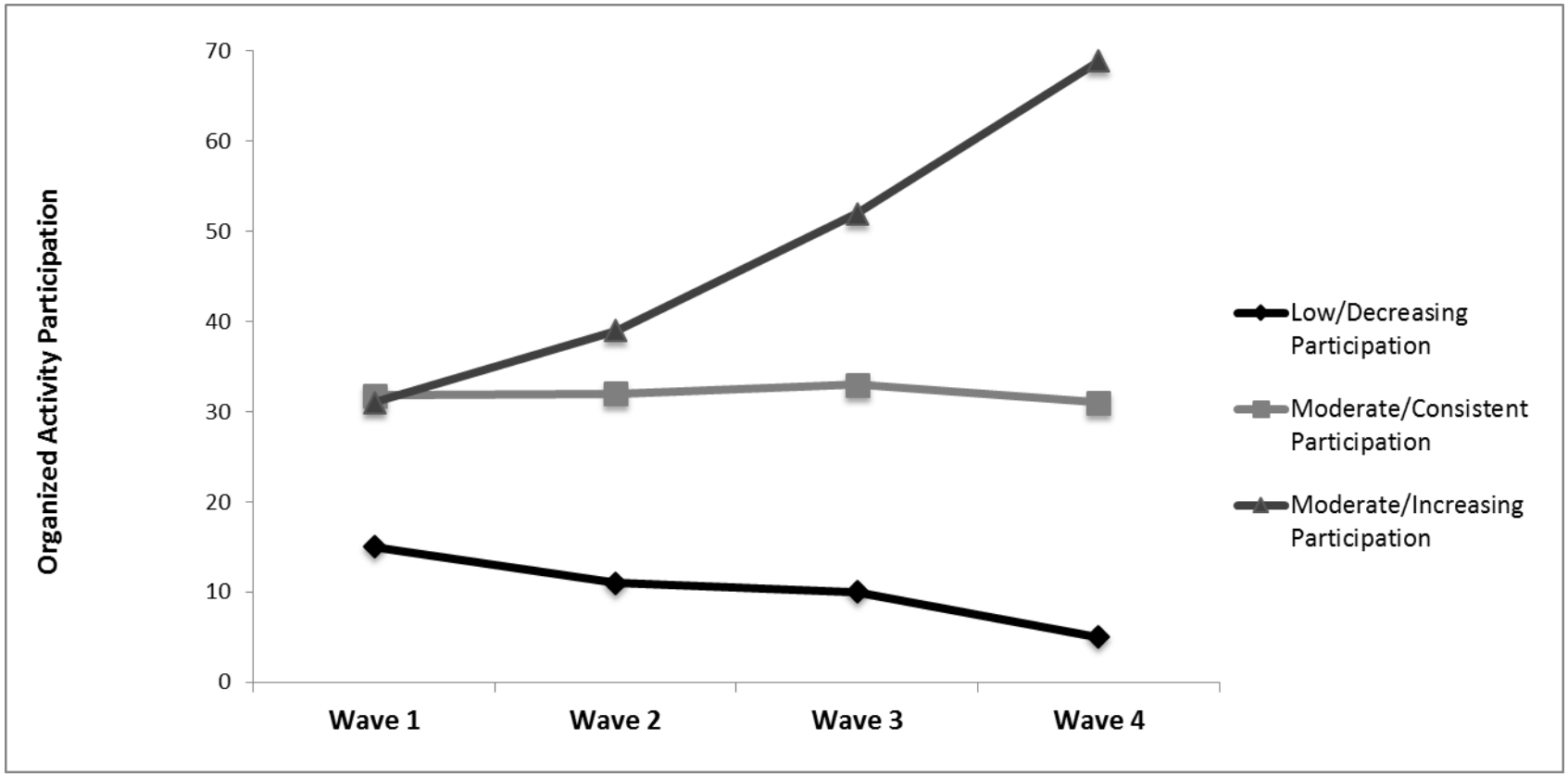

Figure 2.3 Model-estimated means for the three-class latent class growth analysis solution for organized activity participation, Wave 1-4 corresponding to the high school years

Chapter 3

Trajectories of Participation Among Urban Adolescents During the High School Years: Associations with Young Adult Outcomes

Introduction

Participation in organized activities provides vital opportunities for adolescents to develop assets and resources that promote positive developmental trajectories (Feldman & Matjasko, 2005; Mcneely, Nonnemaker, & Blum, 2002; Mueller, Lewin-bizan, & Urban, 2011). Organized activities refer to a broad-range of structured, adult-sponsored activities outside the school curriculum within diverse contexts including school, church and community (Bohnert, Fredricks, & Randall, 2010). Researchers have found that participation is associated with positive developmental outcomes and fewer problem behaviors during adolescence (Bohnert, Richards, Kohl, & Randall, 2009; Eccles & Gootman, 2002; Mcneely et al., 2002). Researchers have also found that positive outcomes associated with organized activity participation may extend into emerging adulthood (Gardner, Roth, & Brooks-Gunn, 2008; Mahoney, Cairns, & Farmer, 2003; Mahoney & Vest, 2012; Zaff, Moore, Papillo, & Williams, 2003). Emerging adulthood refers to the age period starting in the late teens through early twenties (approximately 18-25 years) (Arnett, 2000). Most researchers who have examined longer-term outcomes related to participation have examined outcomes within the emerging adulthood developmental stage, although it may not be referred to as such. Emerging adulthood is often included as part of a broader definition of early adulthood, from ages 18-40, although the lives of people in their late teens and early twenties are often very different than people in their 30s or 40s (Arnett, 2007).

Thus, although researchers have reported that the positive effects of participation extend into emerging adulthood, few researchers have examined if these effects continue into early adulthood, sometime between the ages of 25 and 40.

Theoretical Background

Positive youth development (PYD) and the developmental-ecological model provide useful frameworks for examining how participation in organized activities over time may influence young adult outcomes. Positive Youth Development (PYD) represents a shift in the focus of youth development from primarily a problem-based to a strength-based approach, with attention to factors that prevent negative outcomes and promote positive developmental trajectories (Damon, 2004; Lerner, 2002, 2005). Participation in organized activities may help promote positive development through opportunities to learn skills, gain confidence, develop healthy social relationships and build intellectual, social and/or physical competence (Bohnert et al., 2010; Gardner, Browning, & Brooks-Gunn, 2012; Lerner et al., 2005). PYD is a developmental systems-based model that emphasizes the plasticity of human development through interactions between individuals and their environment (Lerner, Lerner, & Benson, 2011). Using the developmental-ecological model, these interactions, called proximal processes, represent key forces shaping development that are influenced by the individual, the context, and the transaction between them over time (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006). The focus of PYD is on supporting proximal processes that help youth build promotive assets (e.g., individual skills) and resources (e.g., supportive relationships) for positive developmental trajectories (Lerner, 2002, 2005).

A critical feature of proximal processes is the extent of the interactions over time (Tudge, Mokrova, Hatfield, & Karnik, 2009). Engaging in organized activities over time influences how

proximal processes shape development. From a developmental-ecological perspective, the relative constancy or change of interactions over time within organized activity participation influences how this involvement may influence development (Tudge et al., 2009). Those who participate over time may benefit from longer-term exposure to the supports and opportunities that organized activities may provide (Gardner et al., 2008). Thus, youth who participate consistently or increasingly over time may have greater exposure to opportunities for building assets and resources that support positive development. This may be especially beneficial for youth living in urban, disadvantaged contexts, who are more likely to face stressors that put them at increased risk of negative developmental trajectories compared to youth living in more affluent areas (Like, 2011; Patton, Woolley, & Hong, 2012). Opportunities to build assets and resources may be a useful means to offset the negative consequences of risk exposure (Bohnert, Richards, Kolmodin, & Lakin, 2008; Fredricks & Simpkins, 2012). Consequently, the positive effects of engaging in proximal processes over time may influence risk behaviors, and health and well-being well into adulthood.

Organized Activity Participation: Issues and Measurement

Researchers have identified self-selection as a spurious factor that may account for some of the relationships between participation and positive outcomes (Eccles & Gootman, 2002; Gardner et al., 2008; Linver, Roth, & Brooks-Gunn, 2009). Because participation is largely voluntary and may be influenced by individual-level characteristics (e.g., motivation, self-esteem), selection-related factors are likely to influence the relationship between participation and positive outcomes. One potential self-selection factor is academic achievement. Researchers have consistently found a relationship between participation and academic achievement (Eccles & Gootman, 2002; Linver et al., 2009; Roth, Malone, & Brooks-Gunn, 2010). Participants may

be more likely than non-participants, however, to achieve in school in the first place (Gottfried, Fleming, & Gottfried, 2001; Hoffmann, 2006). Another possible self-selection factor is self-esteem. Adolescents who start high school with higher levels of self-esteem may also be more likely to or self select into organized activities because of the high levels of functioning and skill required for participation (Farb & Matjasko, 2012; Linver et al., 2009). Consequently, it is imperative to account for self-selection factors such as academic achievement and self-esteem when examining the relationship between participation trajectories and outcomes in young adulthood.

Sociodemographic characteristics may also influence participation trajectories during adolescence. Researchers have found that parental education is associated with adolescent organized activity participation; adolescents whose parents have higher levels of education are more likely to participate than those whose parents have less education (Bartko & Eccles, 2003; Linver et al., 2009). Sex differences in participation may also exist. Some researchers suggest that females generally participate at higher levels than males (except sports) (Eccles, Barber, Stone, & Hunt, 2003), while others have found no sex differences (Pedersen, 2005). Thus, it is vital to account for sociodemographic characteristics when investigating the relationship between participation trajectories and young adult outcomes.

Relationships between organized activity participation trajectories and young adult outcomes may also depend on how participation is measured. Participation is a multi-dimensional construct that has been conceptualized in many ways, including both behavioral and psychological engagement. Researchers have debated extensively the merit of incorporating various measures of behavioral engagement, including intensity (frequency of involvement) and breadth (number of specific activities) (Bohnert et al., 2010; Busseri & Rose-Krasnor, 2009;

Denault & Poulin, 2009a; Farb & Matjasko, 2011). Although each measures different aspects of behavioral engagement, adolescents during the high school years may participate in fewer activities more intensely compared to late childhood/early adolescence (Denault & Poulin, 2009a; Rose-Krasnor, Busseri, Willoughby, & Chalmers, 2006). Thus, intensity may best capture behavioral engagement for this age group. Yet, attendance alone may not be enough to reap the benefits of participation; other aspects of engagement, such as psychological engagement, may also be necessary for youth to obtain the maximum developmental benefit (Bohnert et al., 2010).

Psychological engagement is a vital aspect of participation in promoting positive developmental outcomes (Mcneely et al., 2002; Weiss, Little, & Bouffard, 2005). Psychological engagement refers to how youth perceive the experience of participating and its importance or relevance to them (Bohnert et al., 2010). How important an activity is to an adolescent likely influences its potential build assets and promote positive development (Bundick, 2011). Some researchers suggest that psychological engagement may be even more important for positive developmental outcomes than behavioral engagement (Adachi & Willoughby, 2014). Yet, despite the potential for both psychological and behavioral engagement to shape youth development and, in turn, influence later outcomes, few researchers have considered both behavioral and psychological aspects of engagement combined in a single measure and over time.

Participation and Adult Outcomes

Theoretical and empirical evidence generally support the relationship between organized activity participation and developmental outcomes, including into adulthood (Barber, Eccles, & Stone, 2001; Mahoney et al., 2003; Mahoney, 2000; Mueller, Phelps, et al., 2011; Zaff et al., 2003). Adulthood outcomes, including psychological well-being (depressive symptoms and life

satisfaction), substance use, employment-related outcomes (unemployment and positive job characteristics) and educational outcomes, may be influenced by both positive and negative developmental trajectories during adolescence. Consequently, factors that are generally associated with positive developmental trajectories such as organized activity participation may be associated with more favorable outcomes in adulthood.

Psychological well-being.

Depressive Symptoms. Organized activity participation trajectories may be associated with psychological well-being in young adulthood including depressive symptoms and life satisfaction. Depressive symptoms may have far reaching effects on social relationships and daily functioning as well as increase risk of harmful or negative behaviors during young adulthood (CDC, 2013). Among adolescents, some researchers have found that higher levels of organized activity participation are associated with lower levels of depressive symptoms (Bohnert et al., 2008; Fredricks & Eccles, 2006; Mahoney, Schweder, & Stattin, 2002), while others have found no association (Barber et al., 2001; Darling, 2005). Few researchers have examined the relationship between participation in adolescence and depressive symptoms in adulthood. Notably, Fredricks and Eccles (2006) found that activity participation during adolescence was not associated with depressive symptoms in emerging adulthood. Yet, this study did not account for growth in participation over time or consider distinct participation trajectories. The longer-term effects of different participation trajectories during adolescence on depression in young adulthood are largely unknown.

Life Satisfaction. Organized activity participation during adolescence may also be associated with life satisfaction in adulthood. Life satisfaction refers to one's overall cognitive appraisal of his/her quality of life (Diener, 1994). Life satisfaction may be an important

indicator of positive developmental trajectories and thriving during adolescence, consistent with PYD framework (Bundick, 2011). Individuals with high life satisfaction tend to possess developmental assets such as caring and strong social connections, which may contribute to higher resistance to stressors and better physical and mental health compared to those with low life satisfaction (Diener, 1994; Frisch, 2000). Thus, life satisfaction may be a key indicator for overall well-being. Researchers have found an association between organized activity participation and life satisfaction among youth (Bundick, 2011; Gilman, 2001). The psychological engagement aspect of organized activity participation may foster intrinsic psychological rewards of participation that, in turn, contribute to life satisfaction (Nakamura & Csikszentmihalyi, 2002). Although most researchers examining the relationship between participation and life satisfaction have included only life satisfaction in adolescence (Bundick, 2011; Gilman, 2001), the effects may extend into adulthood (Diener, 1994). Yet, few researchers have examined if participation during adolescence is associated with life satisfaction in young adulthood and if these effects vary by participation trajectory.

Substance use. The relationship between participation and substance use in emerging adulthood is equivocal. During adolescence, some researchers have found that organized activity participation is associated generally with less substance use (Bohnert, Aikins, & Edidin, 2007), while others have found that substance use varies depending on activity type (e.g., school sports vs. school clubs) and substance used (e.g., alcohol, marijuana or cigarettes) (Barber et al., 2001; Darling, 2005; Fredricks & Eccles, 2006). Researchers who have studied the effects of participation during adolescence and substance use in emerging adulthood also report mixed results, with some noting they are unrelated (Fredricks & Eccles, 2006; Mahoney & Vest, 2012) and others reporting that high school participation is associated with less substance use in

emerging adulthood (Carlo, Crockett, Wilkinson, & Beal, 2011). Importantly, other factors may influence the relationship between substance use and participation such as the trajectory or pattern of participation over time. Consequently, more research is need to examine how different participation trajectories during the high school years may be associated with substance use in young adulthood.

Employment-related outcomes.

Unemployment. Researchers suggest that organized activity participation during the high school years may be associated with occupational status, including unemployment, in adulthood. Gardner et al (2008) found that participation was associated with higher odds of full time employment during young adulthood, but only among those who had participated at least 2 years during high school. Similarly, Carlson et al (2005) found that adolescents who reported higher levels of participation were less likely to be unemployed in young adulthood compared to those who reported lower levels. Taken together, these results suggest that organized activity participation may be associated with young adult employment status. Yet, the relationship between participation during adolescence and employment in young adulthood may vary by pattern or trajectory of participation. Yet, few researchers have examined how different trajectories of participation during high school may influence employment status in adulthood.

Job Characteristics. Organized activity participation during adolescence may be associated with job characteristics in adulthood. Job characteristics include features such as decision latitude (decision authority in one's job) and job responsibilities (Karasek, 1979). Employees in jobs with high decision latitude and high responsibility are more likely to be in high prestige positions (e.g., public official, manager, engineer) that are linked with higher job satisfaction and better mental health than employees in jobs with high responsibility but low

decision latitude (Karasek, 1979; Karasek et al., 1998). Although job characteristics have important implications for mental health and job satisfaction in adulthood, few researchers have examined promotive activities during adolescence that may be associated with job characteristics in adulthood. Given the potential opportunity for organized activity participation to build skills, foster confidence and build intellectual and social competence (Bohnert et al., 2010; Gardner et al., 2012; Lerner et al., 2005), we may expect that youth who have developed these assets are more likely to secure high responsibility and high decision latitude jobs. Consequently, participation trajectories may be associated with positive job characteristics in adulthood, but few researchers have examined if different participation trajectories during adolescence are associated with positive job characteristics in young adulthood.

Educational outcomes. Researchers have generally supported the relationship between participation during adolescence and education-related outcomes such as college attendance and educational attainment in adulthood. Researchers have found that adolescents who participate more in organized activities have higher rates of college attendance compared to low/non participants in emerging adulthood (Gardner et al., 2008; Marsh & Kleitman, 2002; Zaff et al., 2003). These studies, however, only included educational status a few years following high school in nationally representative samples. Few researchers have investigated adolescent organized activity participation and young adult educational attainment among understudied subgroups of youth, such as those living in urban, disadvantaged communities. Furthermore, few researchers have examined how distinct trajectories of participation during adolescence may be differentially associated with educational attainment in young adulthood. Taken together, results from previous research examining participation during adolescence with adult outcomes suggest

that organized activity participation's promotive effects may be equivocal and additional research is needed to explore these relationships particularly during early adulthood.

Limitations of previous research

Issues across studies may, in part, explain the equivocal findings in the relationship between participation and adult outcomes. First, few researchers incorporate an approach that permits change in participation over time. Most researchers have used more crude measures of participation over time such as summing a dichotomous measure of participation over several years. Crude measures do not account for variation in how participation may change among youth during the high school. Other researchers have included measures of participation from one time point during high school to predict outcomes in emerging adulthood, but they did not account for change in participation over time (i.e., trajectories) during the 4 years of high school. Few researchers have examined how different participation trajectories throughout the high school years may be associated with outcomes in young adulthood. A trajectory approach is advantageous, however, because it allows us to examine organized activity participation while considering the temporal nature of youth development. A trajectory approach may more accurately represent participatory behavior during this developmental period, often characterized by significant physical, social and emotional changes.

A second explanation for inconsistent findings across studies may be due to sample differences. Most researchers examining organized activity participation include nationally representative or white, middle class samples (with notable exceptions- see Bohnert et al, 2008 and Fredricks and Eccles, 2006 for examples). Yet, the relationship between participation during adolescence and young adult outcomes among some groups of youth, including those who live in urban, disadvantaged environments, may not be the same as more middle to upper income youth.

Third, some differences in findings may be due to the ways that participation was measured across studies. Some measures were more unidimensional while others included more multivariate approaches, but none of the researchers used a multidimensional measure of participation while also incorporating a trajectory approach. Moreover, the samples studied were mostly middle to upper socioeconomic status and when they did include more diverse individuals they were national studies with lower representation. Finally, most investigators have examined a small range of outcomes in young adulthood associated with high school participation.

Current study

In the current study, I attempt to address these gaps in the literature by investigating the relationship between organized activity participation during adolescence and multiple outcomes in young adulthood. I explore if these outcomes vary depending on distinct participation trajectory subgroups among a sample of young adults living in an urban, disadvantaged community guided by the following hypotheses: 1) Youth in the moderate/increasing and moderate/consistent participation trajectory classes (subgroups) will report lower levels of depression and higher levels of life satisfaction in young adulthood compared to those in the low/decreasing trajectory class. 2) Youth in the moderate/increasing and moderate/consistent participation trajectory classes will report lower levels of substance use in young adulthood compared to those in the low/ decreasing class. 3) Youth in the moderate/increasing and moderate/consistent participation trajectory classes will report lower levels of unemployment and higher levels of positive job characteristics compared to those in the low/decreasing class. 4) Youth in the moderate/increasing and moderate/consistent participation trajectory classes will be more likely to report post-high school education in young adulthood compared to those in the

low/decreasing class. This study builds on this previous research in several ways. First, I examine participation during the high school years allowing for different subgroups (classes) of participation trajectories and accounting for self-selection and sociodemographic characteristics. Second, I examine participation using a developmentally-informed measure including both behavioral and psychological engagement. Third, I examine a range of developmental outcomes in young adulthood that may be associated with participation trajectories during high school including psychological well-being, substance use, employment-related and educational outcomes. Fourth, I examine participation trajectories and outcomes in adulthood among an understudied group in the participation literature. Finally, I examine outcomes at older ages than most previous research.

Method

Research Context

The current study includes participants from Flint, Michigan. The city of Flint is unique in that it has seen much economic prosperity and misfortune over the last forty years. Transitioning from a manufacturing to service economy has had a strong effect on the life-circumstances of young people in Flint. At one time, Flint and surrounding Genesee County was one of the most affluent metropolitan areas in the U.S. because of high-paying manufacturing jobs. Since the 1960's, over 70,000 auto industry jobs have been lost, and the population has declined by half. Like many urban Michigan communities facing declining populations, the city faces extreme economic challenges resulting in high rates of crime and violence. The period of time for this study has been since the economic decline bottomed out and its economy remains somewhat depressed in comparison to the state of Michigan and the U.S. more generally.

Participants

This study is based on data collected as part of a longitudinal study of youth from mid-adolescence (i.e., high school years) to young adulthood. Data were collected from 850 adolescents at-risk for high school dropout at the beginning the ninth grade in four public high schools in a Flint, Michigan. Youth were eligible to participate in the initial study if they were in ninth grade enrolled in one of Flint's four main public high schools with an eighth grade GPA of 3.0 or below and were not diagnosed as having developmental impairments (Zimmerman, Ramirez-valles, Zapert, & Maton, 2000). Waves 1 through 4 correspond to the participants' high school years. The full sample included 50% female, 80% African-American, 18% White at Wave 1. Mean age at Wave 1 was 14.86 years (SD=0.64). In order to focus on our investigation on organized activity participation among an understudied group of adolescents, I included only African American respondents in our analyses (N=681 at Wave 1, 49% male). I used year 12 data to study young adult outcomes when the participants were in their mid-thirties (mean age was 34.09 years, SD=0.62). Following institutional IRB approval and necessary parental consent and participant assent, data were collected during in-school interviews.

Measures

Descriptive statistics for the measures used in this study are reported in Table 1. All time-invariant variables were assessed at Time 1. Organized activity participation was the only time varying variable calculated annually for the 4 high school years.

Organized Activity Participation. I measured organized activity participation using the same approach as Eisman et al (2014) to define the participation trajectories. I used student-report of behavioral (intensity) and psychological (importance) engagement across the four years of high school. Non-participants were coded as zero. I created a composite score for each activity

by multiplying student's reported frequency by importance. I then summed activity scores within and across domains (school, church and community) to obtain an aggregate participation score. Table 3.1 includes means and standard deviations of organized activity participation for youth in the current study.

Adult outcomes.

Depressive symptoms. I assessed Depressive symptoms using six items from the Brief Symptom Inventory (Derogatis & Spencer, 1982). Response options ranged from 1 (not at all uncomfortable) to 5 (extremely uncomfortable) according to how uncomfortable in the past week participants were due to loneliness, sadness, lack of interest, hopelessness about the future, thoughts about ending one's life and feeling worthless. I calculated the depression score as the mean of these six items ($\alpha = 0.84$).

Life satisfaction. I assessed life satisfaction using five items from the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Respondents rated their agreement with various statements including "The conditions of my life are excellent" and "I am satisfied with my life" from 1: Not True to 5: Very True. I calculated the life satisfaction score as the mean of these five items ($\alpha = 0.81$).

Substance use. I calculated substance use as the sum of alcohol, cigarette and marijuana use reported in the last 30 days. Respondents were asked how often they had consumed alcohol and marijuana from 1=none to 7=40 or more times and cigarettes from 1=not at all to 7=two or more packs per day. To create a sum substance use score, I standardized past 30-day use for each substance and summed them.

Unemployment. I considered any unemployment over the previous two years in order to capture consistent employment status over time. Participants were asked in Wave 11 and Wave

12 if they were employed. I created a dichotomous variable for employment during Waves 11 and 12: if respondents reported any unemployment between the two years they were coded as one, respondents reporting employment both years were coded as zero.

Positive job characteristics. I assessed positive job characteristics using eight items that included both decision latitude and job responsibilities. Respondents were asked in their current job how much they were able to, for example, manage their own time, manage the time of others and develop your own way of doing things, rated from 1: Almost None to 4: A lot. I calculated positive job characteristics as the mean of these eight items ($\alpha = 0.84$).

Educational attainment. I assessed educational attainment using a dichotomous measure of any post-high school training. Respondents who reported a high school diploma or less were coded as zero and those who reported any post-high school training including certificates, an associate's degree, or any college were coded as one.

Controls: Demographic and Self-Selection Factors

Parent education. I used the highest reported education level (from 1=completed grade school or less to 7=graduate or professional school after college) between respondents' parents. If only one parental education score was provided, I used that score in our analyses.

Self-acceptance. I assessed self-acceptance using the Bentler Psychological Inventory (BPI), Self-acceptance subscale (Bentler & Newcomb, 1978). I calculated the score as the mean of four items, asking the respondent to report how true pairs of statements are for them, such as (I am) happy with myself or unhappy with myself, from 1=the first statement is true for me to 5=the second statement is true for me ($\alpha = 0.64$).

8th grade GPA. I included school reported grade point average (GPA) at the end of 8th grade as a covariate in the analysis. GPA was measured on a 4-point scale (4.0=A to 1.0=D).

Data Analytic Strategy

I used growth mixture modeling (GMM) (Ram & Grimm, 2009), to model possible heterogeneity among urban youth in organized activity participation with MPlus version 7 (Múthen and Múthen, 2013). For investigating the relationship between latent class trajectories and distal outcomes, I used a three-step approach as described by Vermunt (2010) in order to independently evaluate the relationship between latent class trajectories and distal outcome variables, while accounting for classification error (Asparouhov & Muthén, 2013). Researchers suggest two primary ways of examining the relationship between latent class membership and distal outcomes: a one-step and a three-step approach (Asparouhov & Muthén, 2013; Bray, Lanza, & Tan, 2012; Vermunt, 2010). The one-step approach involves estimating the measurement and structural models simultaneously and is implemented in most software used in latent class analysis (Vermunt, 2010). Yet, there are disadvantages to a one-step approach, including statistical and conceptual issues as a result of undue influence of the distal outcome on measurement model estimation (Asparouhov & Muthén, 2013; Vermunt, 2010). As a result, researchers have proposed different 3-step approaches. As the nature of latent classes is such that true class membership is unknown (Bray et al., 2012), I chose the 3-step approach by Vermunt (2010) that takes this into account.

The first step consists of estimating the latent class trajectory model. In the second step, I exported the posterior probabilities (probability of membership in each latent class) from the LCGA (latent class growth analysis) model in MPlus to assign each respondent to their most likely latent class (modal class assignment) (Heron et al., 2013). The modal class assignment "serves as a single variable with known measurement error probabilities." (Vermunt, 2010, p. 452). In step three, I created a multiply imputed posterior distribution for the latent class variable

in Stata (Version 12, Statacorp) (Asparouhov & Muthén, 2013). Following this, I was then able to estimate linear and logistic regression models (depending on the outcome of interest) using the latent class participation trajectory model to predict young adult outcomes while correcting for misclassification (Heron et al., 2013; Vermunt, 2010).

Missing Data

I used a full information maximum likelihood (FIML) approach to address missing data on both time-varying and time-invariant variables in the measurement model for step one of the three-step analysis. In order to minimize the effects of missing data on my analyses, I imputed participants' outcome values for Wave 11 (obtained approximately 12 months prior to Wave 12, also during young adulthood) if Wave 12 was missing and Wave 11 was available. This increased the sample for each outcome by approximately 60 participants (≈6%). Following this imputation procedure, I compared participants who had missing data on each outcome versus non-missing on all sociodemographic variables to examine possible differences.

Results

Descriptive statistics

Means, standard deviations and sample size by wave for organized activity participation is provided in Table 3.1. Participation scores ranged from 0 to 119. Approximately 75% of adolescents participated in at least one school, church or community activity at Wave 1, 67% at Waves 2 and 3, and 50% at Wave 4. Total sample participation across the four waves of data appears to have a fairly consistent, low-level across the high school years, with some decline overall from freshman to senior year. Means and standard deviations for sociodemographic and self-selection variables for Wave 1 and outcome variables by Wave 12 during young adulthood are provided in Table 3.1.

Attrition Analysis

Of the 681 respondents from Wave 1, 364 cases were lost to follow up by Wave 12 (across all outcome variables, specific number varied by outcome). I conducted an attrition analysis to compare those who remained in the study by wave 12 with those who did not. A greater proportion of females remained in the study compared to males (X^2=11.49, p=0.001); the respondents who remained in the sample were slightly older at wave 1(M= 14.95 years, SE=0.04) than missing respondents (M=14.79, SE=0.03; t=3.40, p>0.001). I found no differences between missing and non-missing respondents for parent education and 8th grade GPA or trajectory group membership.

Growth Models and Trajectory Classes

Model building results are given in Table 3.2. Using the same model building strategy for latent trajectory classes as in Eisman et al (2014), my results suggested a three class solution best fit the data, with a low initial-level, decreasing participation group (approximately 75% of respondents), a moderate initial-level, consistent participation group (approximately 20% of respondents) and a moderate initial-level increasing participation group (approximately 5% of the respondents). The three class trajectory model is depicted in Figure 3.1 and estimates with covariates provided in Table 3.3. Among sociodemographic and self-selection characteristics, higher 8th grade GPA was associated with higher odds of membership in the moderate/consistent and moderate/increasing versus low/decreasing participation trajectory groups. Higher parent education was associated with higher odds of being in the moderate/consistent versus low/decreasing group. All covariates of class membership were retained in the model for their substantive theoretical value.

Following estimating the LCGA with self-selection and sociodemographic covariates, I attempted to free the intercept and slope variances within-class. I also examined exploratory plots of variability around intercept and slope for each class. Freeing slope and intercept variances within all classes resulted estimation errors, such as a non positive-definite covariance matrix. The estimation issues and exploratory plots suggested limited within class variability in organized activity participation intercept and slope. Consequently, my models investigating distal outcomes included fixed variances for the within class intercepts and slopes as this approach best fit the data.

Participation Class Membership and Young Adult Outcomes

Following my examination of latent class trajectory classes with covariates, I sought to investigate if participation trajectories were associated with outcomes in young adulthood using the three-step approach described by Vermunt (2010). Results for participation trajectories and young adult outcomes are provided in Table 3.4.

Psychological well-being. My results indicated that psychological well-being differed in young adulthood by trajectory class group membership. Adolescents in the moderate/increasing participation group reported lower levels of depressive symptoms in young adulthood than those in the low/decreasing participation group. Among participants in the moderate/increasing group, the predicted depression score by Wave 12 was 0.4 points lower than those in the low/decreasing participation group. Youth in the moderate/increasing group reported higher levels of life satisfaction in young adulthood than those in the low/decreasing participation group. Participants in the moderate/increasing group reported life satisfaction scores 0.63 points higher in young adulthood that those in the low/decreasing group. There were no differences in psychological well-being between the moderate/consistent and low/decreasing groups.

Substance use. My results indicated that substance use differed in young adulthood by trajectory class group membership Adolescents in the moderate/increasing group reported lower levels of substance use in adulthood compared to those in the low/decreasing group; for those in the moderate/increasing group, substance use was 1.82 points lower than those in the low/decreasing group. There were no differences in young adult substance use between the moderate/consistent and low/decreasing participation groups.

Employment-related outcomes. Unemployment and positive job characteristics did not differ by participation trajectory subgroup membership.

Educational attainment. My results indicated that there were differences in educational attainment by participation trajectory subgroup membership. Adolescents in the moderate/increasing participation group were more likely to report post-high school education/training than those in the low/decreasing group. The odds of obtaining post-high school education by Wave 12 among those in the moderate/increasing group were 4.54 times higher than those in the low/decreasing group. I found no differences in educational attainment between those in the moderate/consistent group and the low/decreasing group.

Discussion

Participation in organized activities provides important opportunities for youth to develop assets and resources that may help promote positive developmental trajectories and whose effects may extend well into adulthood (Feldman & Matjasko, 2005; Gardner et al., 2008; Mueller, Phelps, et al., 2011). Guided by Positive Youth Development (PYD) and the developmental ecological models, we may expect that youth who participate over time may have greater exposure to opportunities for building assets and resources; this may, in turn, help increase the likelihood of positive outcomes and reduce the risk of negative outcomes in young adulthood

(Gardner et al., 2008; Tudge et al., 2009). This may be especially beneficial for youth living in urban, disadvantaged contexts, who are more likely to experience factors that increase risk of negative outcomes compared to youth living in more affluent areas (Like, 2011; Patton et al., 2012).

This is one of the few studies of the effects of participation trajectories during adolescence on outcomes during young adulthood. My study findings indicated that organized activity participation trajectories during high school were associated with young adult outcomes among this sample living in an urban, disadvantaged community. Bronfenbrenner & Morris (2006) suggest that in order to be effective in shaping development, proximal processes need to occur for extended periods of time. Adolescents who became more involved over time may have had greater opportunity to experiences that support positive development through organized activities (Mahoney et al., 2003; Zaff et al., 2003). My study findings support this conclusion and build on research investigating the longer-term effects of organized activity participation among youth. Furthermore, researchers have established that organized activity participation generally promotes positive youth development and helps prevent negative outcomes during adolescence and into emerging adulthood (Eccles & Gootman, 2002; Gardner et al., 2008; Mahoney et al., 2003; Zaff et al., 2003). My results support this conclusion and build on previous research with evidence to suggest that the potential promotive effects of participation may extend into young adulthood, even after controlling for important sociodemographic and self-selection factors and differ by participation trajectory.

Psychological well-being. Among outcomes related to psychological well-being, depression and life-satisfaction in young adulthood differed by trajectory class membership. Adolescents in the moderate/increasing participation trajectory group reported lower depressive symptom and

higher life satisfaction scores than adolescents in the low/decreasing trajectory group. The more favorable psychological well-being outcomes among the increasing group may be due to opportunities to build important developmental assets and resources in the context of participation. Researchers have found that adolescents who are more involved in activities report a greater sense of belonging, higher perceived competence and more confidence than less involved adolescents (Eccles & Gootman, 2002). Furthermore, researchers have found that youth experience more positive emotional states when involved in organized activities compared to other contexts in their lives, such as school or unstructured time (Bohnert et al., 2008; Vandell et al., 2005). Youth who increased their participation over time may have experienced greater exposure to these positive experiences during a developmental period characterized by increasing independence and, potentially as a result, greater exposure to social and personal stressors (e.g., violence exposure); these stressors may be particularly pronounced among youth living in urban, disadvantaged areas (Cobb, 2007; Peck, Roeser, Zarrett, & Eccles, 2008). Educators, professionals and other adults working with youth during adolescence as they transition to adulthood may benefit from structuring activities that meet the diverse needs of this age group in order to offer them expanded opportunity to become involved in organized activities that help them develop the assets and resources that can contribute to their psychological well-being into young adulthood.

Substance use. Adolescents in the moderate/increasing trajectory group reported less substance use in young adulthood compared to youth in the low/decreasing group. From a PYD perspective, opportunities to build developmental assets and resources through opportunities such as organized activities may decrease the risk of negative developmental trajectories, including problematic behaviors such as substance use during adolescence and later in life

(Arbeit et al., 2014; Gardner et al., 2008). Substance abuse may be of particular concern among young adults living in urban, disadvantaged environments. Substance abuse can be a coping mechanism for dealing with stressors or trauma (NIH, 2008), and researchers suggest that populations experiencing social disadvantage and discrimination are among those most at risk for substance abuse disorders and substance abuse-related consequences due to disproportionate exposure to structural-level stressors (Mulia, Ye, Greenfield, & Zemore, 2009; Mulia, Ye, Zemore, & Greenfield, 2008).

Organized activity participation may serve as an important way to build assets, resources and opportunities for positive developmental experiences that may decrease the likelihood of substance use during young adulthood. Youth who experience increasing exposure to these opportunities during middle- and late-adolescence may be better equipped to handle stressors experienced during young adulthood and avoid substance abuse-related disorders and consequences in young adulthood. Thus, in addition to reducing risk of substance use during adolescence (Bohnert et al., 2007), adolescents in the highest participation group (increasing over time) may also experience longer-term effects related to reduced substance use in young adulthood. Professionals and adults working with youth experiencing social disadvantage may bolster long-term prevention efforts through finding ways expand opportunities for youth activity participation during middle- and late-adolescence that promotes PYD and helps build important assets and resources.

Employment-related outcomes. My results did not support the hypothesis that organized activity participation trajectories would be associated with employment outcomes. Participation may have contributed to PYD that helped prepare young people for success in the job market, but other structural factors may be more influential in determining employment outcomes. The

economic context within a community may have a significant effect on employment among area residents. Flint, Michigan, for example, where the current study was conducted, has suffered from higher unemployment levels compared to state and national averages for well over a decade (Bureau of Labor Statistics, 2014). Thus, my finding regarding unemployment may be a reflection of the limited employment opportunities available in the area. In addition to contributing to an individual's potential success in adult employment through supporting positive youth development, structural level factors that limit employment opportunities in some geographic areas, particularly urban, disadvantaged contexts, need also be addressed.

Educational attainment. Educational attainment post-high school was associated with participation trajectories. This is especially notable because the study began with youth with GPA's of 3.0 or lower and who might not be expected to continue their education. Yet, those who participated the most and increased their involvement over time were more likely to seek post-high school education than youth in the low/decreasing trajectory group. Educational attainment may be a reflection of positive development through bolstering youths' competence (Gardner et al., 2008). Adolescents who became increasingly engaged in organized activities may have greater exposure to opportunities for developing competence across multiple domains including academic and social competence and intensified these interactions over time (Gardner et al., 2008). Parents, professionals and other adults working with academically at-risk youth may benefit from exploring how to increase youth engagement in organized activities (both psychological and behavioral) throughout high school as a way to support longer-term educational success.

Limitations

This is one of the first attempts to examine how distinct organized activity participation trajectories in high school are associated with psychological well-being, substance use, educational and occupational-related outcomes in emerging adulthood. Several limitations of this study, however, should be noted. First, our study was conducted in one middle-sized and economically challenged city so the results may not be generalizable to young adults more generally. Yet, this is a critical population to study as organized activities may be particularly beneficial for youth growing up in contexts like this who may be at higher risk for negative developmental outcomes and may participate less than their higher SES counterparts (Bohnert et al., 2008; Pedersen et al., 2005). Second, the size of our increasing participation class was small (5% of the sample) relative to the other classes, so statistical power may be an issue in terms of detecting subgroup differences and drawing conclusions across all outcomes. This proportion, however, falls within acceptable range for a latent trajectory class (Jung & Wickrama, 2008) and is substantively meaningful for understanding positive youth development (Mahoney et al., 2003). Furthermore, this unique group was the only participation trajectory to demonstrate differences in the long-term effects of participation on young adult outcomes and is an important group to study. Third, our participation measure itself did not include information about specific categories of activities such as school clubs, sports and after school programs as examined by previous researchers. Although these specific activities have been linked to positive and negative outcomes among youth (Barber et al., 2001; Eccles & Gootman, 2002), activity categories have been defined in numerous ways (Barber et al., 2001; Denault & Poulin, 2009b; Fredricks & Eccles, 2006). Furthermore, few researchers have linked specific activities to young adult outcomes (Fredricks & Eccles, 2006; Mahoney & Vest, 2012). Consequently, I considered organized activity participation more broadly to investigate how distinct participation trajectories

across activity contexts were associated with outcomes during young adulthood. Fourth, although I accounted for important sociodemographic and self-selection factors that may influence participation trajectories, other factors may exist that may influence participation during the high school years such as motivation and skill level (Farb & Matjasko, 2012). Yet, I accounted for several empirically-supported factors associated with participation over time in order to reduce potential biases in the relationship between participation and young adult outcomes. Finally, although the results suggest that becoming more engaged in activities over time is associated with long-term benefits, among youth living in economically distressed contexts, participation may be especially challenging. Contextual barriers including activity availability, transportation, financial limitations, and other obligations in these young people's lives may pose barriers to youth engagement. Yet, even considering these challenges, adolescents who were able to expand their engagement over time experienced more favorable outcomes in young adulthood compared to less involved peers.

These study limitations notwithstanding, my results contribute to our understanding of adolescent organized activity participation in several key ways. First, I investigated possible subgroups of participation trajectories during the high school years while accounting for socidemographic and self-selection factors. Second, I included a measure of organized activity participation that included both behavioral and psychological engagement. Third, I examined a range of outcomes in young adulthood, including psychological well-being, substance use, employment- and education-related outcomes. Fourth, I investigated the relationship between participation trajectories and young adult outcomes among an understudied group in the participation literature. Fifth, I used a three-step analytic approach as described by Vermunt

(2010) to address issues related to one-step model estimation and three-step approaches that do not account for classification error when using latent trajectory classes to predict distal outcomes.

Overall, my results support the relationship between trajectories of participation during adolescence and outcomes in young adulthood. My results suggest that how youth participate over time may influence the promotive effects of organized activities into adulthood. Results of my study provides useful insights, using a progressive methodological approach, regarding which trajectories of participation may be most beneficial to positive development and favorable long-term outcomes. Although investigating organized activity participation trajectories and adulthood outcomes is beneficial for all youth, this may be especially important to study among youth living in contexts that place them at higher risk for negative outcomes later in life (Sampson, Morenoff, & Gannon-Rowley, 2002; Sampson & Wilson, 2005). A useful next step for this research would be to examine the mechanism by which participation helps promote positive and prevent negative outcomes, such as through building specific developmental assets and resources.

Conclusions

Organized activities are central developmental contexts for adolescents that support positive youth development (PYD), may help offset risk exposure (Fredricks & Simpkins, 2012; Lerner et al., 2011; Mcneely et al., 2002) and support positive outcomes during young adulthood. Organized activity participation trajectories may influence the extent to which participation influences outcomes (Darling, 2005; Zaff et al., 2003), including into young adulthood. Youth who become more engaged in organized activities throughout the high school years may experience greater opportunity for building assets and resources associated with PYD that can contribute to better psychological well-being, fewer negative behaviors and higher educational

attainment than youth who participate less. This study supports the long-term promotive potential of organized activity participation and adds to our understanding of processes during adolescence that may be important influences on health and well-being into adulthood.

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Table 3.1 Descriptive statistics for study variables

Time-varying	**Mean(SD)**
Participation[§] Wave 1 (N=681)	18.87 (18.96)
Participation Wave 2 (N=646)	17.05 (18.32)
Participation Wave 3 (N=621)	17.82 (19.30)
Participation Wave 4 (N=588)	14.33 (18.66)

Time-invariant	**Mean(SD)/proportion yes**
Class predictors, Wave 1	
Parent education	4.39 (1.41)
Self-acceptance	4.51 (0.70)
8th grade GPA	2.02 (0.68)
Young adult outcomes, by Wave 12	
Psychological well-being	
Depression (N=361)	1.55 (0.69)
Life satisfaction (N=362)	3.05 (1.02)
Substance use (N=359)	3.76 (2.93)
Employment	
Unemployment (N=364)	19.23%
Job characteristics (N=308)	2.29 (1.41)
Educational attainment (post HS training) (N=363)	39.12%

[§]Participation= sum of intensity x importance for each activity

Table 3.2 Fit statistics for participation LCGA by class solution

Model	Log-Likelihood	AIC	SSABIC	Entropy	LMR LRT test
1 class (growth model)				n/a	n/a
2 classes	-12371.21	24792.42	24826.05	0.89	199.05
3 classes	-12296.49	24656.99	24700.04	0.89	149.80*
4 classes	***	***	***	***	***

*p<0.05; LMR LRT test: Lo-Mendel-Rubin adjusted LRT TEST for N-1(Ho) vs. N classes

***4 class model did not successfully converge.

Table 3.3 Three class model results

LCGA Model results	Intercept (SE)		Linear growth (SE)	
Class 1 (Low/decreasing participation group)	15.62 (0.78)		-3.03 (0.27)	
Class 2 (Moderate/ Increasing participation group)	27.00 (3.32)		13.91 (1.64)	
Class 3 (Moderate/Consistent participation group)	32.37 (2.40)		0.26 (0.79)	
Participation groups compared	**Consistent-Low**		**Increasing-Low**	
	Estimate (SE)	OR	Estimate (SE)	OR
Covariate				
Male	0.46 (0.24)	1.58	0.11 (0.39)	1.12
Self-acceptance	0.07 (0.19)	1.07	0.67 (0.46)	1.95
8th grade GPA	0.75 (0.23)*	2.12	0.53 (0.35)	1.7
Parent education	0.31 (0.09)*	1.36	0.44 (0.22)*	1.55

*p<0.05

Table 3.4 Distal outcomes by trajectory class membership

	Participation Groups Compared	
Young adult outcomes, by Wave 12	**Consistent versus Low** Coef/OR [95% CI]^	**Increasing versus Low** Coef/OR [95% CI]^
Psychological well-being		
Depression (N=361)	-0.14[-0.34, 0.05]	-0.40[-0.74, -0.06]*
Life satisfaction (N=362)	0.07[-0.21, 0.36]	0.63[0.13, 1.13]**
Substance use (N=359)	-0.57[-1.41, 0.26]	-1.82[-3.25, -0.39]**
Employment		
Unemployment (N=364)	0.87[0.42, 1.80]	0.87[0.24, 3.14]
Job characteristics (N=308)	0.28[-0.14, 0.70]	0.34[-0.36, 1.04]
Educational attainment (post HS training) (N=363)	1.80[0.98, 3.30]	4.54[1.55, 13.28]**

^coefficients for continuous variables, OR for dichotomous (unemployment and educational attainment), *p≤0.05, **p≤0.01

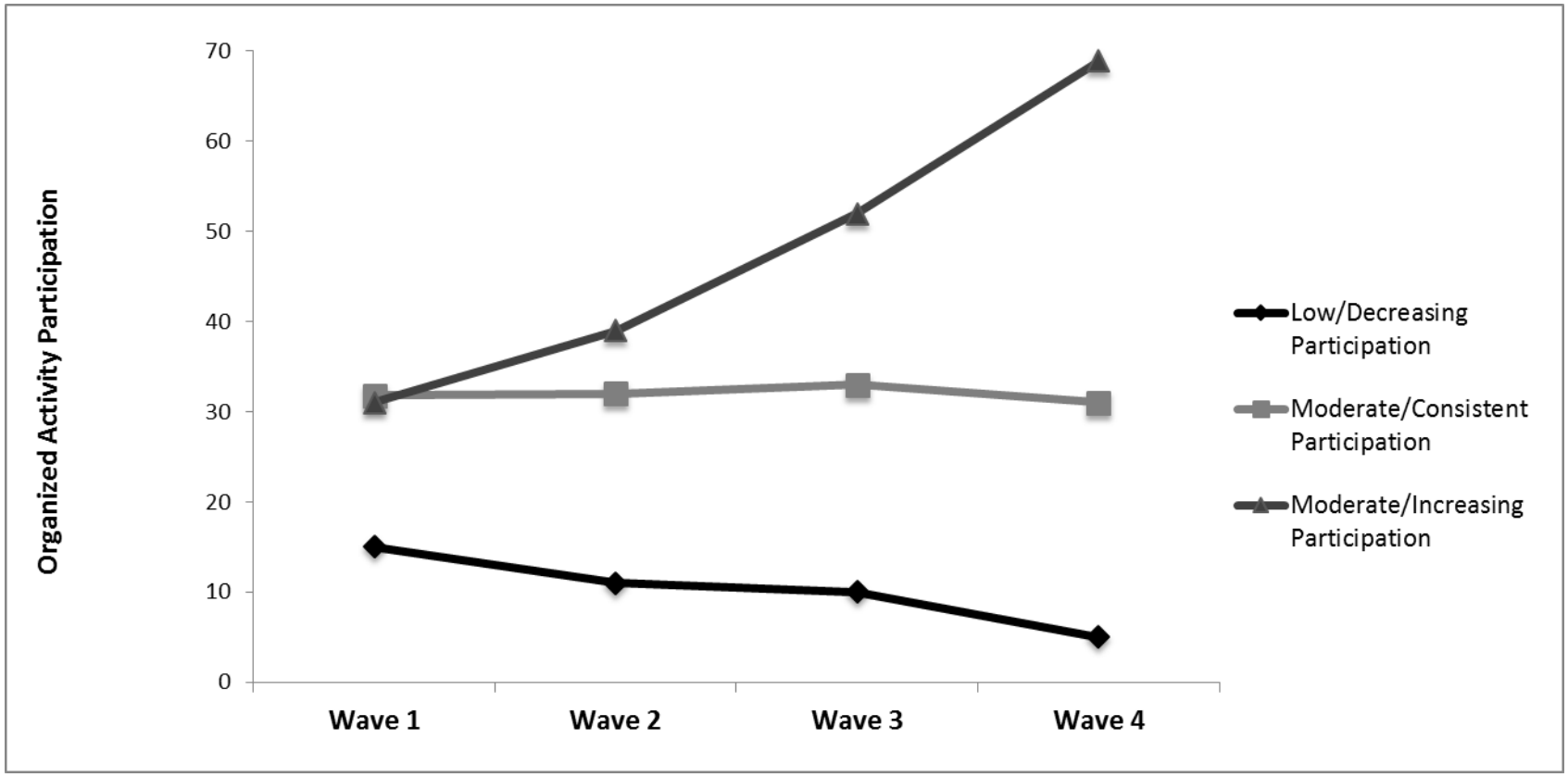

Figure 3.1 Model-estimated means for the three-class latent class growth analysis solution of organized activity participation across the high school years

Chapter 4

Organized Activity Participation and Aggressive Behavior: The Role of Positive Youth Development

Introduction

Aggressive behavior among adolescents is a pervasive problem that compromises the health and well-being of youth, and their families, schools and community (Youngstrom, Weist, & Albus, 2003). Aggression, defined as actual or implied use of force against an individual or group with the intent to do physical or psychological harm (Dahlberg & Potter, 2001; Farrell & Flannery, 2006), remains a persistent problem among youth in the United States. Aggression is associated with long term consequences such as substance abuse and violent behavior in adulthood (Lipsey & Derzon, 1998; Olofsson, Lindqvist, Shaw, & Danielsson, 2012). Aggressive behaviors may be physical or relational in nature. Physical aggression refers to the actual or implied physical force against others. Relational aggression is more psychological in nature and refers to behaviors intended to harm personal relationships and create social isolation (e.g., spreading rumors) (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2013). In one nationally representative sample of youth, approximately 28% report some form of physical aggression in the past year nearly 20% report some form of relational aggression (CDC, 2013; Robers, Kemp, Truman, & Snyder, 2013), but other researchers have reported aggression prevalence estimates for both types over 70 percent (Swearer, Siebecker, Johnsen-Freichs, & Wang, 2010). Relational aggression is less well understood and more covert compared to physical aggression (Herrenkohl et al., 2007). Relational aggression tends to peak during early

adolescence (Loeber & Hay, 1997; Tremblay et al., 2004) and may put youth at risk for later physical aggression and mental health disorders (CDC, 2002; Nansel et al., 2001). Consequently, efforts to understand what factors may reduce the risk of relational aggression are necessary to inform strategies for prevention.

Researchers have shifted from a focus on problem behavior to a more integrative, strength-based approaches that informs promotion of positive youth development (Bowers et al., 2011; Eccles & Templeton, 2002). Focusing on adolescents' strengths, through emphasizing assets and resources that support healthy development, may be an innovative strategy to address problem behaviors (Lerner et al., 2005; Resnick et al., 1997; Zimmerman, Stewart, Morrel-Samuels, Franzen, & Reischl, 2011). Assets refer to individual adolescent attributes such as confidence, self-esteem, and beliefs about making positive contributions to their world. Resources refer to factors external to the adolescent that help them develop in positive ways such as adult mentors and positive peer influences. One critical way that youth may develop assets and resources related to positive development is through organized activity participation.

Organized Activity Participation

Participation in organized activities plays a key role in positive development by providing youth with opportunities to build assets and resources that promote positive development (Feldman & Matjasko, 2005; Mahoney, Larson, Eccles, & Lord, 2005; Mueller, Lewin-bizan, & Urban, 2011). Organized activities refer to a broad-range of adult-sponsored activities outside the school curriculum within diverse contexts including school, church and community-based programs (Bohnert, Fredricks, & Randall, 2010).

Breadth of participation refers to the number of different organized activities (e.g., school sports, school clubs or community-based after school programs) in which youth participate.

Breadth of activities may influence developmental assets by providing a broad array of experiences and opportunities to build skills and social connections (Hansen, Larson, & Dworkin, 2003). Researchers have found that, generally, adolescents who participate in a wide range of activities experience positive developmental outcomes (Denault & Poulin, 2009; Fredricks & Eccles, 2006a). Yet, breadth of activity participation may vary across the adolescent years. Early adolescents are more likely to seek a wider range of participation experiences compared to later adolescence (Busseri & Rose-Krasnor, 2009). Consequently, breadth may be a particularly salient for examining developmental effects of participation during this time of life.

Organized activity participation presents a unique opportunity for building assets and resources related to positive development during out-of-school time (Bohnert, Richards, Kohl, & Randall, 2009). Researchers have generally supported the promotive effects of participation on youth development (Eccles & Gootman, 2002; Mahoney et al., 2005), although some negative effects have been associated with certain types of activity participation (Barber, Eccles, & Stone, 2001; Mahoney et al., 2005). Yet, most researchers investigating participation and positive development have focused on outcomes, but the process or mechanism by which this occurs has received limited attention (Mueller, Phelps, et al., 2011; Roth, Malone, & Brooks-Gunn, 2010). Thus, few researchers have examined empirically the mechanism by which participation operates to promote positive or problematic developmental outcomes.

Conceptual/Theoretical Framework

Positive Youth Development. Positive Youth Development (PYD) is a developmental systems-based model that emphasizes the positive potential within all youth, with a focus on factors (assets and resources) that promote healthy development (Damon, 2004; Lerner, Lerner, & Benson, 2011). Developmental assets and resources aid youth in acquiring the capacity

necessary to successfully transition from childhood to adulthood and may help youth avoid detrimental behaviors such as relational aggression. Assets and resources are a theoretically and empirically based set of experiences, opportunities and supports associated with promoting positive youth outcomes (e.g., school success) and reducing negative outcomes (e.g., aggressive behavior) (Benson, Scales, & Syvertsen, 2011; Eccles & Gootman, 2002; Fergus & Zimmerman, 2005).

Using a PYD framework, assets and resources fall into broad categories, called the five C's: confidence, competence, connections, character and caring (Lerner, Lerner, & Benson, 2011; Lerner, 2005). Young people who experience these assets and resources will be positively engaged with their environment and exhibit the sixth C: contribution (Lerner, 2005). Lerner and colleagues have examined PYD as an overarching construct composed of the five C's, using data collected in conjunction with the largest child development organization in the U.S. (4-H). They found support for this proposed model of PYD, but also suggest that these models of PYD are still evolving (see Lerner, Lerner, & Benson, 2011; Lerner, 2005; Mueller, Phelps, et al., 2011). Contribution, for example, has generally been examined separately as an outcome of PYD, conceptualized as a result of the other C's rather than a core contributing element (Lerner, Lerner, & Benson, 2011; Lerner, 2005; Mueller, Phelps, et al., 2011).

One alternative way to conceptualize of PYD is through incorporating contribution as part of an integrated construct of PYD. Guided by PYD and developmental-ecological frameworks, contribution may be considered part of the larger PYD construct. Foundational concepts of PYD emphasize mutually influential, integrated person-context relations as the building block of human development (Lerner, 2005). Guided by the developmental-ecological framework, human development occurs through reciprocal interactions between the developing

person and their environment (Bronfenbrenner & Morris, 2006). Thus, we might expect that youth will be shaped by the contexts in which they engage and that youth will, in turn, also act to influence these contexts. This perspective suggests that the connection between the 5 C's and the sixth C (contribution) would be one of close interconnectedness because of the feedback loop and reciprocal influences between them. Thus, a PYD construct may include all 6 components as a single multidimensional and integrated variable, Yet, few researchers have tested empirically if a single integrated PYD model (including all 6 C's in one construct) is a more fitting representation of the PYD framework than a decomposed model that treats the PYD components separately.

Organized activities, PYD and relational aggression

Although all the component C's are potentially vital influences on youth development, some may be more relevant than others for investigating PYD in the context of organized activities and its effects on relational aggression. Competence, peer connection and contribution may be especially critical developmental assets and resources developed within organized activities that may be associated with less relational aggression.

Competence. Competence refers to the ability to manage social, academic, cognitive and vocational challenges that can be essential for a healthy and productive transition to adulthood (Masten & Coatsworth, 1998). Researchers suggest that participation is associated with promoting competence across multiple domains including interpersonal and school-related competencies (Elder & Conger, 2000; Marsh & Kleitman, 2002; Mueller, Lewin-bizan, et al., 2011). Researchers have also found that social and academic competence are associated with less physical aggression (Botvin, Griffin, & Nichols, 2006; Griffin, Scheier, Botvin, Diaz, & Miller, 1999; Resnick et al., 1997; Resnick, Ireland, & Borowsky, 2004). Although fewer researchers

have examined the relationship between competence and relational aggression, both types of aggression may share similar risk, and perhaps protective factors (Herrenkohl et al., 2007). Consequently, competence may be particularly relevant component of PYD when examining the relationship between participation and relational aggression.

Peer connection. Peer connections include prosocial connectedness with friends (Lerner, Lerner, von Eye, Bowers, & Lewin-Bizan, 2011; Lerner et al., 2005; Roth & Brooks-Gunn, 2003). Positive peer connectedness is an interpersonal resource that may be strengthened through organized activity participation. Peer groups become a primary focus during adolescence (Muuss, 1996; Youniss & Haynie, 1992) and, given the importance of peer influence during this time of life, social relationships fostered within organized activities are one way that participation may contribute toward PYD (Linver, Roth, & Brooks-Gunn, 2009). Participation in organized activities may promote positive peer connectedness through fostering relationships with prosocial peers and reducing exposure to antisocial peers (Barber, Stone, Hunt, & Eccles, 2005; Eccles, Barber, Stone, & Hunt, 2003; Fredricks & Eccles, 2006b; Linver et al., 2009). Connections to prosocial peers, as well as family and community, are also associated with avoiding harmful behaviors such as relational aggression (Lerner et al., 2005; Mcneely, Nonnemaker, & Blum, 2002; Resnick et al., 1997, 2004). Harmful peer interactions are the method by which youth engage in relational aggression (Card, Stucky, Sawalani, & Little, 2008). Thus, prosocial peer relationships may be a vital component of reducing risk of relational aggression. Taken together, these results suggest that organized activities foster prosocial peer connections, which may, in turn, reduce negative behaviors in adolescence such as relational aggression, but this has rarely been studied.

Contribution. Contribution (to self, family and community) refers to mutually beneficial interactions between youth and their immediate environment. Contribution is an important aspect of PYD related to youth acting as resources for their schools and the larger community (Mueller, Lewin-bizan, et al., 2011). When youth thrive, they make positive contributions and are better positioned to become healthy, productive adults who are more likely to participate socially and politically in adulthood (Eccles et al., 2003; Eccles & Templeton, 2002; Lerner, Lerner, von Eye, et al., 2011). Researchers have found that participation is generally associated with higher levels of contribution (Agans et al., 2014; Eccles et al., 2003). Researchers also suggest that contribution may be an important factor in reducing negative outcomes among youth (Lerner, Lerner, & Benson, 2011; Lewin-Bizan et al., 2010), although few have investigated contribution in the context of PYD and relational aggression. Consequently, organized activity participation may foster contribution that, in turn, may reduce the risk of aggressive behavior, but it has rarely been investigated as a possible component of PYD mediating the relationship between participation and relational aggression.

Sociodemographic Factors, Participation and Aggression

Researchers have found some differences in organized activity participation by socidemographic characteristics. Youth whose parents have higher levels of education and socioeconomic status (SES), for example, are more likely to participate in organized activities than youth whose parents have less education or lower SES (Bartko & Eccles, 2003; Linver et al., 2009). Participation may also vary by sex. Some researchers examining potential sex differences suggest that, with the exception of sports, females generally participate more than males (Eccles et al., 2003), while others suggest no sex differences (Pedersen, 2005).

Relational aggression also varies by sociodemographic characteristics. Researchers have found that youth whose parents have low educational attainment are more likely to engage in physically aggressive behaviors during adolescence (Nagin & Tremblay, 2001; Tremblay et al., 2004). Farrington and Baldry (2010) found that lower socioeconomic status was associated with more aggressive behaviors, but they did not examine relational aggression independently. Fewer researchers have examined correlates to relational as opposed to physical aggression (Merrell, Buchanan, & Tran, 2006), but results from studies examining aggression broadly suggest that parent education may be associated with both relational and physical aggression. Aggressive behaviors may also vary by sex. Most researchers have found that males generally engage in more physical aggression and females in more relational aggression (Card et al., 2008; Herrenkohl et al., 2007; Nansel et al., 2001), but this is not universal. Some researchers have found that males and females have similar rates of both types of aggression (Galen & Underwood, 1997; Massetti et al., 2011). Overall, these results suggest that aggression affects both males and females, and it is important to consider potential sex differences in relational aggressive behavior. Thus, it is necessary to account for sociodemographic characteristics when investigating the effects of participation on relational aggression.

Current Study

In the current study, I test a hypothesis about the mechanism by which organized activity participation influences relational aggressive behavior within an economically and racially diverse population of early adolescents. I expect that the PYD components of competence, peer connectedness and contribution will partially mediate the relationship between participation and both physical and relational aggression. I will test two mediating models of PYD that investigate a decomposed (Figure 4.1) and an integrated (Figure 4.2) PYD construct. In the decomposed

model, I hypothesize that participation improves connections and competence, which promote contribution to community and that, in turn, reduces relational aggression. In the second model, peer connections, competence and contribution will serve as indicators for an integrated, latent PYD factor mediating the relationship between participation and relational aggression. I expect breadth of organized activity participation to have a direct negative effect on relational aggressive behavior. Finally, I expect that these direct and mediating effects will be present after controlling for sociodemographic factors (i.e., parent education, sex).

My study builds on previous research in several ways. First, I examine if promoting PYD is a mechanism by which organized activity participation is associated with less aggressive behavior. Second, I explore two models of PYD in this mediating relationship: an integrated a decomposed model. Third, I examine participation using a developmentally appropriate measure that also accounts for relevant sociodemographic factors.

Method

Participants

This study is based on data collected as part of a middle school survey focused on understanding risk and protective factors for youth aggressive behavior. Data were collected from an economically and racially diverse sample of 7th grade students (71% economically disadvantaged, 50% African American, 36% Caucasian and 14% Latino, Native American, Asian or mixed race) (Michigan Department of Education, 2012). This study was approved by the University of Michigan Institutional Review Board and a Certificate of Confidentiality was obtained from the National Institute of Health. Written parental consent and student assent was obtained prior to participation. Participation in the study was completely voluntary and no compensation was provided to participants.

Students were eligible to complete the questionnaire if they were present in the school health class the day of the survey and had signed parent consent. Students with lower reading levels or limited English proficiency (N=4) as identified by the teacher were read the survey aloud in a separate room. Approximately 60% of 7th grade students in the school participated in the survey (mean age = 12.39 years; SD = .52; N = 196; 60% female). The sample consisted of 45% African American, 27% White, 21% Multiracial, and 7% Other (e.g., Latino, Native American, Asian).

Measures

Table 4.1 reports means, standard deviations and alphas for all study variables.

Independent variables.

Organized activity participation. Organized activity participation was measured using breadth of involvement across a range of school sponsored and non-school sponsored activities. Students were asked if they participated in any of the following activities within the last month: sports, school clubs, arts programs, music programs, church/religious groups and afterschool programs. I computed breadth of participation as the sum of the total number of activities in which youth participated and could range from 0-6.

Peer connection. Peer connection was measured by seven items from the Peer Connectedness Scale (Sieving et al., 2001). Students were asked about features of their relationships with peers, including items such as "My peers care about me," "I can tell my peers about my problems and troubles" and "My peers listen to what I have to say." Participants rated their agreement with these items, from 1 (strong yes) to 4 (strong no).

Competence. Competence included five items addressing academic and social competence. Items addressing academic competence included "I will graduate from high school"

and “I will go to college” and “I will be able to handle my schoolwork.” Social competence items included “I will be able to handle the problems that might come up in my life” and “I will be able to stay out of trouble.” The latter three items are from a future expectations scale by Wyman, Cowen, Work and Kerley (1993). Students were asked to rate their agreement with the items from 1 “agree a lot” to 4 “disagree a lot.”

Contribution. This study measured contribution using three items (Shamah, 2011). Students were asked to indicate their agreement from 1 (Agree a lot) to 4 (Disagree a lot) on how much they want to make a difference in the world, if they currently contribute to community and if they feel it’s important to contribute to community.

Sociodemographics. We used the highest reported education level of their mother or father (from 1=completed grade school or less to 7=graduate or professional school after college). If only one parental education score was provided, we used that score in our analyses. Sex was coded 0 (female) and 1 (male).

Dependent variable.

Relational aggression. I examined relational aggression using nine items from the Multisite Violence Prevention Project survey (Horne, 2004). Students were asked how often in the past month they had engaged in aggressive behaviors from 1 (Never) to 6 (5 times or more). Relational aggression included items such as ruining someone’s stuff, spreading rumors or gossip about someone and picking on someone. Both graphical (histogram- not shown and statistical (Kurtosis = 6.99) evidence suggested that this variable demonstrated notable departure from normality. Consequently, I log transformed relational aggression for use in structural equation models.

Data Analytic Strategy

I used structural equation modeling (SEM) to test a mediation model using latent factors and observed variables with MPlus version 7 (Múthen and Múthen, 2013). SEM is a comprehensive method for quantifying and testing models based on substantive theory (Raykov & Marcoulides, 2006). This approach is based on analysis of variance/covariance matrices, and analyzes measurement (unobserved factors and their respective indicators) and the structural regression (examining relationships between factors) models (Kline, 2011). SEM allows for examination of direct effects and mediation while adjusting for observed variable measurement error (Klem, 2000).

I first examined the measurement model for the latent factors using confirmatory factor analysis for both the decomposed and integrated models. Next, I examined the structural regression model investigating relationships between the factors for both models. I evaluated model fit indices using χ^2, χ^2/df ratios and Comparative Fit Index (CFI) values and Standardized Root Mean-Square Error of Approximation (RMSEA) with the associated 90% confidence interval. I used Akaike Information Criterion (AIC) and Baysian Information Criterion (BIC) when comparing the non-nested models (decomposed and integrated). AIC and BIC are appropriate methods for comparing non-nested SEM models estimated from the same data (Dziak, Coffman, Lanza, & Li, 2012). Some researchers suggest that AIC may favor models that are more complex compared to BIC as BIC imposes a penalty for model complexity (Dziak et al., 2012; Wang & Wang, 2012). Consequently, I examine both AIC and BIC in model selection. I examined structural paths, direct, indirect and total effects of the model (decomposed or integrated) that best fits the data. A significant indirect effect would suggest that assets and

resources associated with PYD at least partially mediate the relationship between participation and aggressive behavior.

I utilized resampling with confidence intervals to assess the significance of model indirect effects. MacKinnon (2008) suggests that traditional methods of assessing mediation effects are subject to bias due to incorrect distributional assumptions of indirect effects and limited power (and thus less accurate confidence intervals to detect mediation effects). One solution to these limitations well supported in the statistical literature is bootstrapping with confidence intervals (Hayes, 2013; Jose, 2013; MacKinnon, 2008). In order to improve the accuracy of indirect effect estimates given the relative small sample size (N=196) and thus potential power for testing mediation effects in SEM (MacCallum, Browne, & Sugawara, 1996), I incorporated bias-corrected bootstrap. Bias-corrected bootstrap is a resampling method that adjusts each bootstrap sample for potential bias in parameter estimates (MacKinnon, 2008). Bias-corrected bootstrapping with confidence intervals better account for irregularity in the sampling distribution of indirect effects and likely result in estimates that are more accurate than when more traditional approaches (e.g.,Baron & Kenny, 1986) are used (Hayes, 2013; MacKinnon, 2008). Finally, I report model coefficients, direct, indirect and total effects in their unstandardized form as recommended by Hayes (2013) in order to better interpret effects in their original metrics.

Missing Data

I used full information maximum likelihood (FIML) to address missing data for control variables (N=29). I used this approach because FIML (and similar methods) are preferable over deletion approaches or nonstochastic imputation methods to reduce potential bias in model

estimates (e.g., mean imputation) (Enders, 2010; Schlomer, Bauman, & Card, 2010). Substantive results did not change with and without FIML to address missing data.

Results

Descriptive Statistics

Organized activity participation descriptive results indicate that a high proportion of youth were involved in organized activities, with 90% participating in at least one activity and nearly 30% involved in four or more activities. The highest proportion of youth were involved in school-related activities (sports and clubs: 72% and 69%, respectively), but generally speaking youth were broadly engaged across activity domains.

Measurement model. Model building results are reported in Table 4.2. Other study variables were allowed to covary with latent variables when examining measurement models. Results suggest that both measurement models are a good fit with the data, but the AIC and BIC values favor the integrated model.

Structural model. For the decomposed model (Model 1), including all paths as shown in Figure 4.1, model fit for relational aggression was moderate. Competence and peer connection were not associated with contribution (path results not shown). This may be consistent with an ecological approach suggesting that person-context and context-person contribute to positive development simultaneously rather than sequentially. I next ran the integrated model (Model 2) with all three PYD-related factors as indicators for a latent PYD construct and this mediated the relationship between participation and relational aggression. I used mean scores for each scale (peer connection, competence and contribution) as factor indicators. Sex and parent education were not associated with the outcomes and, given the relative small sample size to detect multiple mediation even with bootstrapping and CI's (Fritz & Mackinnon, 2007), I explored

simplifying both the decomposed and integrated models by removing paths from parent education and sex on the outcome (they were retained as controls for participation). Chi-square difference statistic for each (decomposed and integrated) favored the more parsimonious models without these paths (decomposed: X^2_D=0.48, integrated: X^2_D=0.70; critical X^2_D=5.99). As such, my subsequent analyses comparing integrated and decomposed models had parent education and sex on the outcome removed (model fit results given in table 4.2). AIC and BIC values for final relational aggression Models 1 and 2 suggested that the less complex model is preferred. Thus, my results indicated that the integrated model was a better fit with the data.

Final model estimates for the integrated model are given in Table 4.3. Among individual paths, sex and parent education were associated with breadth of organized activity participation. Males participated less than females and higher parent education was associated with higher participation. More participation was associated with greater assets and resources related to positive youth development (peer connection, competence and contribution). The path between PYD and relational aggression was not significant.

The bias-corrected bootstrap confidence interval for the total indirect effects indicated that PYD does partially mediate the relationship between participation and relational aggression based on 10,000 bootstrap samples; more participation was associated with more PYD-related factors, which, in turn, was associated with less relational aggression. Thus, although the individual path from PYD to relational aggression was not significant at the 0.05 level (p=0.09), the total indirect effect from breadth to relational aggression incorporating this path was significant using the bias-corrected bootstrap confidence interval procedure.

Direct effect results indicated that more participation was associated with more relational aggression. As there were unexpected direct positive effects between participation and relational

aggression, and previous researchers have found that specific activities such as sports may contribute toward aggression (Barber et al., 2001; Eccles & Barber, 1999; Fraser-Thomas, Côté, & Deakin, 2005), I conducted post-hoc analyses to examine mean differences in relational aggression by sports participation. I examined relational aggression the sports-only, sports with other activities and no sports groups using Tukey-Kramer pairwise comparisons based on Studentized Range distribution (UCLA: Statistical Consulting Group, n.d.). Tukey-Kramer is an appropriate method for exploring possible mean differences with unequal sized groups (Hilton & Armstrong, 2006; UCLA: Statistical Consulting Group, n.d.). I found no differences in relational aggression between sports-only, sports with other activities and no sports groups. As the direct effects were positive and indirect effects were negative, the total effect of participation on relational aggression was not significant.

Discussion

Relational aggression is a concerning problem among adolescents that compromises their health and well-being (Gladden et al., 2013; Youngstrom et al., 2003). Researchers, professionals and adults working with youth have increasingly focused supporting positive youth development (PYD) as one way to reduce risk of detrimental behaviors (Bowers et al., 2011; Eccles & Templeton, 2002). Organized activity participation is a key way that youth build assets and resources related to PYD during out-of-school time (Mueller, Lewin-bizan, et al., 2011). Yet, despite the important role organized activities play in supporting PYD, few researchers have examined PYD as a mechanism by which organized activities may reduce risk of negative behaviors such as relational aggression. In the current study, I empirically tested PYD as mechanism by which participation is associated with relational aggression, through the development of assets and resources (Lerner, 2005). I examined two competing mediating

models. The first was the decomposed model, in which the mediating mechanism included peer connection and competence predicting contribution. The second was an integrated model in which the mediating mechanism included a single PYD construct, composed of peer connection, competence and contribution. Thus, I tested if PYD within the proposed mediating model fit better as a decomposed or an integrated construct.

My results indicated that PYD fit better as an integrated construct. Thus, my results provide support for the notion that youth benefit most from assets and resources related to PYD when they operate collectively. This is consistent with a developmental-ecological approach, suggesting that the dynamic nature of human development includes mutually influential, reciprocal interactions between person and environment (Bronfenbrenner & Morris, 2006). These mutually beneficial relations may not be predictors and outcomes, but rather operate collectively as an important part of the process of PYD. My results suggested that competence, peer connection and contribution may together be vital aspects of promoting PYD within organized activities among youth.

Results of the total indirect effects indicated that PYD partially mediated the relationship between participation and relational aggression. These results support the role of organized activities in helping build assets and resources related to PYD. As previous researchers have suggested, participation in organized activities plays a key role in positive youth development (Agans et al., 2014; Gardner, Roth, & Brooks-Gunn, 2008; Mueller, Phelps, et al., 2011). My study explicitly investigated this notion: that a mechanism by which participation may contribute to positive and reduce risk of negative outcomes among youth is through its effects on assets and resources related to PYD. Thus, my results build on past research by providing empirical support for PYD as a mediator between organized activity participation and relational aggression. This

may have important implications for adults and professionals involved with youth in organized activities. Youth involved in organized activities may derive the most benefit when activities build important assets and resources like peer connection and competence and youth also have opportunities to influence their environment through contributions. Consequently, adults working with youth may want to incorporate aspects of contribution (to the school or community, for example) in addition to building prosocial connections and skills (competence) into the broad array of activities in which youth participate.

The direct effects indicating that greater breadth of participation was associated with more relational aggression was inconsistent with my hypotheses. Other researchers, however, have found positive relationships between organized activity participation and aggression (Barber et al., 2001; Eccles & Barber, 1999; Hansen et al., 2003). Some activities, such as sports, may be more likely to contribute to aggressive behaviors (Barber et al., 2001; Eccles & Barber, 1999; Fraser-Thomas, Côté, & Deakin, 2005). Higher levels of aggression in some activities such as sports may be due to group dynamics, undesirable social norms within the activity context, or perceived stress/anxiety related to the competitive aspects of the activity (Barber et al., 2001; Hansen et al., 2003). Yet, I did not find differences in relational aggression by sport participation group in my post-hoc analyses. This may suggest that social/contextual issues contributing to relational aggression may be common across a broad range of activities. Organized activity involvement generally peaks during early compared to mid-to-late adolescence (Denault & Poulin, 2009; Quinn, 1999) so a wider range of youth are involved in activities during the transition to middle-school compared with high school. This was evidenced by the high proportion of youth in this study (90%) who participated in organized activities. Yet, high rates of participation are compounded by the fact that relational aggression during early

adolescence is also pervasive (Tremblay et al., 2004). Thus, it is possible that organized activities may collectively reflect the social norms within the larger context. Another possible explanation is that youth who are inclined toward antisocial behavior may be participating in activities due to parents' or other adult's encouragement, with the objective of helping promote positive socialization (Hawkins & Weis, 1985). Consequently, these antisocial behaviors may continue to be expressed through aggression within the activities. These results, however, need to be interpreted with caution because group sizes within the comparative analysis were small. Furthermore, although organized activities may help build important developmental assets and resources that promote healthy development, activities alone may not address other forces that shape behavior within the larger social context. Adults and professionals working with youth across a variety of organized activities may focus on helping adolescents create a social context that focuses on healthy group dynamics and developing prosocial norms to create an environment that supports PYD.

Limitations

Several limitations of the current study should be noted. My analyses were cross-sectional so causal inferences about participation and relational aggression are not possible. Yet, my results support previous work suggesting that organized activity participation may support positive youth development and reduce risk of relational aggression. Furthermore, this study is an important initial step in investigating how organized activity participation may operate to reduce relational aggression. My results suggest that future research examining the temporal relationship between participation and relational aggression would be a useful next step to strengthen our understanding of the role participation plays in reducing negative behaviors. Second, although I included several developmental assets and resources and part of PYD, two of

Lerner's 5 C's that define PYD were not included in this study (Lerner, 2005; Scales, Leffert, & Lerner, 2004). This may be one reason that the results were limited in supporting the hypothesized relationships. Future work may focus on examining a broader range of assets and resources as mediating factors between participation and aggression. Yet, I incorporated PYD components relevant to participation and reflecting the reciprocal interactions between individual and environment critical to shaping development. Third, the sample size may have limited my ability to detect effects within the mediating model and precluded multi-group analyses to examine possible differences in the mediating effects of PYD. Yet, my results point to the potential of participation to build PYD that, in turn, helps prevent harmful behaviors among a diverse group of adolescents. These results provide support for additional research examining the mechanism by which organized activities may help prevent detrimental outcomes. Fourth, I was not able to include self-selection factors beyond sociodemographics that may be important in who does and does not participate. A broad range of youth, however, participate during early adolescence compared to mid- or late-adolescence so it is also possible that self-selection factors may not be as influential on participation during this developmental phase compared to older adolescents. Finally, my measure of participation included only breadth of involvement. Other types behavioral as well as psychological engagement may influence the relationship between participation and aggression including intensity, duration and activity importance. Researchers suggest, however, that during early adolescence, a diverse set of activities (i.e., breadth) may be key to fostering positive development (Denault & Poulin, 2009). Despite these limitations, our study provides insight about the relationship between organized activity participation and relational aggression and a mechanism by which activity participation may act to promote positive development and reduce risk of negative outcomes.

These limitations notwithstanding, my results contribute to the literature in several key ways. First, my study examined the mechanism by which participation may influence relational aggression through PYD. Second, I compared models using a decomposed and integrated measure of PYD informed by developmental assets as described by Lerner (2005), but also incorporates a developmental-ecological approach (Bronfenbrenner & Morris, 2006). Third, I examined participation using a developmentally appropriate measure and accounting for important sociodemographic factors. Fourth, I investigated these relationships with an economically and racially diverse sample during early adolescence when risk of aggressive behaviors is high. Few researchers have explicitly tested PYD as a mechanism by which organized activity participation influences youth outcomes.

Conclusions

Relational aggressive behavior among early adolescents is a pervasive public health problem that negatively influences the health and well-being of youth (Youngstrom et al., 2003). Researchers, professionals and others working with youth to address different types of aggression have generally evolved to using strength-based approaches such as promoting positive youth development through organized activity participation to support positive and prevent negative outcomes. My results support PYD as a mechanism by which organized activities may operate to reduce negative behaviors among youth. They suggest that a promising approach to reducing relational aggressive behaviors may be to develop organized activities that promote competence, positive peer relationships, and contribution. Yet, organized activities fostering PYD alone may not fully address relational aggression. Other factors, such as issues related to the social context, likely also contribute to relational aggression and need be addressed. This study provides a unique examination of the mechanism by which participation may

influence negative outcomes and how organized activities contribute to the health and well-being of youth.

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Table 4.1 Descriptive statistics for study variables

Model variables	Mean(SD)	Cronbach's alpha
Breadth of participation	2.55(1.67)	n/a
Peer connection	3.48(0.60)	0.90
Competence	3.61(0.41)	0.71
Contribution	3.26(0.59)	0.65
Relational aggresssion (log)	0.49(0.41)	0.83

Table 4.2 Decomposed and integrated PYD model results

Model results	X2, df	X2/df ratio	CFI	RMSEA (90% CI)	AIC❖	BIC
Measurement models						
Model 1: decomposed model	232.45, 130	1.78	0.88	0.063(0.050, 0.076)	6599.56	6792.97
Model 2: integrated model	27.39, 14	1.96	0.88	0.070(0.029, 0.108)	2774.17	2843.01
Structural models						
Model 1: decomposed model	276.35, 131	2.11	0.87	0.076(0.063, 0.088)	6266.27	6449.27
Model 2: integrated model	22.01, 13	1.69	0.92	0.060(0.000, 0.102)	2468.55	2533.91

❖When comparing non-nested models using AIC/BIC, a lower score is preferable

Table 4.3 Final integrated model results

Paths	**Estimate (SE)**
Sex[§] → participation	-0.79(0.23)**
Parent education → participation	0.19(0.07)*
Participation → PYD	0.04(0.02)*
PYD → relational aggression	-0.82(0.48)
Participation → relational aggression (*Total direct*)	0.04(0.02)*
Indirect and total effects	**Estimate (CI)**
Total indirect (breadth → PYD → relational aggression)	-0.03(-0.07, -0.01)*
Total	0.01(-0.02, 0.05)

[§]female =reference group

**p≥0.001 *p≥0.05

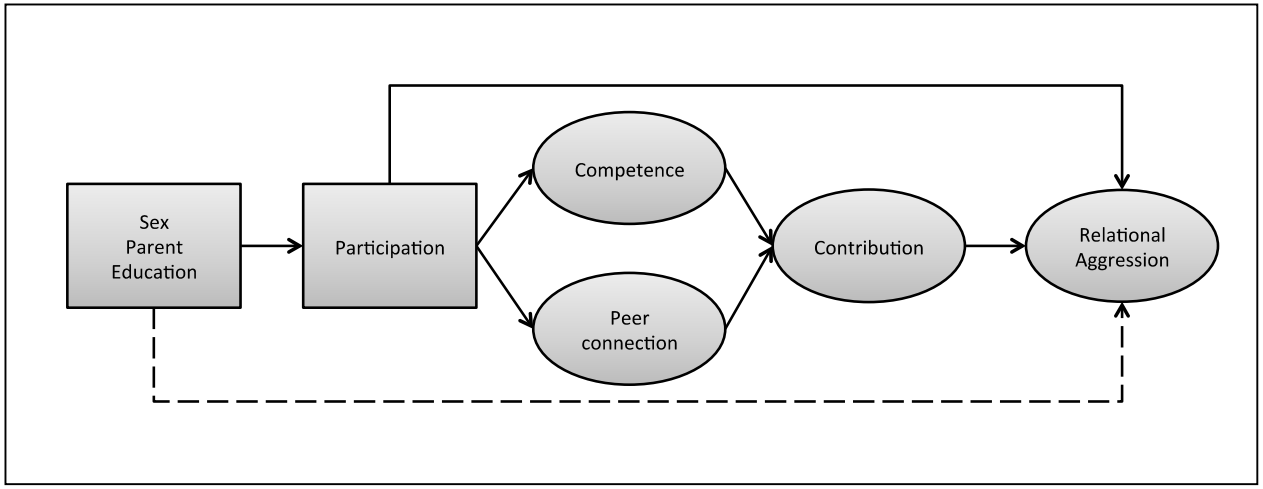

Figure 4.1 The decomposed model for the relationship between organized activity participation and relational aggression, mediated by PYD.

---path trimmed from final model

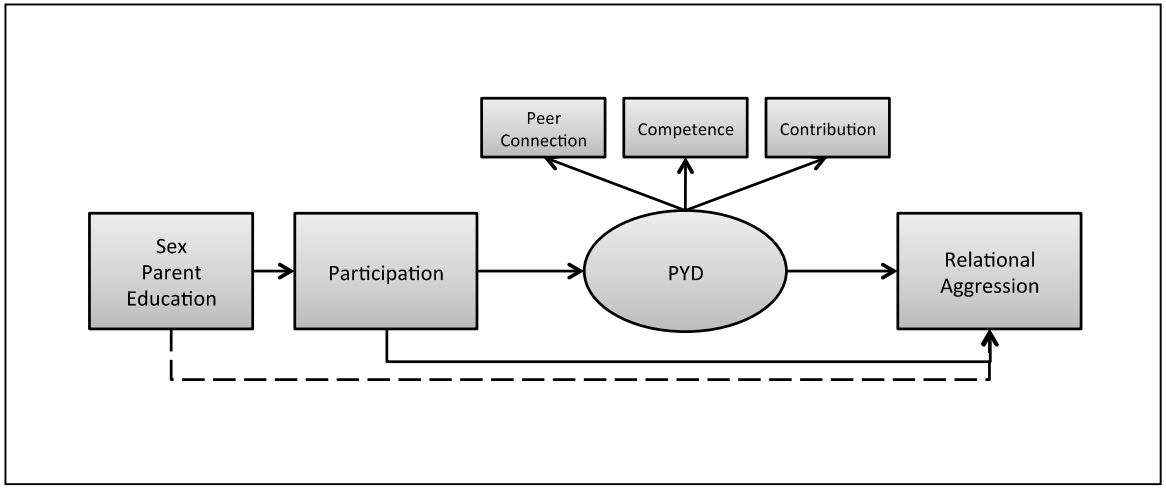

Figure 4.2 The integrated model for the relationship between organized activity participation and relational aggression, mediated by PYD

---path trimmed from final model

Chapter 5

Organized Activity Participation and Positive Youth Development: Findings and future directions

My three studies examine the relationship between organized activities and adolescent development. Although researchers have examined the link between participation and outcomes during adolescence and emerging adulthood, less emphasis has been placed on examining how factors that shape development influence youth participation over time, how different patterns of participation may predict outcomes in early adulthood, and the mechanism by which participation shapes development. Thus, a major goal of my dissertation was to contribute to our understanding of organized activities and youth development by investigating multiple aspects of this relationship: What factors may facilitate or inhibit how adolescents participate over time? How do patterns of participation may contribute to the health and well-being of youth into adulthood? And what are the mechanisms by which participation influences outcomes? My studies incorporated complimentary positive youth development (PYD) and developmental-ecological frameworks to investigate these relationships in order to focus on both preventing problems and on building the positive potential of youth while considering the dynamic and interactional nature of their development.

PYD was a central conceptual/theoretical framework guiding my research because it represents a shift in the focus of youth development work from primarily a problem-based to a strength-based approach. For nearly a century, adolescent development was largely regarded as a time of *storm and stress* and positive development was the absence of detrimental outcomes

(Arnett, 1999; Hall, 1904). Yet, Pittman et al. (2003) noted that "problem free is not fully prepared." (p. 6). Consequently, prevention of negative outcomes alone may not prepare a young person for a successful transition to adulthood (Pittman & Wright, 1991). The PYD approach represents a broader, more optimistic framework for investigating youth development and "resists conceiving of the developmental process mainly as an effort to overcome deficits and risk" (Damon, 2004, p. 15) and instead views young people as important societal resources to be developed (Damon, 2004; Mueller, Phelps, et al., 2011). The PYD perspective recognizes the strengths and potential in all youth and focuses on factors that both prevent negative outcomes and promote healthy development (Damon, 2004; Lerner, Lerner, von Eye, Bowers, & Lewin-Bizan, 2011). Furthermore, PYD is a developmental systems-based model that emphasizes the plasticity of human development through interactions between the individual and his/her developmental contexts (Lerner, Lerner, & Benson, 2011). Thus, all youth have the potential to thrive when they have opportunities to engage in positive interactions with their environment.

Given the focus of PYD on developmental processes and person-context interactions, the developmental-ecological model also guided my research. Using the developmental-ecological model, these interactions, called proximal processes, represent key forces shaping development that are influenced by the individual, the context, and the transaction between them over time (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006). Youth development and behavior are the result of complex interactions between the person and environment; understanding factors and processes that shape developmental trajectories is key to adolescent health and well-being. From an ecological perspective, the focus of PYD is on supporting proximal processes that help youth build promotive assets (e.g., individual skills) and resources (e.g., supportive relationships) to foster positive developmental trajectories and reduce risk of

negative outcomes (Lerner, 2002, 2005). One important way that adolescents engage in interactions that may build assets and resources associated with positive development is through organized activity participation.

Organized activity participation presents a unique opportunity for promoting positive development among adolescents during their free time. Organized activities frequently constitute a significant portion of how youth spend time away from school and family (Mueller, Phelps, et al., 2011). Participation in structured, supervised activities during non-school hours may be a valuable opportunity to build youths' assets and resources, and may be a means to offset developmental risk factors (Gardner, Browning, & Brooks-Gunn, 2012). Organized activities refer to a broad-range of adult-sponsored activities outside the school curriculum within diverse contexts including school-based extracurricular activities (e.g., sports or clubs), youth development programs (e.g., afterschool programs) and community-based programs (e.g., Boys & Girls Clubs) (Bohnert, Fredricks, & Randall, 2010). These various types of organized activities may offer vital opportunities to develop assets (e.g, personal skills) and resources (e.g., positive social relationships) related to PYD. Consequently, researchers support participation in organized activities as a constructive use of adolescents' time (Agans et al., 2014; Eccles, Barber, Stone, & Hunt, 2003). Yet, the relationship between organized activities and PYD is complex. In this dissertation, I sought to contribute to our understanding of organized activities and PYD through investigating multiple dimensions of this complex relationship.

Summary of findings

Study 1: Trajectories of Participation Among Urban Adolescents: An Analysis of Predisposing Factors

In my first study, I found that predisposing developmental risk and promotive factors influence the likelihood of youth following a particular organized activity participation trajectory

through high school. This study is one of the first attempts to examine subgroups of participation trajectories among at-risk adolescents. I found three distinct participation trajectories during the high school years in a sample of urban, African American adolescents: 1) low and decreasing; 2) moderate and consistent; and 3) moderate and increasing. Predisposing factors, including substance use and parental support were associated with trajectory class membership. More substance use was associated with lower odds of being in the moderate/consistent versus low/decreasing participation trajectory class (subgroup) and more parent support was associated with lower odds of being in the moderate/increasing versus moderate/consistent trajectory class. Youth who engaged in substance use early in adolescence were less likely to become involved over time in activities that support positive development. Thus, a risk factor such as early substance use may impede opportunities for participation in activities that support positive development in addition to increasing risk of negative outcomes. Yet, youth with lower levels of parent support, which may be considered a developmental risk, were more likely to be in the trajectory group that increased participation over time. One interpretation of this counter-intuitive finding may be that adolescents with lower levels of parental support may become more involved over time to compensate for low perceived support at home by developing meaningful, supportive relationships with non-familial adults through organized activity involvement (Lerner et al., 2005; Zimmerman, Stewart, Morrel-Samuels, Franzen, & Reischl, 2011).

I also sought to explore if involvement in specific or multiple activity contexts influenced distinct participation trajectories over time. Consistent with developmental-ecological and PYD approaches, researchers suggest that participation across multiple contexts may provide expanded opportunities for resource building and asset development to support PYD (Linver, Roth, & Brooks-Gunn, 2009; Pedersen, 2005). My results supported this finding, as participants

involved in multiple contexts were more likely to be in the consistent or increasing trajectory class than the low participation class, while I found no differences in likelihood of trajectory group membership by school, church or community contexts alone. Taken together, the results of Study 1 suggested that youth may follow distinct participation trajectories during the high school years and that predisposing risk and promotive factors, in addition to sociodemographic and self-selection factors, may influence trajectory subgroup membership. In addition, youth who participate across contexts are more likely to participate, either consistently or increasing, over time.

Study 2: Trajectories of Participation Among Urban Adolescents During the High School Years: Associations with Young Adult Outcomes

My second dissertation study was focused on examining how distinct participation trajectories during the high school years influenced outcomes in young adulthood. Researchers have found that positive outcomes associated with organized activity participation may extend into emerging adulthood (Gardner, Roth, & Brooks-Gunn, 2008; Mahoney, Cairns, & Farmer, 2003; Mahoney & Vest, 2012; Zaff, Moore, Papillo, & Williams, 2003). Yet, most have not explored the effects of high school involvement on early adult outcomes. Furthermore, few researchers have investigated the effects of trajectories of participation on outcomes later in life into young adulthood (between the ages of 25 and 40) and among adolescents growing up in urban, disadvantaged communities (Arnett, 2000; Fredricks & Eccles, 2010). In an effort to address this, my second study investigated the relationship between participation trajectories during adolescence and psychological well-being, employment-related and educational outcomes in young adulthood (approximately mid-thirties).

I found that organized activity participation trajectories during high school were associated with young adult outcomes. Consistent with the developmental-ecological framework,

my results support the notion that proximal processes that occur most extensively over time may have the greatest influence on developmental trajectories (Bronfenbrenner & Morris, 2006). Furthermore, this study builds on research investigating the longer-term effects of organized activity participation among youth.

I found that outcomes related to psychological well-being, depression and life-satisfaction in young adulthood differed by trajectory class membership. Adolescents in the increasing trajectory class (subgroup) reported lower depressive symptom and higher life satisfaction scores than adolescents in the low trajectory class. Youth who increased their participation over time may have experienced greater exposure to positive experiences and opportunities for skill building and prosocial relationships. This exposure may be particularly influential during a developmental period characterized by increasing independence and greater exposure to social and personal stressors (e.g., violence exposure), particularly within the context of an urban, disadvantaged community (Cobb, 2007; Peck, Roeser, Zarrett, & Eccles, 2008). Expanded opportunity for participation may have helped youth in the increasing group develop assets and resources that contributed to their psychological well-being in young adulthood.

I also found that adolescents in the increasing trajectory subgroup engaged in less substance use in young adulthood than those in the low or consistent subgroups. Substance abuse can be a coping mechanism for dealing with stressors or trauma (NIH, 2008), and researchers suggest that racial/ethnic minority populations experiencing social disadvantage are among those most at risk for substance abuse disorders and substance abuse-related consequences due to disproportionate exposure to structural-level stressors (Mulia, Ye, Greenfield, & Zemore, 2009; Mulia, Ye, Zemore, & Greenfield, 2008). Organized activity involvement may be a useful way for adolescents to build assets, resources and encounter positive developmental experiences that

aid in handling stressors experienced later in life. Consequently, this may help youth avoid substance abuse-related disorders and consequences during young adulthood.

I did not find differences in employment-related outcomes by participation trajectory. One explanation for this finding may be related to the economic context in which the study took place. The study community, Flint, Michigan, has suffered from higher unemployment levels compared to state and national averages for well over a decade (Bureau of Labor Statistics, 2014). Thus, my finding regarding unemployment may be a reflection of the limited employment opportunities available in the area, rather than factors related to employability or skill level, or any positive effects high school organization participation may have on employability.

I did find, however, differences in young adult educational attainment by participation trajectory. Adolescents who increased their involvement over time were more likely to seek post-high school education than those in either the low/decreasing or moderate/consistent participation trajectory groups. Educational attainment may be a reflection of positive development through bolstering youths' competence (Gardner et al., 2008). Adolescents who became increasingly engaged in organized activities may have greater exposure to opportunities for developing competence across multiple domains including academic and social competence by intensifying these interactions over time (Gardner et al., 2008). Taken together, the findings from this study suggest that youth who increase their participation over time appear to derive the most developmental benefit. This is one of the few studies of the effects of participation trajectories during adolescence on outcomes during young adulthood.

Study 3: Organized Activity Participation and Aggressive Behavior: The Role of Positive Youth Development

In my third dissertation study, I examined positive youth development (PYD) as a mechanism by which organized activity participation influences youth outcomes. Researchers

suggest that building assets and resources related to PYD is a mechanism by which organized activity participation promotes positive and prevents negative outcomes (Linver et al., 2009; Mueller, Phelps, et al., 2011), yet few have empirically tested this. In this study, I investigated if assets and resources associated with PYD mediated the relationship between organized activity participation and relational aggression. I tested two competing models, one with decomposed PYD factors and one with an integrated PYD factor. In the decomposed model, I examined if competence and connection were associated with contribution as a mediating mechanism between breadth of participation and relational aggression. In the integrated model, I examined peer connections, competence and contribution as indicators for an integrated, latent PYD factor mediating the relationship between participation and relational aggression.

My results indicated that PYD better fit as an integrated versus decomposed construct. Consistent with the developmental-ecological approach, my results suggest that youth benefit most from assets and resources related to PYD when they operate collectively. My results also indicated that PYD partially mediated the relationship between participation and relational aggression (indirect effects). These results support the role of organized activities in contributing to assets and resources related to PYD and preventing negative outcomes. Participation in organized activities plays a key role in positive youth development through providing opportunities to nurture prosocial relationships (peer connection), develop important skills (competence) and helping others and the community as a whole (contribution) (Agans et al., 2014; Gardner et al., 2008; Mueller, Phelps, et al., 2011). Through building these factors within organized activities, youth may be less likely to engage in relational aggressive behavior.

I did find, however, a direct and positive effect of breadth of participation on relational aggression (direct effects). Although this was inconsistent with my hypothesis, other researchers

have found positive relationships between organized activity participation and aggression (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999; Hansen, Larson, & Dworkin, 2003). This counter-intuitive finding may explained in several ways. First, researchers have found that certain organized activities may actually contribute to aggression, such as sports (Barber et al., 2001; Fraser-Thomas, Côté, & Deakin, 2005). Yet, I did not find any differences in relational aggression among youth participating in only sports, sports with other activities and no sports in my post-hoc analyses. Second, although organized activities may help build developmental assets and resources that promote healthy development, activities may not address forces that shape behavior within the larger social context. Aggression during early adolescence is pervasive (Tremblay et al., 2004), and adolescents involved in activities during this developmental stage may collectively reflect the social norms within the larger context. Thus, although participation may help build an individual's assets and resources, it may not translate to changes necessary to alter the larger social environment in which aggression occurs.

Taken together, the results from Study Three suggest that organized activity participation does help build assets and resources related to PYD, and that this may help reduce relational aggression among adolescents. Thus, my results support PYD as a mechanism by which organized activities influence youth outcomes. Yet, consistent with other researchers, I also found that the relationship between participation, PYD and negative youth outcomes is not always straightforward (Eccles & Gootman, 2002; Lewin-Bizan et al., 2010; Phelps et al., 2007). Through teasing apart the direct effects of participation on outcomes and the indirect effects through PYD, I was able to explore both the protective (indirect effects) and the risk (direct effects) aspects of this relationship. These findings suggest that youth may build important PYD-

related assets and resources through organized activity participation that protect against negative outcomes.

Limitations and Future Directions

My three dissertation studies have limitations that should be noted. First, Studies One and Two were conducted in a single, inner-city location and results may not be generalizable to other locations. Yet, adolescents living in urban, disadvantaged areas are generally an understudied group in the participation literature. Furthermore, this is a critical population to study as organized activities may be particularly beneficial for youth at higher risk for negative developmental trajectories and who may participate less than their higher SES counterparts (Bohnert, Richards, Kolmodin, & Lakin, 2008; Pedersen et al., 2005). Nevertheless, future research that examines distinct participation trajectories in both urban, disadvantaged and nationally representative youth may help further our understanding of how youth participate during adolescence, what factors influence their participation and how these trajectories are associated with outcomes during adolescence and adulthood.

Second, each study had potential issues with sample size. The increasing trajectory group in Studies One and Two included fewer youth than the other trajectory groups and Study Three had a relatively small sample to detect effects in a mediating model. Yet, the increasing group fell within acceptable range for a latent trajectory class (Jung & Wickrama, 2008) and is substantively meaningful for understanding positive youth development (Mahoney et al., 2003). In addition, the fact that I found differences in hypothesized directions for the increasing group suggests that the effects are somewhat robust and that there was sufficient statistical power to find difference. Future research, however, that explores predictors of membership within this trajectory class and how outcomes may differ between this trajectory class and other trajectory

classes would be useful because the increasing participation group is among the least studied. In this way, we may be better able to understand the unique considerations of membership within this subgroup. For Study Three, despite the small sample size, I found some evidence to support PYD as a mechanism by which participation influences youth outcomes. Future research that has sufficient power to examine PYD as a mediating mechanism, both as individual assets/resources and collective, and explore possible differences in this mechanism by important sociodemographic characteristics such as sex, would be useful to replicate these findings and further contribute to how participation may promote positive and prevent negative outcomes.

Third, my analyses for Study Three were cross-sectional so causal inferences about participation and aggression were possible. Yet, my results support previous work suggesting that organized activity participation can support positive youth development and prevent negative outcomes. Furthermore, this study is a critical initial step in investigating how organized activity participation may operate to reduce aggression. Future research examining the temporal relationship between participation and aggression would be a useful next step to deepen our understanding of the role participation plays in promoting PYD and reducing risk of negative outcomes such as aggression.

Fourth, my measures may have not fully captured all dimensions of organized activity participation. Measuring organized activity participation, however, has been the subject of much debate. Researchers have proposed several ways to operationalize participation (see Bohnert et al., 2010; Busseri & Rose-Krasnor, 2010; Fredricks & Eccles, 2006; Rose-Krasnor, 2009), but no consensus exists on how to measure participation. Furthermore, researchers addressing participation measurement often draw conclusions based on patterns of organized activity participation among nationally representative or middle-class white adolescents (Bohnert et al.,

2010; Busseri & Rose-Krasnor, 2010; Farb & Matjasko, 2012), which may not be best-suited to patterns of participation among more diverse youth or those in specific settings. Moreover, researchers may not consistently consider how different ways of operationalizing participation may be more or less suited to adolescents' developmental stage; for example, breadth of participation may be well suited to capture participation of early adolescents but may not best reflect participation among mid- or late-adolescents (Busseri & Rose-Krasnor, 2009). Yet, I utilized developmentally-informed measures of participation for across the studies. Future research that incorporates multiple dimensions of participation, including behavioral (e.g., breadth or intensity) and psychological engagement (e.g., importance or meaningfulness) suitable for developmental stage, and over time among diverse groups of adolescents may help deepen our understanding of how these dimensions are associated with developmental processes and outcomes.

Implications

Participation in organized activities plays a key role in positive youth development through providing youth with opportunities to learn skills, develop self-confidence, nurture prosocial relationships, and avoid negative developmental trajectories (Eccles & Gootman, 2002; Gardner et al., 2008; Mueller, Lewin-bizan, & Urban, 2011). The findings from my dissertation studies support this assertion and suggest that the promotive effects of participation may extend into young adulthood. Although organized activity participation is not a panacea to address all the issues facing youth, participation does provide a unique opportunity to promote the healthy development of adolescents during out-of-school time and help increase the likelihood of positive and decrease the risk of negative outcomes (Bohnert, Richards, Kohl, & Randall, 2009).

Not all youth, however, have the same opportunity to capitalize on the developmental benefits of organized activity participation. Results from Studies One and Two, for example, indicated that the proportion of youth in the moderate/consistent and moderate/increasing participation trajectory groups were considerably lower than those in the low/decreasing group; these results are consistent with what other researchers have found in terms of relative low levels of participation among youth living in urban, disadvantaged contexts (Larson, Richards, Sims, & Dworkin, 2001; Pedersen, 2005; Quinn, 1999). This may be due to contextual factors, such as resource and access limitations and safety concerns of parents (Larson, Richards, Sims, & Dworkin, 2001; Pedersen, 2005; Quinn, 1999). Youth living in these areas may have more limited opportunities available to them compared to their suburban counterparts due to financial resource constraints for funding organized activity programming, including providing skilled staff and transportation. Furthermore, parents living in low-resource/high crime areas report significant concern regarding exposure to dangers in the neighborhood and possible negative influences on their children; as such, they may be more likely to limit their children's time outside the home (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999; Larson et al., 2001; Robers, Kemp, Truman, & Snyder, 2013) Additionally, as my dissertation results suggest (Study 1), exposure to developmental risk factors such as early substance use may also inhibit the likelihood of participation during middle and late adolescence. Policy makers, organizations, professionals and adults interested in promoting organized activity participation need consider addressing these structural and risk factors in order to increase adolescent participation. Through increasing funding for programs, including staff support, space, equipment, and transportation needs schools, organizations and communities may be better equipped to improve access to programs for youth. Safety is another important issue potentially influencing participation.

Consistent with an ecological approach, implementing community-level crime prevention programs, in addition to focused efforts to expand programming, may also help facilitate access for youth. Finally, enhanced efforts toward reducing risk behaviors early in adolescence, including substance use and simultaneously promoting engagement youth in organized activities during early- and mid-adolescence may help reduce barriers to participation. Thus, although participation has potential to build promotive factors and offset risks, youth who may derive the most benefit may also be those facing the greatest challenges to participation. Improved efforts toward addressing contextual barriers and developmental risk factors that impede opportunities for participation are crucial to facilitating participation and its potential to support positive development.

In addition to addressing contextual barriers and developmental risk factors to participation, organizations, professionals and adults working with youth need also focus on ways to expand youths' engagement, both behavioral (time spent in activities) and psychological (activity importance/meaningfulness). My Study Two results suggest that youth who expand their participation over time may derive the most developmental benefit in early adulthood. A key aspect of the positive outcomes among this group may be program features that attracted and sustained meaningful engagement over time (Weiss et al 2005). Stimulating, enriching environments that meet the unique developmental needs of adolescents (e.g., increasing independence, navigating social relationships) may help promote engagement over time. In order to promote youth engagement, adults working with youth may benefit from focusing on developing/enhancing specific features of organized activity programs including relationships with caring adults, opportunities to socialize with peers, exposure to interesting and enjoyable learning experiences (building competence), and opportunities for meaningful contributions

(Bohnert et al., 2010; Checkoway, 2011; Weiss, Little, & Bouffard, 2005). These features may help promote engagement (Bohnert et al., 2010; Checkoway, 2011; Weiss et al., 2005) and, as my Study Three results indicate, reduce risk of negative outcomes. Through working with youth, adults can provide organized activity experiences that help build important developmental assets and resources and meaningfully engage youth over time. In sum, through addressing contextual barriers, developmental risk factors and collaboratively expanding opportunities for participation, communities, organizations, professionals and adults working with youth may be better able to incorporate organized activities key way to build assets and resources young people need to become healthy, productive, adults.

As a whole, promoting PYD through organized activities is a promising approach to supporting positive and preventing negative outcomes among youth. Yet, this approach does not appear to universally prevent problem behaviors in addition to promoting healthy development (Arbeit et al., 2014; Lewin-Bizan et al., 2010; Phelps et al., 2007). My dissertation results suggest that organized activity participation alone may not be sufficient to prevent negative outcomes, both in the short and long term. A comprehensive approach that incorporates strategies to build specific skills focused on reducing risk of detrimental outcomes and address issues related to the larger social context in addition to building PYD-related factors may be particularly effective in both promoting healthy development and reducing risk of negative outcomes. My research focused on how organized activity participation, through examining the activities youth participate in every day, may contribute to PYD. The results of my studies provide promising and additional evidence that efforts to create opportunities for participation among youth will help expand adolescents' resources and assets to address the challenges they face. Taking this integrative approach, professionals and adults working with youth may be able

to focus on fostering positive development while also providing youth with the skills and resources they need to reduce the risk of negative outcomes, increase likelihood of positive outcomes and help adolescents transition into healthy, productive adults.

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