MEDIATIONAL PATHWAYS BETWEEN HIGH SCHOOL EXTRACURRICULAR PARTICIPATION AND YOUNG ADULT EDUCATIONAL ATTAINMENT: A STRUCTURAL EQUATION ANALYSIS

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Little is known about the mechanisms by which extracurricular participation in high school influences educational attainment in young adulthood. Also limited is an understanding of the different types of extracurricular participation and how various activities may manifest within the relationship. The purpose of this study was to examine the link between high school extracurricular participation and educational attainment, with social capital, parental expectations, and academic achievement presented as mediators. Additionally, the present study will explore socioeconomic differences in the proposed relationships. The sample consisted of 5,239 ninth through twelfth graders from the National Longitudinal Study of Adolescent Health (Add Health). Structural equation modeling (SEM) and multiple-group SEM were used to test pathways.

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CHAPTER 1

INTRODUCTION

Statement of Problem

Conventional wisdom and American ideals have alluded to the ability of sports participation to increase educational attainment (Reiss, 2001). However, the literature remains varied on the relationship between sport and educational attainment, needing further evaluation (Eide & Ronan, 2001; Reiss, 2001;). The central purpose is to examine the relationship between high school sports participation and educational attainment of young adults including the important mediators of social capital, parent expectations, and high school academic achievement. Additionally, the dissertation assesses these relationships with regard to socioeconomic groups as low-income youth are disadvantaged in both access to participation and attainment of education (Gregory and Huang, 2013; Reardon, 2011; Sandefur et al., 2006; Snellman et al., 2015).

Extracurricular activities' relationship to the overall educational mission has been a popular area of sociological research since Coleman's *The Adolescent Society* (1961), which suggested that sports undermine learning (Eitle and Eitle, 2002). The educational mission of public education in the United States may be debatable. Initially, public education was formed to enhance and sustain democracy through educating citizens to be informed voters, namely nation building and national independence (Meyer, Ramirez, & Soysal, 1992). At this point, mass schooling has become a world norm and is written into many constitutions (Meyer, Ramirez, & Soysal, 1992).

However, public education more recently has been seen as an institution of preparation for higher learning. A college degree has become an increasingly important marker of status

attainment with tremendous impact on life outcomes, most notably future earnings (Goyette, 2008; Gregory and Huang, 2013; Sandefur et al., 2006; Zhimin and Yao, 2015). As college enrollment rates continue to climb, the college drop-out rates continue to be staggering (Mahatmya and Smith, 2017). College drop out rates may be due to the American educational system maintaining a level of sameness leading to high school students having unrealistic expectations of their future (Turner, 1960). However, permeated by institutions and perhaps hidden under the sociological veil are the differences afforded to students.

This difference is an important area of research for sociologists. The quality of knowledge about the factors that contribute to adolescents' experiences through institutions may help increase understanding of future educational attainment. Extracurricular activities may be one such service that possibly enhances or impairs the life chances of young students. This study adds to the quality of knowledge about extracurricular activities possible influence on educational attainment, helping guide various decisions, programs, policies, and budget allocation.

A critical limitation of the existing knowledge on extracurricular participation and its impact on future educational attainment is the lack of disaggregation in the research on both type of participation and population served. Extracurricular participation is not necessarily uniform. Activities available to students vary from academic clubs and competitions, musical and artistic performance, government, and physical activities such as athletics.

These activities can vary substantially in interests as well as skills needed or obtained; but most importantly to the present study, these activities vary in access to social capital and relatability to education (Hanks and Eckland, 1976). Sports participation, in particular, has drawn ample attention from popular society at large as well as in the literature (Barron et al.,

2000; Bowen and Hitt, 2016; Gorry, 2016; Pfeifer and CorneliBen, 2010; Reiss, 2001; Snellman et al., 2015). Therefore, this study hopes to expound upon the literature by examining the proposed direct and mediated relationships of extracurricular participation and educational attainment by separating participation into four categories: sport, non-sport, a mixture of both sport and non-sport and no participation.

Target populations may also vary considerably in regards to the service possibly provided by extracurricular participation. Effects are best examined within the social context of race, gender, and the like. This study investigates extracurricular participation and its effect on educational attainment through the lens of socioeconomic disadvantage. Many school districts across the country subscribe to "pay to play" programs as a means of supplementing the school budget, feasibly limiting access to low-income students (Snellman et al., 2015). Additionally, the educational achievement gap between socioeconomic groups continues to grow (Snellman et al, 2015). To inform institutions on possible methods of improving youth life chances through education, this underserved population is of particular interest.

The methodological approach throughout the literature to the topic at hand has also been extremely diverse. The current study provides a strong contribution methodologically by using the National Longitudinal Study of Adolescent Health (Add Health), a comprehensive, nationally representative, and longitudinally collected secondary data set of American adolescents (Harris et al., 2009). Additionally, the study uses structural equation modeling (SEM) for analysis allowing for the direct and indirect effects of both latent and observed variables to be estimated within one model (Hoffman & Lowitzki, 2005; Hoyle and Panter, 1995; Thompson, 2000).

Importance of the Study

Educational attainment has shown to have incredible and increasing importance for various life outcomes, especially future earnings (Goyette, 2008; Sandefur et al., 2006; Zhimin and Yao, 2015). Therefore, more research is needed to inform intervention strategies and policy in the area of educational attainment to increase the life chances of children (Mahatmya and Smith, 2017).

While each level increase in education is beneficial to life outcomes, the attainment of a college degree shows to be especially impactful for future earnings (Gregory and Huang, 2013; Sandefur et al., 2006). Even though many more students are enrolling in college than ever before, the graduation rates are extremely low (Mahatmya and Smith, 2017). Low graduation rates may be because of a lack of resources (Mahatmya and Smith, 2017). Therefore, to increase the life chances of children, intervention strategies and policies also need more information about those specific resources that may be most beneficial to educational attainment.

Institutions have the power to enhance or hinder resources needed for future educational attainment. The importance of this study rests in two sociological institutions: the family and the school. This study argues that family and schools influence the outcome variable of educational attainment via the resource of social capital. Social capital has been shown to have enough effect on educational outcomes, with important controls duly considered, that further research and policy must consider its impact (Sandefur et. al., 2006). More specifically, the means in which social capital can be built or enhanced through the institutions of family and schools is an advantageous area of study (Parcel & Bixby, 2016).

Public schools are an incredibly pervasive social institution within American society. Parents, teachers, coaches, and school administrators are part of the matrix of decision-making in

the school structure. One piece of the American public school system paramount to this study is extracurricular activities. Extracurricular activities may or may not be a resource beneficial to educational attainment. Dumais (2008) for one suggested that all students be encouraged to participate in a school activity because of the educational benefits.

This study focuses on the extracurricular activity of sports. Sports have a considerable number of participants and substantial budget allocations within the high school system (Brown et. al., 2014). Therefore, the relationship of sport to educational attainment is an important area of study operating under the larger umbrellas of the sociology of education, sociology of the family, and sociology of stratification. Underlying the academic premise is the motivation of contributing research that will improve the life chances of children.

Interestingly, the United States is one of the only nations that include sports as part of the educational system; other countries keep sports organizations separated from the school institution in the form of clubs (Bowen and Hitt, 2016). Sports were first introduced to public education in New York City in 1903 (Bowen and Hitt, 2016). Before 1903, organized school sports were only a part of boarding schools serving those from privileged backgrounds (Pruter, 2013).

Since sports are part of the overall school structure, this study also has practical implications in school funding. Historically sports have been reduced or cut from schools during times of financial hardships. For instance, during the great depression, schools could no longer fully sponsor sports and non-school sports leagues such as Pop Warner, and Little League was developed (Pruter, 2013).

Recently, many schools have had to reduce funding to high school athletic programs (Barron et. al., 2000). Sports are the first of the extracurricular activities to receive

disproportionate budget cuts when school districts are reducing spending (Bowen and Hitt, 2016). As a means of supplementing, schools have introduced pay to play programs (Snellman et. al., 2015). Logically, low-income students have less opportunity to participate (Pruter, 2013). Although, the structure of pay to play programs may vary depending on the particular sport offered (Eitle and Eitle, 2002). Therefore, policy-makers need help understanding if sports are in line with the educational mission and if so what are the mechanisms explaining this relationship (Gorry, 2016). As Gorry (2016, p. 622) states, "understanding the distribution of benefits will help policy makers decide whether sports reduce inequality or leave more children behind."

Americans generally believe sport is one of the most democratic and meritocratic activities (Riess, 2001). Americans see adolescents as inherently interested in sports helping with both students' engagement in school and serving less-advantaged children (Bowen and Hitt, 2016). Yet, as mentioned, equal access to sports may be compromised by lack of school funding. Additionally, evidence continues to mount showing that the educational achievement gap between low and middle/high income groups is growing (Snellman et. al., 2015). Access to extracurricular activities may be part of the growing achievement gap and therefore could be critical to the civic future (Snellman et. al., 2015). As Bowen and Hitt (2016, p.11) stated: "removing these activities from K-12 education would likely have negative effects on historically underserved school communities".

Other readings suggest that the institution of schooling does not offer a means of inclusion into "people" resources such as social capital, but rather a means of exclusion perpetuating social stratification. Capital develops in the school system in the form of such things like linguistic aptitude, previous academic culture, and formal knowledge (Lamont & Lareau, 1988). If a student does not display desirable capital, exclusion may be the result

(Lamont & Lareau, 1988). School personnel possibly exclude students unintentionally by rewarding and gravitating towards those students that demonstrate the communication skills of high status (Stanton-Salazar, 2011). Also, bureaucracy, personal agenda, budget constraints, accountability schemes, may distract and deter school personnel from building wide spread social support within the school (Stanton-Salazar, 2011).

The family is also a pervasive institution affecting the future educational attainment of children. Interestingly, class background may dictate child-rearing practices (Lareau, 2002). Middle-class parents tend to raise their children under the philosophy of cultivation, cultivating children's talents. In contrast, working class parents tend to raise their children from the perspective of natural growth providing basic needs while children develop their talents on their own (Lareau, 2002). The daily routine of those families with a cultivation approach includes a whirlwind of scheduled activities centered around the child (Lareau, 2002). Most activities are with same aged children while being organized and controlled by adults. Conversely, the daily routines of children raised within the natural growth approach are of the child's choosing, created and facilitated by children usually family members or friends, who may vary in ages (Lareau, 2002).

Neither approach is inherently better than the other as both have relative positive and detrimental consequences. In regards to social capital and educational attainment, however, the middle-class parental style of cultivation produces more ability to achieve valuable outcomes because of more comfort with adult led institutional structures (Lareau, 2002).

Since social capital can generate returns of educational attainment similar to financial or human capital of parents (Sandefur et al., 2006), families can use this knowledge to exercise agency and become "strategists" in helping their children achieve high levels of educational

attainment (Croll, 2004). Interestingly, families may have more control over building social capital than other structural factors such as parent education, single-parent homes, moving, or parent income (Sandefur et al., 2006). While these factors do matter, the social capital between parent and child also matters (Croll, 2004). Therefore, if social capital does in fact vastly alter educational attainment of young adults, it may be more practically useful to build, promote, fund, or create policy in this vein rather than approach the less controllable structural factors (Sandefur et al., 2006). By the same token, if organized school sports show a positive impact on educational attainment, parents need to be aware and possibly encourage their children to play sports (Pfeifer and CorneliBen, 2010).

In conclusion, youth could benefit greatly if intervention in families and schools gave greater attention to the development of social capital among children (Allan and Catts, 2014; Thorpe et al., 2013). Sports participation may be one such intervention as sports possibly have a unique ability to produce social capital. Sports can produce social capital by providing a structure which increases social interaction between the student, family, and school, hereby, encompassing an arguably comprehensive network of relationships (Broh, 2002). More precisely, the diversity of the network may enhance exposure to education specific cultural knowledge (Broh, 2002; Widdop et al., 2016). As one example, parents in the bleachers may exchange important educational information such as how to take higher level classes (Broh, 2002).

Contributions of the Study

The present study evaluates the effect of high school extracurricular participation on educational attainment. This study creates more methodological strength by hypothesizing

mediators between sports participation and the outcome variable of educational attainment as well as evaluating the relationships between different subgroups (Marsh, 1993). This study is important for practitioners in regards to intervention programs, policy, and budget allocation.

Logically, participation varies in form, substance, and connection to education (Hanks and Eckland, 1976). Previous literature has typically addressed extracurricular participation as a whole or the category of sports participation by itself. The literature is lacking in evaluating the differing outcomes of sport versus non-sport extracurricular participation (Holland and Andre, 1987; Marsh, 1993). Of those limited studies that compared sport and non-sport activities, many found sport participation to have a stronger effect than non-sport participation on various outcome measures such as risk of dropping out of school (McNeal, 1995), education and labor market attainment (Barron, 2000), academic achievement (Broh, 2002), and trust levels (Brown et al., 2014). In contrast, Hanks and Eckland (1976) found sports had little relevance to academic measures while non-sport participation associated positively with academics through the transfer of skills.

Also, the mechanisms explaining the relationship between high school extracurricular participation and educational attainment need further study (Broh, 2002; Dumais, 2009; Marsh, 1993;). The majority of studies identified evaluate only the direct relationship between participation and academic outcomes. This study theorizes that social capital, parental expectations, and academic achievement explain the relationship between sports participation and educational attainment with sports having a unique ability to promote higher levels of each of these three mediators. Lastly, this study disaggregates results by socioeconomic status. As mentioned, the gap in both participation and education achieved due to economic disadvantage needs attention within the literature (Snellman et al, 2015).

Therefore, the study makes three key contributions: 1) comparing the effect of sport versus non-sports activities, 2) evaluating mediators in the relationship between participation and educational attainment, and 3) disaggregating results by socioeconomic status. At present time, there is no identified literature that includes all three of these aspects within the same study.

Conclusion

The present study evaluates the relationship between high school sports participation and educational attainment. This relationship is an important area of study to the school and family institutions as informed decision-making could aid in the life chances of children. Lacking in the literature and addressed through this study are the comparisons of sport and non-sport participation, mediators included in the analysis, and results disaggregated by socioeconomic standing. The study uses a sample drawn from the National Longitudinal Study of Adolescent Health, a school-based nationally representative study of American adolescents in grades 7 to 12 using a longitudinal method of data collection (Harris et al, 2009). In chapters two through six, this paper presents (2) a review of the literature, (3) a theoretical framework, (4) methodological and analytical strategies, (5) results of the analysis, and (6) discussion.

CHAPTER 2

LITERATURE REVIEW

Introduction

The proposed relationships of this study are presented in the following conceptual model (Figure 1). Each direct path and indirect path is discussed in turn throughout the literature review. While recursive relationships are duly considered, a comprehensive review of the literature confirms the directionality indicated in the proposed model. As the reader will notice, social capital is the theoretical anchor modifying not only the outcome variable of educational attainment, but also the other two mediators of parent expectations and academic achievement. The theoretical construct of social capital is further discussed in chapter 3.

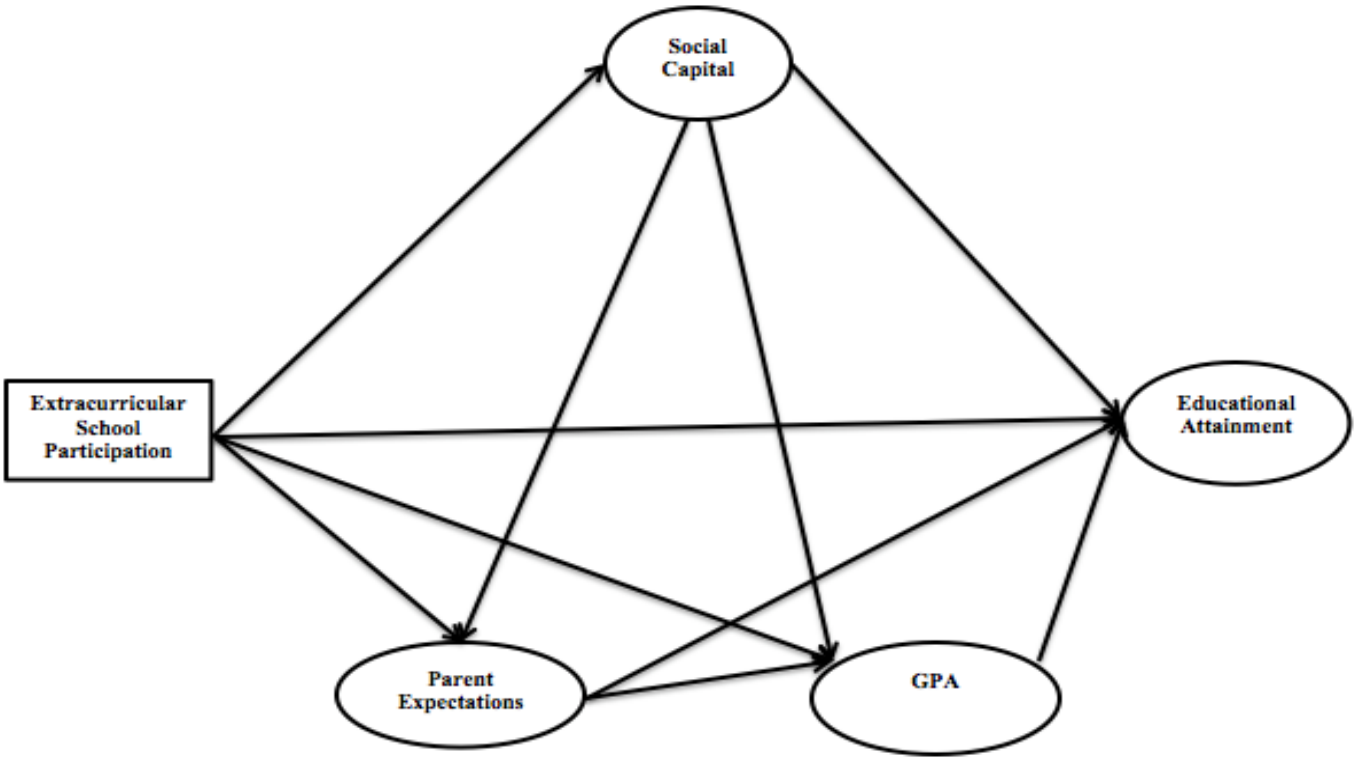

Figure 1. Conceptual model.

Social Capital

Sports and Social Capital

Structural factors powerfully influence the formation of social capital (Weiss, 2012). One such structural factor is extracurricular school activities. After-school activities can move beyond casual connections and build more extensive relationships with adults, increasing the opportunity to shape social capital (Haff et al., 2010; Stanton-Salazar, 2011). Additionally, the structure of extracurricular activities within the school system allows students to connect to college-educated adults (Broh, 2002). The information and norms that are transmitted through these ties potentially allow youth to acquire specific knowledge about college (Dufur et al., 2013).

Importantly, Dufur et al., (2013) found that participation in extracurricular activity was the only indicator in the life of youths that includes both contexts of family and school as enduring investments are required from both sources. Extracurricular activities provide structure, adult supervision, and parental involvement, which are all key components in building social capital (Broh, 2002). This structural phenomenon is crucial to the argument presented here that social capital is a mediator between participation and educational attainment outcomes.

The present study focuses on the distinct extracurricular activity of sport. There is growing research assessing the relationship between sport and social capital (Coalter, 2010; Jarvie, 2004; Widdop et al., 2016). Much of this research has shown sport to build positive social capital (Lawson, 2005; Skinner, Zakus, & Edwards, 2005; Zakus, Skinner, & Edwards, 2008 as cited by Skinner et al., 2008).

Previous research has shown sports to enhance various components of social capital. For example, sports have been shown to be a strong, significant predictor of trust (Brown et al.,

2014). Sports also create a sense of belonging providing an emotional safety net which heightens closeness (Skinner et al., 2008). Sports include a diverse group of people establishing a greater friendship network with more potential for goal-oriented learning (Widdop et al., 2016). The dissemination of information that occurs in this environment contributes to personal development (Skinner et al., 2008). Creating channels that contribute to cognitive and social development is the basis of social capital (Coleman, 1988). Therefore, sports teams may be an institutional supplier of social capital (Dufur et al., 2013).

While any group activity provides access to social capital, competitive high school sports may be unique. The structure of competitive high school sports may have an advantage over other extracurricular activities to garner elevated levels of youth social capital due to: 1) greater number of events, 2) venues of events, 3) popularity and 4) connection to school agents.

Events

High school sports, depending on the sport, have anywhere from 10 to 40 competitions per year. In comparison, other extracurricular activities such as band or drama that are sponsored by the University Interscholastic League, meaning they compete against other schools, usually have only one competition a year. Extracurricular activities such as clubs, yearbook, or student council do not have competitions. While all extracurricular activities foster bonding social capital through extended time together, sports have a greater ability to foster bridging social capital through the number of events. For example, individuals in the band, cheerleading, yearbook, and newspaper all attend sports events, but sports participants do not necessarily attend the others' events.

In addition, both family social capital and school social capital are present and

intertwined through the sports structure. Parents, especially fathers, attend games and help practice sporting skills through adolescence (Weiss, 2012). Students tend to witness this commitment and recognition from their parents (Johnson and Migliaccio, 2009). Opening such avenues to build family social capital is harder when young people are beyond the elementary years, and sports provide such an avenue (Weiss, 2012). Events may furnish more interaction between parents as well. Shared information between parents within bridging social capital can enhance educational success (Kao and Rutherford, 2007). Studies show that families network through their children's activities especially among the middle class (Croll, 2004). Therefore, one can speculate that more events offered through the medium of sports help the bridging social connections of peers, teachers, parents, and community develop slowly and naturally (Broh, 2002; Snyder and Spreitzer, 1990). A balance between bonding and bridging social capital is ideal (Stanton-Salazar, 2011).

School social capital builds into the structure of events as high school interscholastic sports are sponsored completely by school officials. Also, high school athletes are representing the school in the competition. Simply put, sports foster increased attention from coaches, teachers, parents, peers, and community (Snyder and Spreitzer, 1990).

Venues

Certain spaces can enhance the ability to build social capital by helping to create a sense of belonging (Schaefer-McDaniel, 2004). Sense of belonging is an important component in the social capital of young people (Schaefer-McDaniel, 2004). Facilities need to be strategically located, familiar and safe to provide a conducive environment (Skinner et al., 2008). The multiple games played by high school sports teams at the home field or home gym provides such

a space. Sports also incorporate colors, mascots, songs, and other spirited items that enhance the sense of belonging. These physical objects contribute to cultural formation displaying accomplishments and aspirations leading to a greater sense of belonging (Kim and Irwin 2013; Sturner, 1972).

In other words, sense of belonging depends on social spaces (Kim and Irwin 2013). Sense of belonging is a synthesis between the individual and the institution (Johnson et al., 2007). Other high school extracurricular activities would have a hard time creating the same environment since their venues are not as readily used in the same way or with as great of frequency by both participants and spectators throughout the year.

Popularity

Today, sports are the most popular school-sponsored extracurricular activity in the United States (Eide and Ronan, 2001) with over one-half of all high school students involved in a school-sponsored sport (Koebler, 2011). Sports have been enthusiastically supported throughout most of U.S. history (Eccles & Barber, 1999). Activities involving social inclusion must be able to attract and engage to be successful in building social capital (Skinner et. al, 2008). Sports popularity shows its ability to attract and engage more so than other activities and therefore may produce more powerful outcomes (Skinner et al., 2008). Sports have also shown to do better than other organizations in building and sustaining friendships (Widdop et. al, 2016).

Sports competitions include coaches, managers, support staff, volunteers, and spectators (Skinner et al., 2008). The popularity and general structure of sport simply mean large numbers of people are involved (Widdop et al., 2016), which logically provides a greater chance of expanding social networks. In addition, those individuals surrounding sports typically include a

diverse group of people (Skinner et al., 2008; Widdop et al., 2016). Therefore, by providing an event for the larger community to come together, sports may also promote community wide social capital (Bowen & Greene, 2012).

Interestingly, Hanks and Eckland (1976) argued the opposite stating that non-sport participants would not join athletics, but athletes would join other activities because their popularity would be in demand. The present study evaluates and compares sport, non-sport, and mixed activity participation's effect on educational attainment and teases out these identified differences.

Connection to School Agents

Social capital has more ability to promote positive outcomes when the relationships can take on many roles (Stanton-Salazar, 2011). Multiple roles allow for the purposeful transmission of resources while at the same time providing emotional support (Stanton-Salazar, 2011). The title of coach in a school system seems to more readily allow multiple roles (Stanton-Salazar, 2011). Interestingly, Ashtiani and Feliciano (2015) found that a social connection to a coach had leads to more college completion than the connection to a teacher or employer. Thus, the non-familial adult social connection that may be most significantly related to educational attainment is only available in the activity of sport.

In summary, I argue that sports create and foster social capital unintentionally. The structure of network formation matters for the ability to build social capital (Stanton-Salazar, 2011). Hanifan's early work showed informal social gatherings unintentionally lead to social action (Krasny et al., 2015). Similarly, a large number of sports events through the venues and popularity may accidently lead to greater bridging social capital.

Conversely, it is important to note that the sports structure may very well hinder rather than foster social capital (Widdop et al., 2016). Hindrance of social capital may be due to subgroup differences such as gender, race, and socioeconomic status as constructive outcomes in regards to social capital are possibly specific to a certain groups and certain situations (Bankston III and Zhou, 2002).

Social Capital and Educational Attainment

Social capital theory attests that social capital is capital, meaning it a resource carrying an investment with a return (Bankston III and Zhou, 2002; Bourdieu, 1986; Coleman, 1988; Portes, 1998; Widdop et al., 2016). This study will evaluate social capital of high school students and its return of educational attainment outcomes in young adulthood. Lin (1999, p.467) defines attainment as "a process by which individuals mobilize and invest resources for returns in socioeconomic standings." Educational achievements are one of the ultimate measures of attained status having future implications in earning potential as well as good adult health and social inclusion (Lin, 1999; Thorpe et al., 2013).

Social resources are markedly important in influencing attained statuses (Lin, 1999; Sandefur et al., 2006; Thorpe et al., 2013). Bourdieu was interested in social capital's ability to help acquire economic capital while Coleman focused on social capital's ability to help acquire human capital (Skinner et al., 2008). Particularly important to Coleman's (1988) argument is the notion of social capital's capacity to develop human capital relevant to the marketplace. The two sources of social capital in the present study, namely family and school, have a considerable influence on educational attainment. The impact of family and school on educational attainment of children has been of interest to social scientists for some time (Sandefur et al., 2006). Past

research has shown connections between social capital existing both within and outside the family and attainment (Rothon, Goodwin, & Stansfeld, 2012; Sandefur et al., 2006; Zhimin and Yao, 2015).

The current study is conceptualizing social capital as an intersection of family and school. Schools provide an avenue of exchange of educational specific information, such as college requirements (Stanton-Salazar, 2001). Additionally, non-parental adults in schools possessing human capital themselves may have more ability to translate social capital to educational attainment (Staton-Salazar, 2011). In other words, social capital has a better chance of translating to outcomes if the relationships include individuals with experiential knowledge of those particular outcomes (Stanton-Salazar, 2011). One can speculate that the adults in high school buildings inherently value education based on their chosen profession and have an ample amount of time on which to build a trusting relationship that allows a network of educational values. Therefore, school buildings can create a college-going culture (Staton-Salazar, 2011). The college-going culture possibly extends to families through activities in which families, students, and school personnel are all present.

Interestingly and worth noting, extremely high social capital may be more of an advantage to attainment outcomes than human capital (Broh, 2002). There is growing evidence that even in cases where human capital is present, social capital is declining (Coleman & Hoffer, 1987). For instance, children may have parents or teachers with high human capital in the form of education level, yet social capital in the form of the parent-child/teacher-child relationship is lacking (Coleman & Hoffer, 1987). Adult human capital has little effect on educational outcomes of children in the absence of social capital (Dufur et al., 2013).

In other words, possession of human capital is not enough to support educational attainment; human capital must be passed on to children through interaction (Coleman, 1998). In fact, Sandefur et al. (2006) found that social capital can increase the chances of adolescents attending college regardless of their parent's level of education. Therefore, social capital is acting as a "conduit or human capital" (Broh, 2002, p.73).

Parental Expectations

Sport and Parental Expectations

School sponsored extracurricular activities show significant, positive association with expectations (Dumais, 2009). High school sports participation in particular also show an ability to increase educational expectations (Darling et al., 2005; Marsh, H.W. & Kleitman, S., 2002; Otto, L.B. & Alwin, D.F., 1977; Sabo et al., 1993; Spady, 1971). Also, other youth activities such as hanging out with friends have shown to negatively affect expectations (Dumais, 2009). Expectations for this study are defined as a belief in the student's ability to reach educational attainment beyond high school (Gregory and Huang, 2013).

Sport and Parental Expectations via Social Capital

Expectations are transmitted through the information channels supplied by relationships and therefore a crucial component of social capital (Nielsen et al., 2015; Parcel & Bixby, 2016). As mentioned, extracurricular activities provide an excellent avenue for the structure needed to transmit information such as expectations by blending both family and school social capital (Dufur et al., 2013).

Both bonding (family) and bridging (school) capital are important to youth academic

outcomes (Dufur et al., 2013; Gregory and Huang, 2013). The expectations that are transmitted within these two key channels of family and school explain much of social capital's ability to influence youth academic outcomes (Dufur et. al, 2013; Dunham & Wilson, 2007). The blend of family and school social capital offered through extracurricular activities may also include increasing parent's network outside of the family (Parcel & Bixby, 2016). Activity settings offer more opportunity for parents to form relationships with their child's peers, other parents, and school personnel.

Parental expectations are possibly influenced through this network of relationships between family and school by an exchange of pro-academic messages (Dufur et al., 2013). Just as students are engaged in the school culture when involved in activities, so are parents (Dumais, 2009). Sandefur et al. (2006) found that this network of adults can even give insight to practicalities related to educational attainment such as the college enrollment process which in turn leads to a greater chance of college enrollment.

Parental Expectations and Educational Attainment

Expectations are an indirect "cultural transmission" that transforms the capital into educational attainment (Zhimin and Yao, 2015, p.228). Coleman (1988) referred to expectations as normative values and attests that higher normative values placed on education will lead to more educational engagement and future attainment of human capital.

Many studies have looked at expectations ability to affect educational outcomes (Hao and Bonstead-Bruns, 1998; Muller and Ellison, 2001; Stanton-Salazar and Dornbusch, 1995). Most applicable to the present study are the works of Otto and Alwin (1977) and Howell et al. (1984) who found that the educational outcomes of sports participation were mediated by expectations.

Similarly, Hanks (1979) showed mediation of educational encouragement from parents between sports participation and educational outcomes. Even considering key controls such as demographics and family structure, expectations show significance in such educational outcomes (Dufur et al., 2013; Gregory and Huang, 2013).

Parent expectations that are consistent and vocalized translate into greater likelihood to enroll in college and enroll in a four-year college (Sandefur et al., 2006). Academic expectations that go beyond just general feelings and get communicated breed the best results. Therefore, high levels of attention from parent to child are one of the most potent ways in which parents can transmit expectations that translate to human capital (Rothon, Gooodwin, & Stansfeld, 2012). Parents instilling educational expectations are one of the many facets in which social capital influences attainment (Dunham & Wilson, 2007).

However, expectations can exist even outside direct communication as individuals feel the "psychological presence" in the form of not wanting to disappoint those in their social circle (Strohschein and Matthew, 2015). Therefore, expectations may last well beyond the stages of the students living at home and the initial decision to enroll in college (Sandefur et al., 2006). Expectations have even been shown to be a bigger predictor of educational attainment than socioeconomic status or school performance (Gregory and Huang, 2013). In addition, parent expectations strongly correlate to their children's own predictions (Beal & Crockett. 2010).

Expectations also have the capacity to overcome various social structures; therefore, expectations may be a way to protect disadvantaged groups and promote educational attainment (Glick and White, 2004; Gregory and Huang, 2013; Kim and Sheridan, 2011). Conversely, Mahatmya and Smith (2017) found parental expectations showed more influence on educational

attainment in high-income families. Such contextual differences need further study (Mahatmya and Smith, 2017).

Interestingly, most recently, expectations for attending college are at an all-time high, but not translating to educational attainment in the form of college graduation (Mahatmya and Smith, 2017). One explanation for the difference may be generational as few studies have looked at expectations and attainment among the millennial generation (Dumais, 2009). The millennial generation includes those born between 1981 and 2001 (Dumais, 2009). This study will use a data set of millennials and hopefully will add to the discussion.

Academic Achievement

Sports and Academic Achievement

Sports may also have a link to positive educational attainment outcomes through academic achievement. Many researchers have found that participation in sports is positively associated with measures of academic achievement (Fejgin, 1994; Gorry, 2016; Hanson and Kraus, 1998; Otto & Alwin, 1977; Picou, McCarter, & Howell, 1985; Rees and Sabia, 2010; Schafer & Armer, 1968; Snyder & Spreitzer, 1990). For example, the current study measures academic achievement using grade point average. Previous studies have found that extracurricular activities have a positive effect on grade point average (Dumais, 2009).

Additionally, sports participation has been found to extend time in school (Mackin and Walther, 2012); produce higher grades and test scores (Fejgin 1994; Gorry, 2016; Hanson and Kraus, 1998; Lipscomb, 2007; Marsh, 1993; Rees and Sabia, 2010), reduce delinquency (Marsh, 1993); increase positive attitude towards school (Eccles & Barber, 1999); and lower the dropout rate (Spady, 1971; Marsh, 1993).

Sports within the school structure are unique in that they can implement academic requirements for participation in sports in the form of no pass, no play (Bowen and Hit, 2016; Gorry, 2016; Snyder and Spreitzer, 1990). Vidal-Fernandez (2011) found that raising no pass, no play standards leads to significant increases in graduation rates. States did not have legislation with grade requirements for extracurricular participation until 1984 (Vidal-Fernandez, 2011). In the 1970s, different interscholastic associations created a variety of grade requirements for sports participation (Vidal-Fernandez, 2011). Two thoughts permeated the discussion at the time: that sports participants who are marginal students will improve or that they will give up (Vidal-Fernandez, 2011). Results showed improvement. Positive outcomes even extended to graduation rates. Interestingly, graduation rates tended to increase with each increase in eligibility requirements (Vidal-Fernandez, 2011).

Therefore, it can be argued that school-sponsored sports are more capable of producing positive academic achievement than even club sports. Broh (2002) found positive outcomes of school-sponsored sports on academic achievement while club sports showed a negative effect. No pass, no play standards are in place strictly for university interscholastic league competition, and therefore school-sponsored sports are under the most stringent grade requirements of all school activities.

In addition, any athlete wishing to extend sports participation to college must register with the national collegiate athletic association (NCAA) clearinghouse. The clearinghouse is an additional requirement beyond admission to any particular university. The process of the clearinghouse is basically an audit of the high school transcript to assess that high school standards have been accurately met. Only those that participate in sports go through this

additional process to continue the activity beyond high school. Therefore, an orientation of academic importance may permeate the sports culture (Snyder and Spreitzer, 1990).

However, it has been shown that sports participation also leads to negative educational outcomes (Braddock, 1981; Coleman, 1961; Hauser and Lueptow, 1978; Howell, Miracle, & Rees, 1984; Lueptow & Kayser, 1973; Marsh, 1993; Spady, 1971). Recently, Rees and Sabia (2010) found that there were little academic benefits to sports participation in the form of grade point average and classroom habits. Sports may also be reproducing the existing social stratification (Spaaij et al., 2015). One possible explanation is that student-athletes are victims of lower expectations and grade inflation (Hanks and Eckland, 1976). For example, scholarship holders, African Americans, and participants in football and men's basketball show poor academic performance (Kiger and Lorentzen, 1986; Picou et al., 1985; Purdy et al. 1982; Sellers et al.).

Analysis of the most current literature using longitudinal and representative data suggests more evidence for positive effects, with most studies finding student-athletes academically performing better than their peers (Bowen and Hitt, 2016). For example, high school athletes are more likely than other students to graduate high school (Gorry, 2016; Videl-Fernandez, 2011). Graduating high school is logically a precursor to college attendance. Although outside the scope of this dissertation, Gorry (2016) found that team sports have a much stronger association with high school graduation than individual sports. However, when class and race differences are considered, there is no longer a clear positive relationship (Eitle and Eitle, 2002). Therefore, much more research is needed.

Although the present study acknowledges the mediating effect of academic achievement as high school achievement is a precursor to college attendance (Videl-Fernandez, 2011),

credentials or educational degrees are more vital to attainment than academic performance (Dornbusch et al., 1996). In fact, Mackin and Walther (2011) found that only college graduates showed benefits of sports participation. Therefore, more research is needed focusing on sport's influence on educational attainment outcomes rather than academic performance outcomes.

Sport and Academic Achievement via Social Capital and Expectations

Social networks can affect academic achievement positively or impede school success (Kao and Rutherford, 2007). One can speculate that the positive or negative outcomes of social capital are dependent on the expectations communicated within the social ties (Kao and Rutherford, 2007). Therefore, social capital will not create the same returns for all individuals (Kao and Rutherford, 2007). For example, family social capital only showed a relationship to adolescent academic achievement when provided with both parental support and parental challenge (Schneider and Stevenson, 1999). School social capital is similar only providing access to academic achievement if adults combine high expectation with care (Katz, 1999).

Expectations are a way in which family and schools possibly connect by creating a shared value system (Thorpe et al., 2013). Beliefs can turn into concrete practical resources (Gregory and Huang, 2013). For example, expectations may encourage students to take higher-level high school classes, which in turn connect them with college-bound peers and information on the college processes (Gregory and Huang, 2013).

Academic Achievement and Educational Attainment

School success is critical to future educational attainment (Dufur et al., 2013). For one, academic achievement in high school is a precursor for college acceptance. As mentioned, a

college education shows great returns on future earnings. As Vidal-Fernandez (2011, p.2) states "the rate of return for high school graduation is currently at an all-time high in American history because high school graduation is, except in very few cases, a prerequisite for college attendance and the earning premium for college graduation has skyrocketed since the 1970's".

While high school grades and standardized test scores have been shown to be indicators of college success, high school grades seem to be a better predictor than any other factor (Camara & Echternacht, 2000; Hoffman, J. L. & Lowitzki, K.E., 2005; Munro, 1981; Tross et. al, 2000; Westrick et. al, 2015; Zheng et. al, 2002; Zwick & Sklar, 2005). Interestingly, high school grades show to be an even stronger predictor of college success for non-majority students (Hoffman, J. L. & Lowitzki, K.E., 2005). Raikes et al. (2012) even found that high school grades were stronger college success predictors than various institutional level factors such as tuition cost and student-faculty ratio. High school grades also showed significance in predicting college grades more so than socioeconomic status (Westrick et. al, 2015). College grades are in turn the best predictor of retention (Westrick et al., 2015).

In addition, high school grade point average has also been shown to be a significant predictor of college graduation rates (Raikes, Berling, & Davis, 2012; Zwick & Sklar, 2005). High school grades may be such a compelling measure of college performance because grades tend to measure both cognitive and non-cognitive factors (Westrick et al., 2015). For example, high school grades are correlated strongly with measures of academic discipline while standardized test scores show no correlation (Westrick et al., 2015).

Sports and Educational Attainment

Sports may also have a direct link to educational attainment. Conventional wisdom

alludes to sports ability to build work ethic, respect, and perseverance (Coleman, 1961). Sports are also readily believed and shown to be part of a holistic education in the form of character development (Bowen and Hitt, 2016; Pfeifer and CorneliBen, 2010; Rees and Sabia, 2010; Spady, 1971). For example, sports may develop the ability to work in teams (Dumais, 2009), foster self-responsibility (Dumais, 2009), as well as self-confidence and maturity (Fejgin, 1994; Marsh, 1993; Snyder and Spreitzer, 1990). Sports participation may also create a more productive allocation of time (Pfeifer and CorneliBen, 2010). Also worth noting, extracurricular activities may have a direct link with educational attainment due to the tremendous benefits of extracurricular participation aiding in college application acceptance (Dumais, 2009).

Participation in sports demonstrates significant relation to educational attainment even after holding background characteristics constant (Cabane et al., 2016; Howell et al., 1984; Pfeifer and CorneliBen, 2010). Other forms of social activities such as spending time with friends or involvement in community activism have not exhibited the same powerful link (Rothon, Goodwin, & Stansfeld, 2012).

The direct path from participation to educational attainment is evaluated. However, the current study hypothesizes the influence of sports participation on educational attainment is substantially mediated by social capital, GPA, and expectations. However, some direct effects should be anticipated in the model.

Socioeconomic Level

There has been some research on the differing outcomes of sports participation on educational attainment according to social group (Eide and Ronan, 2001; Eitle and Eitle, 2002; Sabo, Meincik, & Vanfossen, 1993). Differing effects of sports participation are possibly a

result of various demographics such as race, gender, or socioeconomic status (Marsh, 1993). Previous studies have typically focused on the role of race and gender (Broh, 2002). For example, Mackin and Walther (2011) found benefits of sports participation on educational attainment for white and African American men, but no significance among Hispanic men. Picou et al. (1985) found positive effects of educational attainment from sports participation only significant for white males. On the other hand, Sabo et al. (1993) found educational attainment benefits from sports participation for white males, white females, and rural Hispanic females. Sports participation also appears to have a distinct impact on the social mobility of women as opposed to men (Videon, 2002).

However, research on sport and educational attainment lacks in focus on participant's socioeconomic level. The limited research available has mostly discovered a positive relationship of sports to attainment among low-income students (Spaaij, 2013). For instance, Gorry (2016) found that sports participation led to better gains in GPA and graduation rates for students with less educated parents and those in low-achieving populations. In addition, research has shown sports participation as a means of increasing educational aspirations among low-income students (Schafer and Armer, 1968; Snyder and Spreitzer, 1990; Spreitzer and Pugh, 1973). Broh (2002) showed a positive relationship of low-income student sports participation on grades and test scores. Interestingly, Hanks (1979) found that sports participation positively altered educational outcomes more for low income white students, but did not find the same effect for minority students. Research needs to expand regarding the impact of sports participation on educational attainment for those students economically disadvantaged (Reiss, 2001).

Wealthy families are much more likely to participate in organized, school activities and the difference in participation rates continues to grow (Croll, 2004; Snellman et al., 2015). As mentioned, school budgets have been under strain and scrutiny leading to cuts in athletic budgets and the introduction of pay to play programs (Barron et al., 2000; Bowen and Hitt, 2016; Snellman et al., 2015). The potential lack of access to activities through such programs is an urgent social concern since participation has implications for adult success (Pruter, 2013; Snellman et. al, 2015).

Students from low-income backgrounds have consistently had poor educational attainment in the United States (Gregory and Huang, 2013; Reardon, 2011; Sandefur et al. 2006). Education is arguably an invaluable payment as college graduates, on average, make over one million more dollars in their lifetimes than non-graduates (Johnson and Acquaviva, 2012). Even despite the shift to non-manual occupations and more opportunity in higher education, the chance of educational success has remained dependent on class background (Croll, 2004).

The present study evaluates social capital as a mediator between sports participation and educational attainment. Similarly, social capital does not carry the same returns across subpopulations (Dunham & Wilson, 2007). Resources such as social capital tend to be available according to class position (Dunham & Wilson, 2007; Portes, 1988). Also, disadvantages of low-income tend to spread available social capital too thin (Haff et al., 2010; Stanton-Salazar, 2011). Since social capital can spur other imperative emotional and economic resources, it is an especially important area in the study of youth (Billett, 2012). Social relationships are a form of access and the lack of these relationships may explain the difference in educational achievements between low and middle income groups (Ashtiani and Feliciano, 2015).

It is unknown whether social capital is more beneficial to low-income students than middle/higher income students (Ashtiani and Feliciano, 2015). Social connections among families and schools have previously shown to bring marginalized students into the culture of education and possibly to intervene in decreasing social inequity (Thorpe et al., 2013). For example, Gregory and Huang (2013) found social capital through expectations held a stronger predicative effect of going to college for those with lower socioeconomic status. Also, Nielsen et al. (2015) found that trust in schools and social relationships formed at schools could be a tremendous intervention for the overall health and well-being of disadvantaged children. DeFilippis (2001) showed social connections as a means of greater attainment among low-income people. However, in contrast, Dunham & Wilson (2007) found social capital is more advantageous to attainment for whites and those higher in the class structure. It is therefore important to remember that family and school social capital also have the tremendous ability to perpetuate the existing social stratification (Dufur et al., 2013).

Disadvantaged youth may be more dependent on structural support to access such social resources (Stanton-Salazar, 2011). Interestingly, interventions to help students overcome the disadvantage that is void of capable social capital usual fail (Stanton-Salazar, 2011). As mentioned, middle-class children participate in extracurricular activities, both sport, and non-sport, at a much higher rate than working-class children (Croll, 2004; Snellman et al., 2015). Lower participation rates may adversely affect working-class family's capability to gain bridging social capital as studies show that working-class families tend to base social networks within kinship groups while middle-class families tend to network through their children's activities (Croll, 2004). Social capital may be one way to improve educational outcomes in marginalized

communities (Rothon, Goodwin, & Stansfeld, 2012). Therefore, it is important to disaggregate social capital of young people research into such sub-populations (Schaefer-McDaniel, 2004).

The Present Study

This dissertation draws on social capital theory as a theoretical framework with the rationale that social capital is a mechanism that explains sports participation and its impact on educational attainment outcomes. The model also demonstrates the theory that social capital influences both parent expectations and high school academic achievement explaining its complete influence on attainment.

Sport may very well promote cohesive relationships fostering social capital (Arai and Pedlar, 2003; Broh, 2002; Cunningham and Beneforti, 2005; Harris, 1994) or sport may perpetuate existing social divisions hindering social capital (Coleman, 1961; Lareau, 2002; Spaaij et al., 2015). More sociological theory needs incorporation into the research of outcomes of extracurricular activities since sociological theory provides insight into the differing outcomes of participation (Broh, 2002). While traditional ideologies have pointed towards sport as a means of greater attainment, the literature remains varied (Reiss, 2001). It is a conversation and topic that needs more study and more evaluation (Eide and Ronan, 2001).

The research on the potential differences in sports participation versus participation in other non-sports extracurricular activities is minimal. Literature focusing on the effects of sports participation has typically ignored participation in other activities (Holland and Andre, 1987; Marsh, 1993). Broh (2002, p.84) explains "it is imperative to test participation in different types of activities simultaneously to isolate the effects of participation in specific activities." Some studies that tested participation in other activities include McNeal (1995) who found that only

sports clubs in comparison to fine arts, academic, and vocational clubs reduced the risk of dropping out. Broh (2002) controlled for participation in other activities and found that sports were the most beneficial of all activities and convincingly contributes to academic achievement. Brown et al. (2014) found that sports were the strongest predictor of trust levels after education in general; although, the biggest differences in trust levels were between participation versus no participation. Barron et al. (2000) found that sports participation contributes to attainment beyond that of other extracurricular activities. Barron et al. (2000) argued that sports provide a unique training ground for skills, especially skills related to operating under pressure.

For present purposes, the effects of participation in sport on educational attainment are evaluated through the mediators of social capital, parent expectations, and high school grades. In contrast to Broh (2002), this study assesses educational attainment in addition to academic performance as outcome variables. In contrast to Barron et al. (2000), this study is grounded in sociological theory adding the mediator of social capital to the relationship between sports and attainment. Following Coleman (1988), the ultimate focus of this study is in regards to social capital's ability to create human capital.

CHAPTER 3

THEORETICAL FRAMEWORK

Social Capital as a Concept and a Construct

The first use of the term social capital can be traced to Lyda Hanifan in the early 1900s (Krasny et al., 2015). Hanifan introduced the notion of social relationships as potential investments (Hanifan, 1916; Krasny et al., 2015). Interestingly, Hanifan showed the example of a school superintendent that got residents more involved in community advocacy indirectly by organizing unrelated social events (Krasny et al., 2015). However, the concept of social capital did not evolve substantially in the literature until the works of Pierre Bourdieu, James Coleman, and Robert Putnam in the 1980s (DeFilippis, 2001; Krasny et al., 2015; Schaefer-McDaniel, 2004; Williams & Durrance, 2008).

Bourdieu (1986) introduced social capital as the production and reproduction of relationships that translate to social power. Therefore, social capital is in fact capital, a resource that produces outcomes (Bourdieu, 1986). Social capital, as the product of social networks, must be both developed and maintained (Schaefer-McDaniel, 2004). In addition, Bourdieu incorporated the inter-related concept of cultural capital as also essential to high-status placement in society (Widdop et al., 2016). In the Bourdieu tradition, social capital is not isolated from other forms of capital such as financial or human because they are all part of the power structure that helps individuals get ahead (Billett, 2012). Therefore, Bourdieu was concerned with membership and the advantages that could be gained through membership (Krasny et al., 2015). For Bourdieu, economic capital precedes other forms of capital, but all capital advantages are embedded together and accessed in accordance with social position (Croll, 2004).

Coleman (1988) extended the concept of social capital as a functional resource.

Coleman's (1988) definition was based on the premise that social capital produces certain ends through relationships between actors within social structures. However, Coleman saw social capital as a distinct resource available to all and conceptually different than other forms of capital such as economic and cultural (Croll, 2004). It is important to note that within Coleman's (1988) definition, the outcomes produced by the resource of social capital are neither positive nor negative, but rather morally neutral. Within the Coleman framework, concepts of trust and reciprocity, expectations, closure, attention and support, information channels, norms and values, and informal social control represent social capital (Coleman, 1988; Schaefer-McDaniel, 2004; Williams & Durrance, 2008). Coleman particularly focused on strong networks within the family and school (Schaefer-McDaniel, 2004). Coleman's conceptualization of social capital is most applicable to educational outcomes (Croll, 2004) and the most used within the sociology of education research (Kao and Rutherford, 2007).

Putnam's (1993) definition of social capital viewed social capital as being possessed by the individual and the group level. The group level of social capital in the form of civil society was a key focus in Putnam's (1993) conceptualization. Putnam's extension of the concept of social capital draws from the early work of Alexis de Tocqueville who linked the essence of social capital to social obligation leading to civic participation and democracy (Castiglione, 2008; Krasny et al., 2015). Civil society through social capital uses reciprocity and trustworthiness to exercise democracy (Putnam, 2000). Social capital as a tangible public possession was in contrast to the ideology of Bourdieu and Coleman who saw social capital fluidly existing within individual relationships (DeFilippis, 2001; Schaefer-McDaniel, 2004).

Putnam (2000) introduced two levels of social capital: bonding and bridging. Bonding capital refers to internal and exclusive communities while bridging capital refers to inclusive

activities consisting of a diverse group of people working towards a common goal (Schaefer-McDaniel, 2004). Bonding social capital is characterized by close ties that mostly consist of family and close peers offering safety and security (Allan and Catts, 2014; Billett, 2012; Putnam, 1993; Thorpe et al., 2013). Bridging social capital is weaker ties that consist of diverse individuals (Allan and Catts, 2014; De Souza Briggs, 1997). Bridging social capital is of particular interest to this study as bridging social capital has shown to possibly be more advantageous to social advancement (Granovetter, 1983; Rothon, Gooodwin, & Stansfeld, 2012; Thorpe et al., 2013;). Bridging social capital's ability to promote new relationships may explain this advantage (Putnam, 2000). Interestingly, bonding social capital may even have the capacity to limit bridging social capital, and therefore both must be addressed in turn (Granovetter, 1983; Prandini, 2014).

Youth Social Capital

All three founding authors describe main components of social capital that include: trustworthiness, social networks, and institutions developing social norms (Billett, 2012; Krasny et al., 2015). Within and beyond the three founding traditions, social capital has been defined and operationalized in a variety of ways in the literature, causing conceptual and methodological confusion (Bankston III and Zhou, 2002; DeFilippis, 2001; Schaefer-McDaniel, 2004; Weiss, 2012). For example, social capital has measured at the individual and community level; social capital has been both a cause and an outcome; and social capital has been viewed as positive and negative, as well as neutral (Krasny et al., 2015; Portes, 1998). Therefore, social capital as a concept has been criticized for its wide variety of conceptualization and operationalization (Krasny et al., 2015).

For this study, social capital is defined as a resource that produces certain ends through relationships between actors within social structures (Coleman, 1988). In this regard, social capital is similar to human and financial capital in that it can exchange for an outcome (Arriaza, 2003). However, it is important to mention that social capital varies somewhat from human and financial capital in that it does not have a limited amount that is gone once consumed (Arriaza, 2003; Coleman, 1988; Croll, 2004; Krasny et al., 2015). In other words, social capital is not a zero-sum, competitive commodity (Croll, 2004). As Wright et al. point out (2001, p. 2), this "makes the concept of social capital distinctively sociological". Social capital is also unique in that it is limited to specific contexts (Coleman, 1988).

Social capital is measured at the individual level for this study and viewed as inherently neutral, capable of producing both positive and negative outcomes. Social capital has the most potential in research conceptualized at the individual level (Portes, 1998; Rothon, Gooodwin, & Stansfeld, 2012). As a mediator in this study, social capital becomes both a cause and result. Social capital as a cause and outcome is a condition that may be inherent in the concept and researchers should, therefore, conceptualize it as such (Krasny et al., 2015).

More specifically, this study evaluates the social capital of high school students. Therefore, pertinent to the discussion is the social capital of young people. Adolescence is an important development stage; social interactions change in adolescence through active social engagement within predominant institutions such as schools (Staton-Salazar, 2011). Schaefer-McDaniel (2004) developed a working concept of youth social capital consisting of three components: 1) social networks, 2) trust and reciprocity, and 3) sense of belonging. Social networks and trust are well developed within the three founding traditions of social capital. These components are also readily expanded upon and used within the adult social capital

literature. However, Schaefer-McDaniel (2004) argues that sense of belonging is an additional crucial component of social capital for young people. All three aspects are therefore inter-related in the formation of youth social capital.

The first component of importance to the capital of young people is social networks (Schaefer-McDaniel, 2004). Social networks are simply defined as the various relationships among people (Coleman & Hoffer, 1987). Social networks are made available through formal or informal membership of groups (Portes, 1998). Social networks are recognized by the actors as a resource and utilized or leveraged for outcomes (Bourdieu, 1986; Morrow, 2001). For children, access to social networks through group membership is forged through dependable relationships with adults (Bankston III and Zhou, 2002).

The second component of trust and reciprocity refers to the existence of accurate information exchanged between group members that are mutually beneficial (Brown et al., 2014; Schaefer-McDaniel, 2004). Trust precedes networks; successful networking is virtually impossible without the trust component (Billett, 2012). Trust can also be separated conceptually into the discussed concepts bonding and bridging social capital. Thick trust is shared among individuals with close ties through bonding social capital and characterized by the highest trust levels. Leaving one's children in the care of another exemplifies thick trust (Billett, 2012). Generalized trust is the general expectations that others, who are not known as well, are honest (Billett, 2012). Generalized trust is seen within bridging social capital. Thick trust can lead to segregation because of a mentality to take care of one's own while generalized trust integrates by taking care of the whole (Allan and Catts, 2014). The third type of trust worth mentioning in this discussion is institutional trust, the general trust in formal institutions (Baum and Ziersch, 2003). In youth social capital, this form of trust lies in the school.

Lastly, the definition of sense of belonging is "an individual feeling of belonging after attaching symbolic meaning to a certain environment" (Schaefer-McDaniel, 2004, p.145). Young people are more likely to engage in social activities if they feel comfortable within the environment (Schaefer-McDaniel, 2004). Sense of belonging has even been found to be the most relevant component of youth social capital in relation to health outcomes (Morgan and Hagland, 2009). Sense of belonging in youth is most closely related to the social capital component of social norms manifested through social institutions. Social norms are defined as values and expectations (Billett, 2012).

Young people must also have agency within social capital (Schaefer-McDaniel, 2004). Social capital as a resource requires the individual's awareness of the resource and the ability to sustain the relationships (Bourdieu, 1986; Morrow, 2001). Youth social capital is individualized consisting of a wide range of social relations that the youth uses for learning opportunities (Raffo and Reeves, 2000). Children identified as young as seven recognize and utilize social networks (Schaefer-McDaniel, 2004). Therefore, the social capital of young people must be conceptualized and operationalized using the young person's perception of their social world (Schaefer-McDonald, 2004).

The current study uses the conceptualization of social capital provided by Schaefer-McDaniel (2004) since it was developed specifically for young people. The three components within the definition of social networks, trust and reciprocity, and sense of belonging are evaluated in the two social spheres that young people most associate with: family and school (Coleman, 1988; Dufur et al., 2013; Novak et al., 2015). As Dufur et al. (2013) points out, academic outcomes are influenced through different social capital contexts. In other words, youth tap into both bonding and bridging social capital. Youth use social capital as both

emotional support and to get ahead (Billett, 2012). Interestingly, youth tend to use bonding social capital the most, but by maximizing their bonding social network can springboard a larger bridging social capital network (Billett, 2012).

Family Social Capital

Coleman (1988) emphasized that social capital was distinct from economic and human capital in that social capital is specific to the context. For Coleman (1998), these contexts were those within the family and those outside the family. Therefore, following the lead of Dufur et al., (2013), family social capital and school social capital will be separated into different constructs.

Social capital is transmitted through generations, and therefore the ties within families are part of the larger social capital construct (Parcel & Bixby, 2016; Weiss, 2012). While both family and school social capitals are important to youth development, family social capital is more influential for educational outcomes (Dufur et al., 2013; Dunham & Wilson, 2007; Parcel & Bixby, 2016). The bond within families is one of the most intimate social ties since it provides the earliest socialization and is also the most enduring (Dufur et al., 2013; Dunham & Wilson, 2007; Strohschein and Matthew, 2015).

Family social capital is multifaceted including but not limited to spending time together, offering moral support, directing behavior, and providing a sense of belonging (Strohschein and Matthew, 2015). Family purposeful investment in academic achievement translates into better performance leading to greater educational attainment in later years (Dufur et al., 2013; Zhimin and Yao, 2015). This investment only can be achieved through maintenance of emotional attachment (Wright et al., 2001). Interestingly, there seems to be a shift in the influence of

family social capital to improving the quality of education as well as the quantity (Zhimin and Yao, 2015).

Family social capital or lack thereof has extensive intergenerational implications (Dufur et al., 2013; Zhimin and Yao, 2015). Values concerning academic performance or even sports participation get passed from parent to child (Jodi et al., 2001). Interestingly, Jodi et al. (2001) found that values relating to academic performance were transmitted via social capital directly, while values relating to sports participation were transmitted indirectly, especially through the father. Family social capital, therefore, extends past the boundary of the family. As Dufur et al., (2015, p.513) explains, "family social capital refers to the investments of parents in children and their children's social structures."

School Social Capital

Adolescents spend much of their time in the school environment, and therefore school-related factors make up a significant part of youth social capital (Nielsen et al., 2015; Strohschein and Matthew, 2015; Weiss, 2012;). School social capital can be defined as investments between students and schools (Dufur et al., 2013). Those investments can translate into educational outcomes. Therefore, school environments can either empower or disenfranchise youth (Staton-Salazar, 2011). While neighborhood social capital is outside the scope of this study, as Morrow (2004) suggests, the school is, in essence, a youth's neighborhood. Additionally, Weiss (2012) found that school environments go beyond the neighborhood in building social capital.

Relationships outside the family such as those at school become increasingly important as children age into adolescence (Dufur et al., 2013; Parcel et al., 2010; Strohschein and Matthew,

2015). Schools allow for relationships between youth and various school officials (Strohschein and Matthew, 2015; Weiss, 2012). School officials as institutional agents become a non-familial adult offering exposure to additional social capital (Staton-Salazar, 2011). School sponsored extracurricular activities logically allow more access and opportunity for these relationships (Allan and Catts, 2014; Dufur et al., 2013;). Therefore, activities beyond the home and regular school day are principally important for the study of youth social capital (Rothon, Gooodwin, & Stansfeld, 2012). Interestingly, Coleman predicted a decline in the family organization creating a need for other institutional structures that support social capital in the pursuit of human capital (Prandini, 2014).

Schools, through socialization, allow social capital to accumulate (Arriaza, 2003). For example, schools become one of the dominant conduits of teaching norms and beliefs (Paccagnella and Sestito, 2014; Stanton-Salazar, 2011). In this regard, the relationships formed within school social capital reach beyond the school (Arriaza, 2003). School-related factors that contribute to transcendent social capital formation include the general academic atmosphere, safety, and tolerance (Weiss, 2012). On the other hand, a lack of these factors may create schools that deny social capital and perpetuate inequalities (Arriaza, 2003). It is important to remember that social capital is not always beneficial (Strohschein and Matthew, 2015).

Therefore, the structure of schools needs to be built in a way to encourage natural and effortless connections across separate groups (Putnam, 2000). The atmosphere of fairness, safety, tolerance, and trust also limit distractions in the form of misbehavior since students are more likely to comply with rules and communicate potential problems (Gottfredson and DiPietro, 2011). This type of school space is in line with bridging social capital. Therefore, school

programs can help move students from bonding to bridging capital through a trusting culture (Thorpe et al., 2013).

School social capital opens vertical relationships as well (Staton-Salazar, 2011). Vertical relationships are those relationships between individuals of varying power levels. These relationships are many times termed linking social capital (Allan and Catts, 2014). Linking capital can be especially powerful in its ability to affect outcomes such as educational attainment (Allan and Catts, 2014; Staton-Salazar, 2011; Woolcock, 1998). In contrast, family social capital may be limited to mostly bonding social capital, and therefore schools are needed as a part of overall youth social capital aiding in educational attainment (Prandini, 2014). Some interesting research conducted with immigrant groups investigates the possession of extremely high family social capital, but lacking school specific social capital (Kao and Rutherford, 2007).

As discussed, schools may be unintentionally supporting stratification through natural reward for those students displaying the norms of the privileged (Stanton-Salazar, 2011). Teaching students how to navigate such institutional forces is one way in which the bridging and linking social capital offered by school structures lead to more positive outcomes (Arriaza, 2003). Also, the institutional agent of schools can transmit resources explicitly connected to educational attainments, such as recommended high school courses (Staton-Salazar, 2011). Therefore, school officials may be capable of "counterstratification" through purposeful social capital (Stanton-Salazar, 2011). As Bourdieu (1998) points out, people are often unaware of such governing social forces.

Research Questions and Hypothesis

The literature review and social capital theoretical framework guide the four basic

research questions posed in this study: (1) What is the effect of extracurricular participation on educational attainment? (2) Do social capital, parental expectations, and academic achievement mediate the effect of extracurricular participation on educational attainment? (3) Does the effect of sports participation differ from other types of participation on educational attainment? (4) Does the effect of extracurricular participation on educational attainment differ for low-income students?

It is hypothesized that: (1) Extracurricular participation will have a positive, significant effect on educational attainment. (2) Social capital, parental expectations, and academic achievement will mediate the effects of extracurricular participation on educational attainment. (3) The effect of sport participation will differ from non-sport participation. (4) The effect of extracurricular participation on educational attainment will differ for low-income students.

To my knowledge, this is the only study to empirically examine the relationships of extracurricular participation (delineated between sport and non-sport activities), social capital, parental expectations, academic achievement, and educational attainment in one model.

CHAPTER 4

METHODS

Data

The present study uses secondary data drawing a sample from the National Longitudinal Study of Adolescent Health (Add Health). Supported by the National Institute of Child Health and Human Development (NICHD) and 23 other federal agencies, the Add Health data examined adolescents in a social context (Harris et al. 2009). The Add Health data are extensive covering various topics of health, relationships, and social environment from the adolescent's perspective (Harris et al. 2009). Add Health is the most comprehensive longitudinal study of adolescents to date (Harris et al. 2009).

Add Health is a longitudinal, school-based, nationally representative study of American adolescents in grades 7 through 12 (Harris et al. 2009). Data were collected from a stratified sample of 80 high schools and 52 middle schools (Harris et al. 2009). The sample was stratified by region, urbanity, school type, ethnic mix, and size. Approximately 200 adolescents were chosen randomly from each school, stratified by grade, sex, and race (Harris et al. 2009). Data were collected from students, parents, and school administrators in four waves from 1994-2008, with Wave V beginning in 2016 (Harris et al. 2009). Questionnaires were administered at school as well as at home with laptops used to help protect confidentiality (Harris et al. 2009).

The Add Health dataset is particularly appropriate for use in the present study because it contains extensive data on extracurricular participation, school and family relationships, expectations, academic performance, educational attainment, and socio-demographic controls. Importantly, the data are gathered through the adolescent's perspective.

Sample

To make full use of the longitudinal design of the Add Health data, this study used data from the panel of students who were present for surveys in both Wave I and Wave IV. A longitudinal design is the most methodologically adequate for the present study (Marsh, 1993). At Wave I, students were in 7th to 12th grade with a complete sample size of 20,745 (Harris et al. 2009). A sample of 15, 701 remained after adjusting for the longitudinal data availability in Wave IV.

The sample was also restricted to those respondents in 9th through 12th grade at the time of Wave I data collection. Sports participation is so popular that the majority of students participate; therefore, the only way to isolate sports participation from other non-sports activities was to restrict the sample to those that have dedicated themselves to be still participating as a high school student. The study is stronger by focusing on those students that continue to pursue the activity in high school, which requires more time and motivation (Cabane et al., 2016). The sample size when limited to students in high school at the time of Wave I was 14, 752 respondents. Due to the complex study design, participants were assigned weights. A sample of 10, 562 adolescents remained after excluding those cases that did not include a sampling weight.

Also, it is essential to have information about school social capital in the present study. Unfortunately, the proxies used for school social capital were taken using the school survey rather than the home survey and eliminated about 2900 cases from the analysis as these respondents did not complete the school survey. Lastly, cases with missing values on any of the variables of the study were eliminated from the analysis using list-wise deletion, leaving a final sample of 5,239 for the present study.

Missing Cases

Since the attrition rate was relatively high in our sample, it was important to compare demographics of the present study sample (N=5239) against the demographics of the total cases (N=10,562) that are available in the Add Health data in 9th through 12th grade. Percent of each category represented as well as means and standard deviations were evaluated. The sample compositions and distributions are similar and do not present any evidence of sample selectivity bias. The correlation matrices of the present sample and available Add Health cases were also compared. The direction, significance, and relative strength were all extremely similar.

The only notable difference was the percentage of participants who are not involved in any extracurricular activities (40.3% of the total cases opposed to 20.1% of the present study's sample). Therefore, I conducted further evaluation of the participants in the none category.

Those in the none category of the total cases were closely compared to those in the none category for the present study. Descriptive statistics show strong similarity. The none category of present study sample was 50.7 % female, 50.7 % white, 15.4% black with 22% holding a Bachelor degree or higher. In comparison, the none category of the total cases includes 50.3 % female, 50.5 % white, 16.2% black with 20% holding a Bachelor degree or higher. In addition, correlations between the samples are of very similar significance in the same and expected directions. For example, the none category in the present study shows a correlation between GPA and Education Level ($r=0.289$, $p<0.01$) as compared to the same correlation using total cases ($r=0.331$, $p<0.01$). Therefore, this is a limitation that is accepted with consideration to the study design and it is concluded that the differences between samples do not indicate study selectivity bias.

Measure of Variables

Table 1

Variables Used in the Study

Educational Attainment	Endogenous, Latent construct measured by the ordinal variable of education level attained.
Extracurricular Participation	Exogenous, Observed nominal variable consisting of categories: sport, non-sport, mixed, and none.
Social Capital	Exogenous, Mediating Latent variable. Measured by two latent constructs: *Family capital* using survey items: feel family pays attention, feel family understands, family has fun together and *School capital* using survey items: feel close to people, feel a part, happy at school, teachers treat students fairly, feel safe.
Parental Expectations	Exogenous, Mediating Latent construct measured by the answer to survey item: how disappointed would your resident parent(s) be if you did not graduate from college.
Academic Achievement	Exogenous, Mediating observed continuous variable using self-reported student's overall grade point average calculated from their grades in: English, history, science and mathematics.
Race	Control: Trichotomous nominal variable consisting of categories: white, black, and other.
Gender	Control: Dichotomous nominal variable consisting of categories: male and female.
Parent Education Level	Control: Observed ordinal variable using the resident parent(s) highest education level attained.
SES	Multiple-group comparison variable operationalized as a nominal variable consisting of categories: low income and middle/high income.

Educational Attainment

The outcome variable of educational attainment was measured using the highest level of education attained recorded in Wave IV. Because Wave IV of the Add Health data occurred when students were aged 25-34, most participants would have attained their highest level of education.

Respondents answered the question: What is the highest level of education that you have achieved to date? Response categories included 1=eighth grade or less, 2=some high school, 3=high school graduate, 4=some vocational/technical training after high school, 5=completed vocational/technical training after high school, 6=some college, 7=completed college; bachelor's degree, 8=some graduate school, 9=completed a master's degree, 10=some graduate training

beyond a master's degree, 11=completed a doctoral degree, 12=some post-baccalaureate professional education, e.g., law school, med school, nurse, 13=completed post-baccalaureate professional education. Responses were recoded as follows: 1=eighth grade or less, 2=more than eighth, less than high school, 3=high school degree, 4=trade or vocational school, 5=some college, 6=college bachelor's degree, 7=post-bachelor's education.

Educational level was treated as a continuous variable within the analysis. With six or seven ordinal categories, results are similar and in many cases more accurate if the variable is treated as continuous using maximum likelihood estimation (Rhemtulla, Brosseau-Liard, and Savalei, 2012). The multiple response levels are also paramount to analysis because with each level of educational attainment comes higher levels of income and occupational prestige (Sandefur et al., 2006).

Extracurricular Participation

The Add Health data offers "check all that apply" for participation in French club, German club, Latin club, Spanish club, book club, computer club, debate team, drama club, future farmers of America, history club, math club, science club, band, cheerleading/dance, choir, orchestra, other, baseball/softball, basketball, field hockey, football, hockey, soccer, swimming, tennis, track, volleyball, wrestling, other sport, newspaper, honor society, student council, and yearbook. All variables on participation were recoded to identify sports participation, non-sport participation, mixed participation (both sport and non-sport), and no participation. The participation variables were dummy-coded using 0=respondent does not belong to the category in question and 1=if the respondent does. The category of sport was used as the reference category.

Mediating Variables

Social Capital

Social capital was measured at the individual level in line with Coleman's (1988) conceptualization of relationships of children between both family and outside the family. Most studies have measured youth social capital through structural components, such as single-parent home, rather than directly through youths themselves (Krasny et al., 2015). It is vital to acknowledge agency within the social capital construct by conceptualizing and operationalizing through the adolescents themselves (Morrow, 1999; Morrow, 2001; Schaefer-McDaniel, 2004; Rothon, Goodwin, & Stansfeld, 2012). Additionally, most previous work has focused on just one indicator of social capital (Dufur et al., 2013; Strohschein and Matthew, 2015). It is important to look at both family and school as both are very impactful on youth outcomes and one may counteract the other (Crosnoe, 2004; Dufur et al., 2015; Parcel & Bixby, 2016). While family and school social capitals are separate constructs, they are inter-related in the discussion of educational outcomes (Dufur et al., 2013).

Family Social Capital

Family social capital includes time and attention as well as monitoring activities (Coleman, 1988). As a source of family support, social capital enhances personality and knowledge development through time spent together (Portes, 1998). Most importantly, family social capital is realized through emotional attachments (Wright et al., 2001).

Therefore, following the lead of various studies, i.e., Haff et al., 2010; Dufur et al., 2015; Weiss, 2012, family social capital was operationalized using the survey items: "How much do you feel that your family pays attention to you?" ; "How much do you feel that people in your

family understand you?"; "How much do you feel that you and your family have fun together?" The response categories are *1= not at all, 2 = very little, 3=somewhat, 4=quite a bit, 5=very much, 6=does not apply.* Responses were recoded to reflect category six as system missing. The Cronbach's alpha score shows good inter-item reliability at .778.

School Social Capital

An environment of "safety and tolerance" is fundamental to the formation of school social capital (Weiss, 2012). Those that have authority in the school, the socializing agents, are a crucial part of the overall school's social culture (Arriaza, 2003). Therefore, the following variables may be used as "proxies" for school social capital (Weiss, 2012).

School social capital was therefore operationalized using the answers to how strongly the respondent agreed with the following statements: "I feel close to people at this school" **;**"I feel like I am part of this school" **;**"I am happy to be at this school" **;**"The teachers at this school treat students fairly" **;**"I feel safe in my school". The response categories included *1= strongly agree, 2 = agree, 3=neutral, 4=disagree, 5=strongly disagree, 6=does not apply*. Response categories were reverse coded to reflect higher scores as positive: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. Category 6 was recoded as missing. The Cronbach's alpha score shows good inter-item reliability at .783.

Parental Expectations

Parental expectations are a critical component in the measure of youth social capital and educational outcomes (Dunham & Wilson, 2007). This study operationalized the expectations variable by the following items on the survey: "How disappointed would he [resident father] be

if you did not graduate from college?"; "How disappointed would she [resident mother] be if you did not graduate from college?"**.** Responses ranged from 1 to 5 with one low and five high. The previous study of Mahatmya and Smith (2017) demonstrated that parental expectations could be measured by using just this one-item proxy of disappointment. As demonstrated by Adedokun and Balschweid (2008), responses for mothers and fathers were summed and averaged to adjust for students with single parents or missing responses.

Academic Achievement

Many researchers have found that participation in sports is positively associated with measures of school success (Fejgin, 1994; Hanson and Kraus, 1998; Otto & Alwin, 1977; Picou, McCarter, & Howell, 1985; Schafer & Armer, 1968; Snyder & Spreitzer, 1990). Analysis of the most current literature suggests that student-athletes do in fact academically perform better than their peers (Bowen and Hitt, 2016). Grades remain an important research variable as an indicator of future successes (Kao and Rutherford, 2007; Wright et al., 2001). Grades are a stronger predictor of college retention and success than standardized test scores, institutional level factors, and socioeconomic status (Raikes et al., 2012; Westrick et al., 2015). Following the lead of Adedokun and Balschweid (2008), academic achievement was measured by each student's overall grade point average calculated from their self-reported most recent grades in English**,** History**,** Science and Mathematics classes. Each participant indicated his or her letter grade in these four subjects. Grades were reverse coded reflecting a typical grading scale (A=4, B=3, C=2, and D or below=1). The Cronbach's alpha score shows good inter-item reliability at .712. Grade point average was then calculated by averaging the grades.

Control Variables

Race

Race is an important control as African American families may view sports as a direct path to attainment and increase selection bias (Mackin and Walther, 2011). Race effects have been found especially in the sports of men's basketball and football (Eitle and Eitle, 2002). For the purposes of this study, race was operationalized as a trichotomous nominal variable with the categories of White, Black, and Other. Respondents were categorized based on their self-reported answer to the check all that apply survey item that included: white, black or African American, American Indian or Native American, Asian or Pacific Islander, and other. In addition, a separate question of: "Are you of Hispanic or Latino origin?" was posed and if answered yes, the respondent was coded as Hispanic and eliminated from any other category (Harris et. al, 2009). A dummy-coded variable for each race was created with 0=respondent does not belong to the racial category in question, 1=if the respondent does. A second step dummy code was then performed to ensure mutually exclusive categories. All those respondents checking more than one racial category were coded into the other category as mixed race in the United States is more likely to be treated as non-white than white (Daniel, 1992). The category of white was used as the reference category.

Gender

Gender is also an important control as positive outcomes of sports participation may very well be greater for females (Dumais, 2009; Troutman & Dufur, 2007). Additionally, females are showing higher rates of educational attainment (Dumais, 2009). Gender was controlled as a dichotomous variable with the value of 0 for female and 1 for male.

Parent Education Level

Parent education level was also included as a critical control since parent education level is an important indicator of student educational attainment (Adedokun and Balschweid, 2008; Ashtiani and Feliciano, 2015; Pfeifer & CorneliBen, 2010; Zhimin and Yao, 2015). Following the lead of Dufer et al. (2015) and Gorry (2016), the higher value of the two parents' education level was used as the measure to adjust for students with single parents and those with missing responses. The variable defined by the higher status of the two parents is referred to as the modified dominance model (Korupp, Ganzeboom, & Van der Lippe, 2002).

Parent education was measured using the answer to the survey questions: "How far in school did he (resident father) go?" and "How far in school did she (resident mother) go?" Response categories included 1=eighth grade or less, 10=never went to school, 11=went to school, but R doesn't know what level, 12=R doesn't know if he went to school, 2=more than eighth grade, but did not graduate from high school, 3=went to business, trade, or vocational school instead of high school, 4= high school graduate, 5=completed GED, 6= went to business, trade, or vocational school after high school, 7=went to college, but did not graduate 8=graduated from a college or university, 9=professional training beyond a four-year college or university. The response categories were recoded as follows: 1=eighth grade or less, 2=more than eighth, less than high school, 3=high school degree or equivalent, 4=trade or vocational school, 5=some college, 6=college bachelor's degree, 7=post-bachelor's education. Responses of "doesn't know" were recoded as system missing.

Multi-Group Comparison Variable

Socioeconomic Level

Socioeconomic level was operationalized as a nominal dichotomous variable using 1=low income and 0= middle/high income. Low-income was designated following the lead of Ashtiani and Feliciano (2015) who classified respondents as low-income if below 185% of the federal poverty line. As Ashtiani and Feliciano (2015, p.8) state, "we use this threshold because households at this level qualify for a number of means-tested benefits, such as food stamps and reduced-price school lunch, and the official US Census poverty line has been criticized as too low (Citro & Michael, 1995)." This measure has been used in multiple studies and adequate for determining economic disadvantage (Ashtiani and Feliciano, 2015).

The federal poverty line was determined by household income in relation to household size (U.S. Census Bureau 1994). Therefore, the survey items used include: "About how much total income, before taxes, did your family receive in 1994? Include your own income, the income of everyone else in your household, and income from welfare, benefits, dividends, and all other sources." from the parent survey. Responses ranged from $0 to $999,000. Also, to create the threshold of low-income, family size was needed. Therefore, the survey item: "How many people live in your household?" from the school survey was used. The federal poverty line in 1994, the time of survey administration, was calculated by using 7,360 for an individual and 2,480 for each additional household member (U.S. Census Bureau 1994). As stated, low-income was operationalized by using 185% of the federal poverty line. Using the reported total income, household size, and the federal poverty line, respondents were separated into categories: low income = 1 and middle/high income = 0.

Analytical Methods

The present study assesses the relationship in which a choice in extracurricular participation in high school results in a change in young adult educational attainment via the mediators of social capital, parental expectations, and academic achievement. Structural Equation Modeling (SEM) was used to examine the theoretical model, incorporating both measurement and structural components. SEM is capable of analyzing a matrix of associations with both latent and observed variables simultaneously giving the researcher more flexibility to study various combinations at the same time (Hoyle & Panter, 1995; Thompson, 2000). While SEM is essentially both factor analysis and linear regression, it is distinct in its ability to estimate multiple, interdependent relationships, represent unobserved concepts with corrected measurement errors, and explain the entire set of relationships in one model (Hair & Black, 2012; Kumar, 2015). As Hoffman & Lowitzki (2005, p. 462) state "SEM is stronger than standard regression techniques including stepwise and hierarchical regression because theory drives the introduction of statistical control into the model and indirect effects may be considered."

Path coefficients representing the effect of exogenous variables on the endogenous variable were estimated. The size of path coefficients represents the degree of which the variable is influenced by that particular factor. As stated, within SEM, variables can be both predictors and criterion within the same model and therefore are more adept at presenting indirect effects (Kline, 2016). The present study proposes several indirect effects including the key latent variable of social capital, making SEM a preferred technique.

In addition, Add Health offers a large sample and SEM is a large sample technique (Kline, 2016). The sample size in the present study is well over the recommended 200 or 20:1

ratio of people to the number of variables (Thompson, 2000). Structural equation modeling (SEM) is causal modeling (Kline, 2016). As a casual modeling technique, SEM uses a covariance matrix rather than a correlation matrix, assuming the variables are unstandardized (Kline, 2016). The goal of SEM is to minimize the difference between the observed covariance matrix and the hypothesized covariance matrix (Kline, 2016).

However, structural equation modeling (SEM) as a causal modeling technique requires certain assumptions to be met, namely: time-ordered variables, continuous variables, and normality (Kline, 2016; Kumar, 2015). The analysis, must, therefore, begin by examining whether SEM assumptions have been met.

As mentioned, the present study uses longitudinal designed data allowing for the temporal order between variables of the study. The exogenous and mediating variables (extracurricular participation, social capital, parental expectations, and academic achievement) were drawn from Wave I of the data. The endogenous variable of educational attainment was taken from Wave IV. The causal direction of variables is therefore strengthened and the threat of spuriousness reduced by the use of two waves of data.

As mentioned, with more than five ordinal categories, variables may be treated as continuous rather than ordinal, producing similar results (Rhemtulla, Brosseau-Liard, and Savalei, 2012). Therefore, all variables within the present study with the exception of participation were treated as continuous meeting the SEM assumption.

Normality was assessed using skew and kurtosis and reported for reference (Kumar, 2015). However, adverse consequences of skewness and kurtosis are lessened with large sample sizes using SEM (Kline, 2016). Also, the maximum likelihood robust (MLR) estimator was used as this estimator is robust to non-normality and non-independence of observations (Bryne, 2012).

Satorra-Bentler scaled statistics were also applied to account for any non-normality (Bryne, 2012). The robust estimate provided with this technique is the most reliable (Bryne, 2012; Hoyle, 2012).

The complex sampling design must also be considered. The computerized analysis was conducted using the R software. Although several computer programs are capable of SEM analysis, including LISREL and MPlus, R was used in the present study since it is possible to use R for all structural stages of analysis including the stratified and clustered nature of the data. The computer aid of SPSS was used before R for construction of variables. Three libraries were used in R including Lavaan, Survey, and Survey Design. Therefore, within the analysis, Lavaan estimated the SEM model and the survey and survey design commands were used to incorporate the cluster, weight, and strata variables provided by Add Health.

Analytical Strategies

The analysis was conducted in four steps: 1) specification and identification, 2) estimation, 3) evaluation and possible modification 4) multi-group model comparison (Kline, 2016). A brief overview of each step is provided below.

Model Specification

The model was specified with measurement models and structural paths supported through theory. The hypothesized model presumes that causes of young adult educational attainment are strongly associated with high school extracurricular participation via social capital, parental expectations, and academic achievement. The model specifies interrelationships utilizing elements from social capital theory. In addition, the participation variable in the model

was categorized into sport, non-sport, and a mixture of sport and non-sport extracurricular participation to allow for comparison. Lastly, the full model was estimated using multiple group analysis for low-income respondents and middle/high-income respondents to see whether the same pattern is observed between them.

Model Identification

Every care was taken to solve all identification problems before moving to estimation (Boomsma, 2000). In SEM, degrees of freedom are calculated based on the number of pieces of information within the model rather than the number of people (Thompson, 2000). Parsimonious models with more degrees of freedom are preferred (Thompson, 2000). Therefore, the present model was designed with support from literature while still maintaining the simplest form (Thompson, 2000). Models are identified when there are enough degrees of freedom to calculate a unique estimate for every parameter in the model (Kline, 2016). The present study has 100 degrees of freedom.

Model Estimation

The measurement model was estimated first followed by the structural model to assure they fit the respective data. Confirmatory factor analysis was performed to examine relations between indicators and latent constructs (Hwang et al., 2016). Model estimation was conducted using MLR, or Maximum Likelihood parameter estimates that are robust to non-normality. Maximum Likelihood is the most commonly used estimator in SEM analysis (Hoyle & Panter, 1995). Maximum Likelihood tells us if the model implied covariance matrix is close enough to the population covariance matrix to indicate a good model fit (Kline, 2016). Maximum Likelihood is most robust with a sample size of several thousand (Boomsma, 2000). The large

sample size available from the Add Health data also helps compensate for the small number of indicators for the latent variables (Boomsma, 2000).

Model Evaluation

Model evaluation was conducted using multiple goodness-of-fit indices as recommended by Hoyle and Panter (1995). The chi-square difference test is one of the most commonly used techniques for examining fit of the model (Kline, 2016). A non-significant statistic indicates good fit since this shows the observed covariance matrix is nearly identical to the model implied covariance matrix (Kline, 2016). However, the chi-square difference test is extremely sensitive to large sample size, and therefore other goodness of fit indices were used (Kline, 2016).

The goodness-of-fit indices used for the present study include: root mean square error of approximation (RMSEA), standardized root mean-square residual (SRMR), and comparative fit index (CFI). The RMSEA shows a good fit with values less than 0.06 (Kline, 2016). It is recommended that the RMSEA be used in conjunction with the upper bound 90% confidence interval, which should be lower than .08 (Bryne, 2012). The RMSEA uses the degrees of freedom and measures the difference between the observed covariance matrix and the model implied covariance matrix (Kline, 2016). The SRMR shows a good model fit with values less than .08 using a summary of the average covariance residuals (Kline, 2016). The CFI shows a good fit at .95 or above and an acceptable fit with values greater than 0.90 (Kline, 2016). The CFI measures the difference between the null model and the model implied (Kline, 2016).

Model Modification

Correlation residuals were interpreted to assess possible model misspecification.

Correlation residuals are acceptable at .10 or under (Kline, 2016). Those residuals over .10 were evaluated as possible reasons for a poorly fitting model (Kline, 2016). Multiple models were evaluated empirically and theoretically to make sound judgments and defend the fit of the model (Thompson, 2000). Model modification must only occur if it is "theoretically and practically defensible" (Thompson, 2000, p.272). As Boomsma (2000, p.474) notes "it is an art to find a fragile balance between dutiful theoretical considerations and statistical interpretations." The present study did not need model modifications.

Model Comparison

Lastly, multiple group analysis in SEM was executed to examine if relations differed for low-income and mid-high income respondents. The models were compared by using the chi-square difference test (Kline, 2016). Regression coefficients were then used to evaluate the difference in the two models.

CHAPTER 5

RESULTS

The present study employed a multi-stage approach to examine the relationships between high school extracurricular participation and young adult educational attainment. Using structural equation modeling, the first approach was to examine the measurement model of social capital. Secondly, the full structural model was evaluated to assess whether social capital, parental expectations and academic achievement mediated the relationship. The third step used multi-group SEM examining whether the associations varied by socioeconomic level.

Descriptive Statistics

Table 2 contains the descriptive statistics for the variables in the analysis. The weighted subsample includes 2805 girls (53.5%) and 2434 boys (46.5%). The majority of the students were White (57.1%) and 18.1% were Black with 24.7% categorized as other. The students were in Grades 9 through 12 at Wave I with a median grade of 10. The adolescents were extremely active with 79% participating in some form of extracurricular activities. The plurality chose to participate in both sport and non-sport activity falling in the mixed category (33.4%). The sample showed relatively high educational attainment with approximately 37.8% of the sample earning a Bachelor Degree or higher at Wave IV.

Initial bivariate descriptive analysis shows that those involved in activities had higher rates of achieving a Bachelor degree or higher (38%) as opposed to 18% of those not involved. Males (34%) were more likely to be involved only in sports than females (9%). However, female students were very likely to participate in sports in addition to a non-sport activity (36% as opposed to 30% of males).

Table 2

*Descriptive Statistics for Variables in the Analysis (*N = *5239 Listwise)*

Variable	Frequency (%)	Mean	Standard Deviation	Range	Skewness	Kurtosis
Gender						
Male	46.5					
Female	53.5					
Race						
White	57.1					
Black	18.1					
Other	24.7					
Parent Education		4.6	1.7	1-7		
8th grade or less	2.9					
Some High School	6.7					
HS Grad or GED	27.3					
Vocational	8.0					
Some College	15.4					
Bachelor Degree	25.2					
Beyond Bachelor	14.5					
Participation						
Sport	20.8					
Non-Sport	25.7					
Mixed	33.4					
None	20.1					
Grade		10.4	1.1	9-12		
9th	26.7					
10th	27.4					
11th	25.9					
12th	19.9					
Income Level						
Low	31.0					
Middle/High	69.0					
Parent Expectations		4.0	1.2	1-5	-1.1	0.3
GPA		2.8	0.7	0-4	-0.3	-0.6
Social Capital Indicators						
Family has fun		3.7	1.0	1-5	-0.4	-0.3
Family pays attention		3.9	0.9	1-5	-0.5	-0.1
Family understands		3.5	1.0	1-5	-0.3	-0.3
Close to people school		3.5	1.1	1-5	-0.6	-0.3
Happy at school		3.6	1.2	1-5	-0.6	-0.4
Safe at school		3.7	1.0	1-5	-0.8	0.2
Feel a part of the school		3.5	1.2	1-5	-0.6	-0.4
Treated fair at school		3.4	1.1	1-5	-0.5	-0.3
Education Attained		5.0	1.3	1-7		
8th grade or less	0.1					
Some high school	3.6					
HS Grad or GED	13.8					
Vocational	9.2					
Some College	35.5					
Bachelor Degree	23.1					
Beyond Bachelor	14.7					

White students were most likely to be involved in sports and non-sports (36% versus 33% Black and 26% Other). In regards to educational attainment, females (41%) were more likely than males (34%) to achieve a Bachelor Degree or higher. There does not appear to be any notable relationship between race and education level attained. Although to be expected, most striking is the number of respondents that earned a bachelor's degree or higher in relationship to parent education of the same level (55%) and GPA of 3.0 or higher (79%).

The descriptive analysis also includes skewness and kurtosis to evaluate normality. Absolute values of less than 2 show acceptable levels of skewness and absolute values of less than 7 show acceptable levels of kurtosis (Chen, 2014; Flora and Curran, 2004; Livingston, 2004). The variables in the analysis had an acceptable levels of skewness with absolute values ranging from -.261 to -1.122; and kurtosis with absolute values ranging from -.048 to .344. As mentioned in the methods section, maximum likelihood with robust estimates was used as the estimation method to further account for any non-normality.

Model Estimation

Structural equation modeling (SEM) takes place in two steps: investigating the hypothesized measurement model first through confirmatory factor analysis and estimating the hypothesized structural model second (Anderson and Gerbing, 1988; Kline, 2016). The measurement model is presented in Figure 2.

Confirmatory factor analysis establishes the reliability of the observed variables in the hypothesized measurement model. In the case of the present study, as mentioned, the latent variables showed good inter-reliability: family social capital ($\alpha = .778$) and school social capital ($\alpha = .783$). In addition, correlations extend the initial support for the theoretical measurement model.

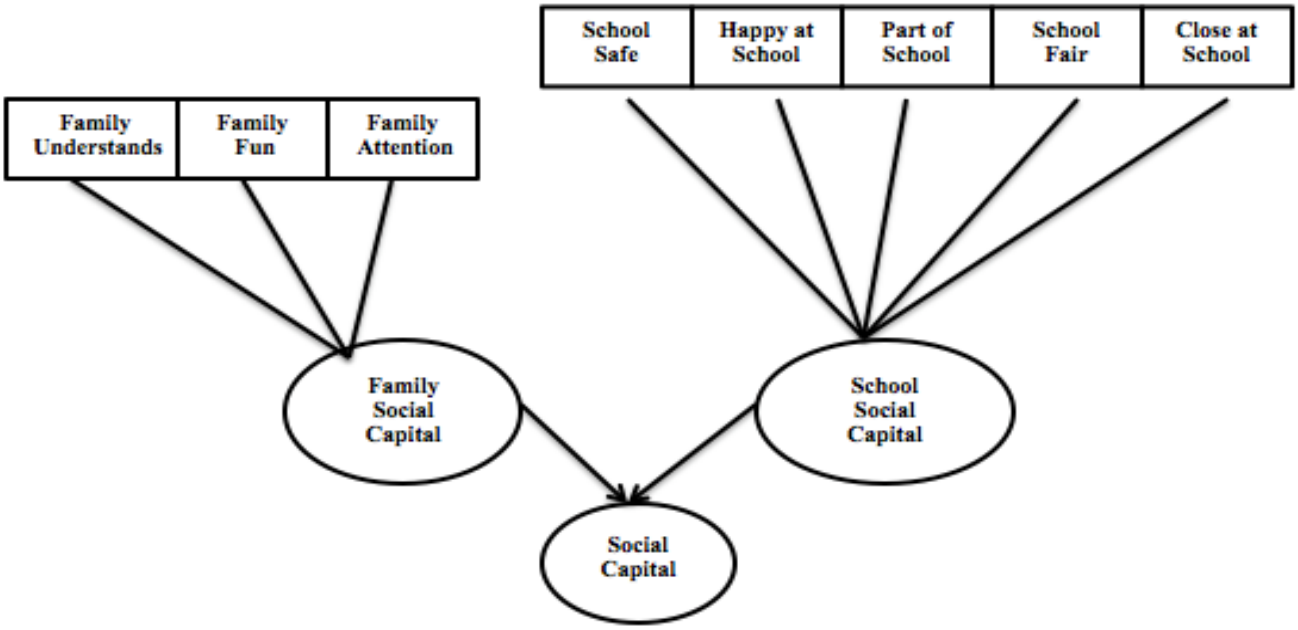

Figure 2. Measurement model.

All correlations of the eight item measures of the social capital construct were significant at the 0.01 level, ranging from 0.123 to 0.603.Social capital is most accurately defined through relationships. This is demonstrated by the strongest correlation of school capital existing between feeling close to people at school and feeling happy at school ($r=0.603$, $p<0.01$). Similarly, family paying attention and family having fun together showed the strongest correlation of family capital ($r=0.592$, $p<0.01$). Correlations do not infer any directionality or causation. However, the strength in correlations provides evidence for further testing.

Through analysis of the measurement model fit, structural equation modeling provides a technique that offers more confidence in the directionality of the proposed model. Factor loadings and fit indices are presented in Table 3. Factor loadings greater than .50 in magnitude demonstrate that the indicators fit the construct (Hwang et al., 2016). All factor loadings were strong ranging from 0.46 to 0.81. Family and school showed somewhat equal importance in the formation of social capital (0.61 and 0.56, respectively). As discussed, SEM fit indices show

how well the model reproduces the observed data. The measurement model also indicated good model fit through fit indices (CFI= 0.961; SRMR=0.034; RMSEA=0.071; RMSEA 90% confidence level= .066 to. 077). With the operationalization of the measurement model supported, analysis can continue with the estimation of the full structural model.

Table 3

*Standardized Factor Loadings for the Confirmatory Factor Analysis (*N = *5239 Listwise)*

Indicator Variable	Factor	Factor Loading
Family Social Capital	Family has fun	0.72
	Family pays attention	0.81
	Family understands	0.68
School Social Capital	Close to people at school	0.68
	Happy at school	0.76
	Safe at school	0.53
	Feel a part of the school	0.81
	Treated fair at school	0.46
Social Capital	Family Social Capital	0.61
	School Social Capital	0.56

Model fit indices: CFI= 0.961; SRMR=0.034; RMSEA=0.071; RMSEA 90% confidence level= .066 to. 077

Following confirmatory factor analysis, the next step was to test the specified structural model. Correlation coefficients were evaluated to provide preliminary support of the overall structural model. Table 4 contains the correlation coefficients; most hypothesized relationships are statistically significant at the 0.05 level. Most notably, academic achievement measured by GPA shows the strongest correlation with the outcome variable of educational level attained ($r=0.441$, $p<0.01$). This is consistent with the literature showing high school grades as best predictor of college success beyond standardized test scores or various structural factors (Camara & Echternacht, 2000; Hoffman, J. L. & Lowitzki, K.E., 2005; Munro, 1981; Westrick et. al, 2015; Zheng et. al, 2002; Zwick & Sklar, 2005). The mediator of parental expectations also shows strong correlation with educational attainment ($r=.224$, $p<0.01$). Additionally, most indicators of social capital show strong correlations with educational attainment. Feeling a part

of the school demonstrated the strongest correlation within this construct (r=.116, p<0.01). Feeling a part of the school may illustrate the ability of a school to create a college-going culture (Staton-Salazar, 2011). Close examination of the correlation matrix supports moving forward with estimation of the structural model.

Table 4

*Standardized Factor Loadings for the Confirmatory Factor Analysis (*N = *5239 Listwise)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Social Capital Indicators											
(1) Family has fun	1.00										
(2) Family pays attention	0.59•	1.00									
(3) Family understands	0.49••	0.55•	1.00								
(4) Close people school	0.18••	0.16••	0.20••	1.00							
(5) Happy at school	0.19••	0.18••	0.20••	0.49••	1.00						
(6) Safe at school	0.12••	0.15••	0.16••	0.35••	0.42••	1.00					
(7) Feel a part of school	0.20••	0.19••	0.21••	0.58••	0.60••	0.40••	1.00				
(8)Treated fair at school	0.15••	0.17••	0.17••	0.25••	0.40••	0.34••	0.33•	1.00			
(9) Parent Expectations	0.07••	0.08••	0.07••	0.06••	0.07••	0.03	0.07••	0.08••	1.00		
(10) GPA	0.11••	0.12••	0.09••	0.10••	0.14••	0.12••	0.16••	0.16••	0.17••	1.00	
(11) Education Level	0.06••	0.10••	0.03•	0.07••	0.11••	0.10••	0.12••	0.09••	0.22••	0.44••	1.00

Pearson correlation coefficients are presented

Note. $+0.10 \leq \rho < 0.05$; • $0.05 \leq \rho < 0.01$;•• $\rho \leq 0.01$ *(Two − Tailed Tests)*

The unstandardized parameter estimates for the full structural model are presented in Figure 3. The extracurricular school participation variable was operationalized as a multi-category factor. The separation of types of participation was imperative to informing the research questions. Therefore, unstandardized estimates allows for interpretations.

With minimal exceptions, the theoretical structural model was supported. Model fit statistics indicate a good fit. Since MLR estimation is used, the chi-square test of model fit is not recommended (Muthen & Muthen, 2007). Also, the chi-square value is sensitive to a large sample size greater than one thousand cases (Kline, 2016). Therefore, it is reported only for reference. The chi-square value of 260.044, *df*=100, p< 0.001 with scaling correction factor of 5.929 showed a significant difference between the observed covariant matrix (independent null

or baseline model) and model-implied covariant matrix (researcher's model). As structural equation modeling aims to closely fit the researcher's conceptual model with the observed baseline model, other fit indices will be used instead to interpret the results (Kline, 2016).

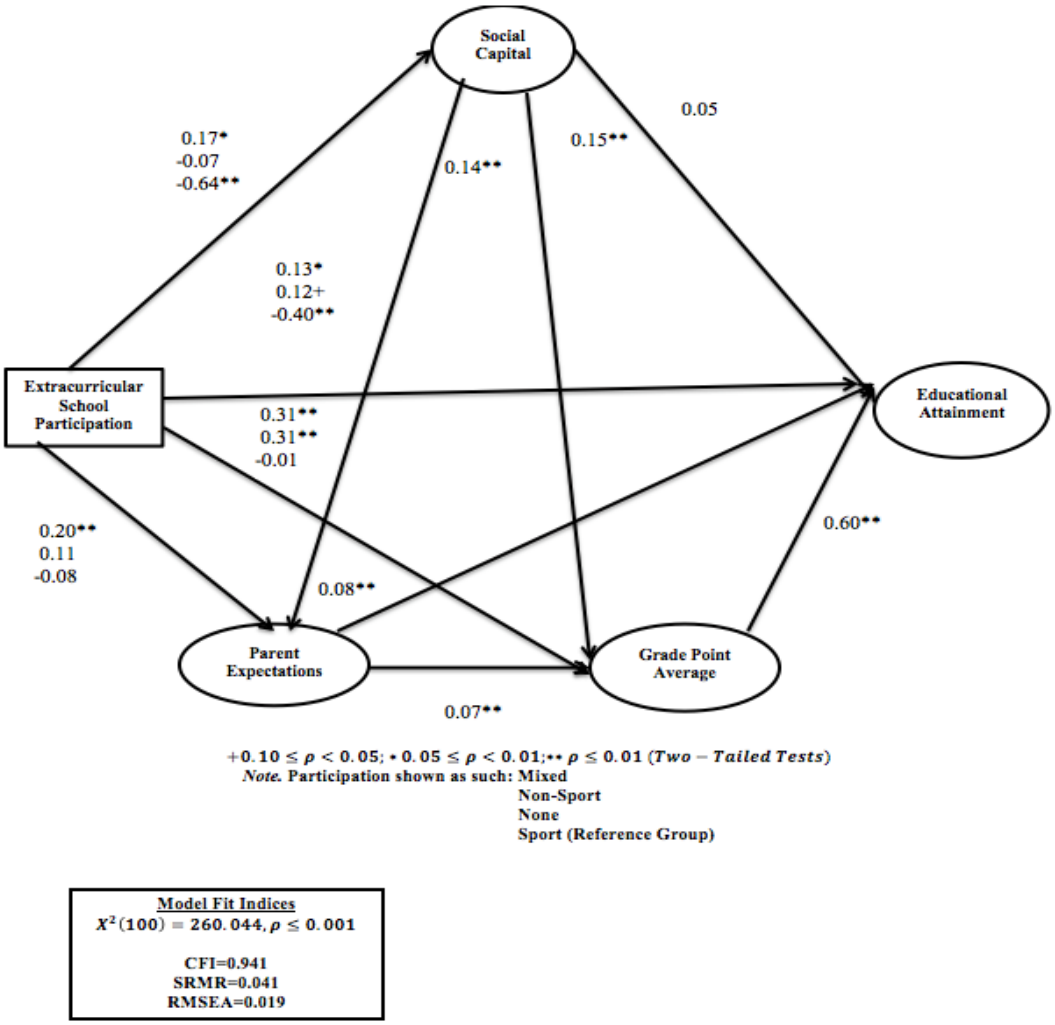

Figure 3. Structural equation model unstandardized coefficient estimates (*N* = 5239 Listwise).

The following fit indices were used for the present study: root mean square error of approximation (RMSEA= 0.017, 90% confidence interval=0.016 to 0.019; robust RMSEA=0.043, 90% confidence interval=0.036 to 0.049); standardized root mean square residual (SRMR=0.035; robust SRMR=0.035); and comparative fit index (CFI=0.910; robust CFI=0.946). The Satorra-Bentler's corrected robust statistics remedy the violation of

distributional assumptions. As mentioned, the following cut-off values are suggested for good fitting models: comparative fit index (CFI) values greater than .95, root mean square error of approximation (RMSEA) values less than .06, and standardized root mean square residuals (SRMR) values less than .08 (Kline, 2016). The model shows good overall fit with the RMSEA less than .06, SRMR less than .08 and the CFI right at the good fit of .95 or over. The residual matrix was also examined to assure a well-specified model (Bentler, 1988).

The residual matrix is presented in Table 5. Normalized residuals greater than .10 in magnitude suggest a specification error in the model (Kline, 2016). All residuals are under the .10 value with the exception of being treated fairly at school and feeling safe at school. This is an acceptable limitation and overall the residuals indicate that there is not misspecification within the model (Kline, 2016).

Table 5

*Residual Matrix for Variables in the Analysis (*N *= 5239 Listwise)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Social Capital Indicators											
(1) Family has fun	0.000										
(2) Family pays attention	0.003	0.000									
(3) Family understands	-0.001	0.002	0.000								
(4) Close people school	0.009	-0.055	0.036	0.000							
(5) Happy at school	0.029	-0.012	0.037	-0.035	0.000						
(6) Safe at school	-0.003	0.011	0.025	-0.023	0.023	0.000					
(7) Feel a part of school	0.001	-0.048	0.033	0.064	-0.002	-0.046	0.000				
(8)Treated fair at school	0.044	0.030	0.072	-0.088	0.062	0.135	-0.062	0.000			
(9) Parent Expectations	0.044	0.046	0.034	-0.015	-0.036	-0.046	-0.007	0.071	0.000		
(10) GPA	0.009	0.025	-0.002	-0.026	-0.014	0.019	-0.010	0.058	0.000	0.000	
(11) Education Level	-0.030	0.055	-0.040	-0.037	-0.026	0.079	-0.008	0.084	0.059	0.040	0.00

Table 6 contains all direct unstandardized coefficient estimates (B) as well as indirect effects (B_{ie}) , total effects, and coefficients of determination (R^2s) located in the lower half of the table. The coefficients of determination range from 0.03 (for parent expectations) to 0.27 (for educational attainment).

Table 6

Structural Equation Model Unstandardized Parameter Estimates (Standard Error); Direct, Indirect, Total Effects, R^2*s (*N = *5239 Listwise)*

			Dependent Variable	
Predictor Variable	Social Capital	Parent Expectations	GPA	Educational Attainment
Direct Effects (B)				
Participation				
Mixed	0.17*	0.20**	0.31**	0.13*
	(0.08)	(0.07)	(0.04)	(0.06)
Non-Sport	-0.07	0.11	0.31**	0.12+
	(0.09)	(0.08)	(0.05)	(0.07)
None	-0.64**	-0.08	-0.01	-0.40**
	(0.09)	(0.09)	(0.05)	(0.07)
Social Capital		0.14**	0.15**	0.05
		(0.04)	(0.02)	(0.04)
Parent Expectations			0.07**	0.08**
			(0.01)	(0.02)
GPA				0.60**
				(0.05)
Gender				-0.15
Race				(0.06)
Black				0.04
				(0.10)
Other				0.13*
				(0.07)
Parent Education				0.19**
				(0.02)
Indirect Effects (B_{ie})				
Participation				
Mixed		0.02+	0.04**	0.23**
		(0.01)	(0.02)	(0.03)
Non-Sport		-0.01	-0.01	0.18**
		(0.01)	(0.02)	(0.04)
None		-0.09**	-0.11**	-0.11**
		(0.03)	(0.02)	(0.04)
Social Capital			0.01**	0.12**
			(0.01)	(0.02)
Parent Expectations				0.04**
				(0.01)
Total Effects				
Participation				
Mixed		0.23**	0.35**	0.36**
		(0.07)	(0.04)	(0.06)
Non-Sport		0.10	0.31**	0.30**
		(0.08)	(0.05)	(0.08)
None		-0.17*	-0.12*	-0.50**
		(0.08)	(0.05)	(0.08)
Social Capital			0.16**	0.16**
				(0.04)
Parent Expectations				0.12**
				(0.03)
R^2	0.08	0.03	0.13	0.27

Model Fit Indices: x^2 (100)=260.044, p<0.001; CFI= 0.941; SRMR=0.041; RMSEA=0.019; RMSEA 90% confidence level= .017 to. 020

Note. $+0.10 \leq \rho < 0.05$; $* \; 0.05 \leq \rho < 0.01$;$** \; \rho \leq 0.01$ $(Two - Tailed\ Tests)$

Some evidence exists for sport participation's unique influence on the model variables. On average, those students involved in sports showed significantly higher levels of social capital than those not involved in any activities (B= -0.64; p<0.001). Sports participation also showed higher levels of social capital than participation in non-sports activity, although this relationship was not significant (B= -0.07; p>0.10). Somewhat unexpectedly, sport participants were significantly less likely to achieve a higher GPA than those in non-sport activities (B=0.31, p<0.001).

Extremely surprising and seemingly contrary to the literature, sports participants, on average, were not significantly more likely to hold a higher GPA those than those involved in nothing (B= -0.01; p>0.10). Sports did not show a significant difference in the ability to predict parent expectations.

An essential result of the study was the evaluation of the mixed category. All else equal, students that participated in both sport and non-sport activities demonstrated significantly higher social capital (B= 0.17; p<0.05), parent expectations (B= 0.20; p<0.001), and GPA (B= 0.31; p<0.001) than those involved in sports only.

Results also support the mediating effects presented in the model. For example, GPA was a significant predictor of education level (B= 0.60; p<0.001). Education level was also significantly predicted by parental expectations (B= 0.08; p<0.001). Surprisingly, education level was not significantly predicted by social capital (B= 0.05; p>0.10).

Understandably, parent education's level significantly impacted adolescent's future educational level attained ($B = 0.19; p < 0.001$). As expected, on average, males were significantly less likely than females to achieve higher levels of education ($B = -.146; p < 0.05$). While outside the scope of this study, an interesting result with regards to race showed, on

average, that minority students were more likely to achieve higher levels of education than White students (Black: B= 0.04, p>0.10; Other: B=0.13, p<0.05).

Indirect and Total Effects

In a model with multiple mediators, the indirect effect of each mediator must be presented as well as the total indirect effect (Adedokun and Balschweid, 2008). Much of the interest in the analysis lies within the indirect effects of social capital. Interestingly, social capital did not have a significant direct effect on educational attainment, yet does have a significant indirect effect (in the expected direction). Social capital significantly impacts both parent expectations (B= 0.14; p<0.001) and GPA (B= 0.15; p<0.001). So, indirectly, via parent expectations and GPA, social capital did significantly predict education level (B_{ie}= 0.12; p< 0.001). Additionally, social capital had a significant total effect on education level (B_T=0.16; p<0.001). Therefore, the thesis that social capital belongs in the model as a mediator is supported. Parent expectations also continue to be supported as a mediator considering indirect and total effects (B_{ie}= 0.04; p< 0.001; B_T=0.12; p<0.001).

Examination of the total effects of the differing types of participation does not provide support for the unique ability of sports. Considering total effects, on average, students involved in strictly non-sport activities were significantly more likely to achieve higher levels of education (B_T= 0.30; p<0.001). While involvement in both sport and non-sport activities also showed significantly higher educational attainment than sports only (B_T= 0.36; p<0.001) on average. Although, from our analysis it is not possible to tell which type activity is driving this result. As expected, sport participants, on average, are significantly more likely to achieve higher levels of educational attainment than no participation (B_T= -0.50; p<0.001). Therefore, the results support

that participation is better than no participation, but all considered students in either non-sport activities or a mixture of sport and non-sport achieve higher levels of educational attainment.

Multiple Group Results

Multiple group structural equation modeling is used to examine whether the family income level of the student has any influence on the relationship between extracurricular participation and future educational level attained. Structural equation modeling (SEM) allows for analyzing two groups simultaneously (Hox and Bechger, 1998). First, the model is fit by placing equality constraints on all parameters across groups establishing a baseline model (Hox and Bechger, 1998; Raines-Eudy, 2000; Tajala, 2012). The baseline model has good model fit (x^2 (240)= 453.934, p<0.001; CFI= 0.937; SRMR=0.042; RMSEA=0.039; RMSEA 90% confidence level= .033 to .045). The baseline model is presented in Table 7.

Table 7

Group Baseline Model Unstandardized Parameter Estimates (Standard Error) and R^2*s (*N = *5239 Listwise)*

	Dependent Variable			
Predictor Variable	Social Capital	Parent Expectations	GPA	Educational Attainment
Participation				
Mixed	0.16•	0.20••	0.31••	0.12+
	(0.08)	(0.07)	(0.03)	(0.06)
Non-Sport	-0.07	0.10	0.32••	0.13+
	(0.08)	(0.07)	(0.04)	(0.08)
None	-0.60••	-0.09	0.01	-0.35••
	(0.08)	(0.09)	(0.05)	(0.09)
R^2	0.08	0.03	0.12	0.25

Model Fit Indices: x^2 (240)= 453.934, p<0.001; CFI= 0.937; SRMR=0.042; RMSEA=0.039; RMSEA 90% confidence level= .033 to .045

Note. $+0.10 \leq \rho < 0.05$; • $0.05 \leq \rho < 0.01$;•• $\rho \leq 0.01$ $(Two-Tailed\ Tests)$

The hypothesis suggests that low income students benefit more greatly from participation than middle and high income students. Therefore, to test the hypothesis, the second step is to fit the comparison model by freeing the regression paths from extracurricular participation to the model variables. The comparison model also showed good model fit at (x^2(228)=432.082, p<0.001; CFI=0.938; SRMR=0.041; RMSEA=0.039; 90% confidence interval=0.034,0.045). The freed unstandardized regression coefficients of the comparison model are presented in Table 8.

Table 8

Group Comparison Model Unstandardized Parameter Estimates (Standard Error) and R^2*s*

	Dependent Variable			
Predictor Variable	Social Capital	Parent Expectations	GPA	Educational Attainment
Low-Income Group *(N=1623, Listwise)*				
Participation				
Mixed	0.13	0.29•	0.37••	-0.17
	(0.18)	(0.12)	(0.07)	(0.10)
Non-Sport	0.07	0.31••	0.31••	-0.01
	(0.14)	(0.12)	(0.09)	(0.11)
None	-0.48••	-0.01	0.09	-0.56••
	(0.15)	(0.16)	(0.08)	(0.12)
R^2	0.06	0.03	0.12	0.23
Middle/High-Income Group *(N=3616, Listwise)*				
Participation				
Mixed	0.18•	0.16•	0.28••	0.21••
	(0.09)	(0.08)	(0.04)	(0.07)
Non-Sport	-0.13	0.04	0.33••	0.16+
	(0.10)	(0.08)	(0.04)	(0.09)
None	-0.70••	-0.07	-0.02	-0.30••
	(0.11)	(0.11)	(0.07)	(0.11)
R^2	0.09	0.03	0.12	0.25

Model Fit Indices: x^2 (228)= 432.082, p<0.001; CFI= 0.938; SRMR=0.041; RMSEA=0.039; RMSEA 90% confidence level= .034 to .045

Note. $+0.10 \leq \rho < 0.05$; $\bullet\ 0.05 \leq \rho < 0.01$;$\bullet\bullet\ \rho \leq 0.01$ $(Two-Tailed\ Tests)$

The next step of multiple group comparison is to compare the fit of the two models using the difference in the chi-square statistic (X^2) (Hox and Bechger, 1998; Kline, 2016; Raines-

Eudy, 2000; Talaja, 2012). If the chi-square difference statistic does not reveal a significant difference between the baseline and comparison models, then it can be concluded that the structural paths from participation for low and middle/high-income groups are identical (Raines-Eudy, 2000; Talaja, 2012). The Satorra-Bentler 2010 scaled chi-square difference test ($X^2 = 40.047, p < 0.001$) revealed a significant difference between the two models. Therefore, it can be concluded that the differences in the freed path estimates for low and middle/high-income students are extremely statistically significant. Additionally, the comparison model has a smaller chi-square value than the baseline model indicating a better fitting model to the data (1944.5 vs. 2003.1). In conclusion, the results show that the comparison model is accepted and equality between groups can be rejected (Raines-Eudy, 2000; Talaja, 2012).

With the confirmation that path estimates from participation vary across income groups, the final step is to compare the freed regression coefficients to determine specific differences. Results show that low-income students and middle/high income students were consistent in extracurricular participation's influence on GPA. As with the full model, surprisingly, sport participants, on average, did not significantly differ from those that did not join any activities in GPA (B=0.09, p>0.10 *low;* B= -0.02, p>0.10 *high*). Although not significant, it may also be interesting to note that among low-income students, the difference in sport participation and no participation's influence on GPA was also in the unexpected direction with non-participants showing higher GPA, on average. Also consistent, students involved in non-sport activities only (B=0.31, p<0.01 *low;* B=-0.33, p<0.01 *high*) as well as a combination of non-sport and sport (B=0.37, p<0.01 *low;* B=-0.28, p<0.01 *high*) were significantly more likely, on average, to have a higher GPA.

Similarly, sport participation does not show unique ability to increase parent expectations in either group. In fact, for low-income students, participants in non-sport ($B=0.31$, $p<0.01$) and mixed ($B=0.29$, $p<0.05$) were significantly more likely to have higher parent expectations than sport participants.

Sport participation does seem to be similar or better at gathering social capital than other activities in the group model. However, the importance of sport participation for levels of social capital did not seem to be drastically different among income groups. For students of low-income, sports participants showed significantly better levels of social capital ($B= -0.48$; $p<0.01$) on average than students who did not participate in any activity. Also, there does not exist a significant difference between sport and non-sport ($B=0.07$; $p>0.10$) or sport and mixed ($B=0.13$; $p>0.10$) in relationship to social capital for low-income students. Middle/high income students even showed sports as more powerful than non-sports in prediction of social capital on average, although not significant ($B=-0.13$, $p>0.10$). In addition, mixed participation had a significantly greater effect on social capital than sport for this group on average ($B=0.18$; $p<0.05$). Considering both effects for the middle/high sample, it can be speculated that sport participation is driving the mixed influence on social capital.

Interestingly, the path that lends the most support to the hypothesis that low-income students benefit more greatly from sports is the direct path from participation to educational attainment. For low-income students, on average, sports led to higher levels of educational attainment than non-sports ($B=-0.01$, $p<0.10$) or even mixed ($B=-0.17$, $p>0.10$). In contrast, both non-sport ($B=0.16$, $p<0.10$) and mixed participation ($B=0.21$, $p<0.01$) led to significantly higher levels of education, on average, than only participation in sports for the middle/high income group.

CHAPTER 6

DISCUSSION

This chapter presents a discussion of the findings, limitations of the study, and recommendations for future research. Overall, the purpose of this study was to investigate the link between extracurricular participation in high school and educational attainment in young adulthood. Included in the analysis were different types of participation as well as mediators in the relationship. Additionally, the relationship was assessed to determine possible differences for students disadvantaged by low-income. Implications for informing families and schools to improve life chances of young people are discussed.

Discussion of Findings

Educational level attained is a crucial determinant of health and life satisfaction measures in adulthood (DiPrete & Buchmann, 2006; Thorpe et al., 2013). Additionally, a college degree has tremendous implications for future earnings, another marker of adult success (Johnson and Acquaviva, 2012). Therefore, in the interest of youth, more research needs to be conducted that helps evaluate those efforts that schools and families can employ that may facilitate future educational attainment. Research of this sort comes at a valuable time as retention in college and college completion rates are concerns, especially among low-income students (Mahatmya and Smith, 2017; Snellman et al., 2015).

The purpose of the current study was to identify through structural equation modeling (SEM) the mediators between extracurricular participation to educational attainment while also assessing differences in the type of participation and differences for low-income students. Studying factors that contribute to educational attainment through participation may assist school

personnel as well as parents in the formation of intervention strategies aimed at facilitating the development of greater life chances. Currently, there has not been any study identified that assesses this relationship using said mediators while comparing types of participation as well as comparing groups of socioeconomic status.

This study provides empirical support that extracurricular participation contributes positively and significantly to the educational level achieved, both directly and indirectly. As expected, compared to no involvement in extracurricular activity, participation garnered higher levels of social capital, parent expectations, and academic achievement. In addition, all three proposed mediators did positively and significantly affect educational level achieved. Taken as a whole, the hypothesis is supported that extracurricular participation positively alters educational attainment via the mediators.

Rooted in social capital theory, the present study was particularly interested in participation's capacity to acquire social capital that translates to higher education attainment. Consistent with previous research, extracurricular activities increase the opportunity to build social capital (Broh, 2002; Dufur et al., 2013; Haff et al., 2010; Stanton-Salazar, 2011). However, interestingly and contrary to expectations, social capital did not have a significant effect on education level although it was in the hypothesized direction. However, social capital showed a positive, significant effect on education level indirectly through parent expectations and GPA.

The literature confirms that social capital only translates to educational attainment if the resources garnered are capable, specific, and purposeful (Stanton-Salazar, 2011). Social capital's strength in influencing education level only through parent expectations and GPA in this study makes sense in this regard. Therefore, families and schools can improve life chances

of students by possibly developing strategies that adapt the social capital earned through participation into higher academic expectations and increased knowledge of academic achievement. Information channels supply information, which transmits to expectations especially in the influence of youth educational outcomes (Dufur et al., 2013; Dunham & Wilson, 2007; Nielsen et al., 2015; Parcel & Bixby, 2016). Therefore, school culture and pro-academic messages shared by youth, parents, and school personnel through social capital are passed on through expectations (Dufur et al., 2013; Dumais, 2009; Sandefur et al., 2006). Institutional agents, such as families and schools, become empowerment agents when they mobilize their capital in this way to benefit youth (Stanton-Salazar, 2011).

It was theorized that the social capital gained through school activities would translate to educational attainment because of exposure to adults with high human capital (Stanton-Salazar, 2011). One might speculate that the indicators used in the current study may very well measure social capital in general, but not measure the mobilization of social capital that produces later educational attainment. The findings support that social capital may be an under-researched gain of participation with more measures and differentiation needed in the mobilization of social capital rather than just social capital itself. A variety of activities, such as sport and non-sport, may provide this mobilization explaining the powerful results demonstrated by the mixed category to influence the study variables.

Direct, indirect, and total effects of the mediators parent expectations and GPA confirm the intervening influence of these two variables in the model. Expectations ability to positively influence future education attainment as well as mediate the relationship between participation and educational attainment has also been shown in previous research (Coleman, 1988; Dunham & Wilson, 2007, Gregory & Huang, 2013; Howell et al., 1984; Otto & Alwin, 1977; Zhimin and

Yao, 2015). Academic achievement in relationship to participation and future educational attainment has been well researched. Extracurricular participation has been consistently shown to positively relate to educational outcomes and this study is no exception. Additionally, high school GPA as an indicator of college success and possibly the best indicator of college success shown in earlier works is confirmed in this study with GPA showing a strong effect on education level (Camara & Echternacht, 2000; Hoffman, J. L. & Lowitzki, K.E., 2005; Munro, 1981; Raikes et al., 2012; Tross et. al, 2000; Westrick et. al, 2015; Zheng et. al, 2002; Zwick & Sklar, 2005).

In summary, the first two hypotheses are supported by the results. Extracurricular participation was positively and significantly associated with educational attainment while being mediated by social capital, parent expectations, and GPA. Social capital, however, must translate to expectations of academic achievement in order to influence educational attainment.

An additional aim of the present study was to determine if a particular type of participation was more effective in aiding future educational attainment. More specifically, extracurricular participation was separated into sports activities versus non-sport activities. There was also a category of mixed for those students that participated in both sport and non-sport. One of the main contributions of this study was the comparison of differing types of extracurricular participation, which is rare in the literature (Holland and Andre, 1987; Marsh, 1993). The wide variety of results in previous studies may be due to this oversight.

Sports participation was hypothesized to have a stronger effect than non-sport participation on educational attainment via the mediators. The results were inconclusive. Total effects revealed that the non-sport categories as well as the mixture category were both significantly more likely, on average, to achieve higher levels of education than the sport only

category. Therefore, the hypothesis of sport's unique ability among extracurricular activities to improve future educational attainment may have been partially supported since students in sports in addition to non-sport activity also were significantly more likely to achieve higher levels of education, on average, than those students that focused on sports only. However, most logically, considering the comparison of those students that were in sport only compared to non-sport only, the non-sport activities were most likely driving these results. As mentioned, an alternate explanation is that the variety of activities i.e. the mixed category is allowing social capital to function in future successes.

Future study is needed to tease out whether it is purely non-sport activities or the true combination of sport and non-sport activities that have the most impact on future educational attainment. Studies abound with sports ability to positively impact educational outcomes (Fejgin, 1994; Gorry, 2016; Hanson and Kraus, 1998; Otto & Alwin, 1977; Picou, McCarter, & Howell, 1985; Rees and Sabia, 2010; Schafer & Armer, 1968; Snyder & Spreitzer, 1990; Videl-Fernandez, 2011). Sports have also been shown to negatively influence educational outcomes (Coleman, 1961; Hauser and Lueptow, 1978; Howell, Miracle, & Rees, 1984; Lueptow & Kayser, 1973; Marsh, 1993; Spady, 1971). However, since more of the recent and more methodologically representative literature pointed to the positive (Bowen and Hitt, 2016), the current study predicted a positive impact of sports. This study did not help with the lack of clarity by adding comparison of differing activities as hoped. In contrast to previous studies that offered comparison of sports to other activities (Barron et. al, 2000; Broh, 2002), this study found that other activities were more powerful than sports in their impact on educational attainment.

However, as mentioned, mixed participants also showed significantly more likelihood to achieve higher levels of education, on average, than those in only sports. Additionally, the direct path to social capital shows that non-sport activities were not significantly better than sports in acquiring social capital while mixed participation was significantly better. Therefore, an alternative explanation may be that students involved in both types of activities benefit from the various advantages of sport's influence on social capital while also reaping the found benefits of non-sport participation on GPA.

The findings are more in line with that of Hanks and Eckland (1976) who determined sports participants would be more likely to join other activities than the reverse of non-sport participants joining sports. Additionally, sports participation may be detrimental to social capital for certain students or particular situations (Bankston III and Zhou, 2002; Widdop et. al, 2016). For instance, Spady (1971) found that students who participated in both sports and non-sports activities had high expectations and higher attainment. Yet, those students who only participated in sports and over-perceived their social status had low attainment (Spady, 1971).

A more detailed and disaggregated approach to participation's influence on GPA precisely is warranted as this study, in line with previous research, found high school GPA to be particularly strong in predicting future educational attainment (Camara & Echternacht, 2000; Hoffman, J. L. & Lowitzki, K.E., 2005; Munro, 1981; Westrick et. al, 2015; Zheng et. al, 2002; Zwick & Sklar, 2005).

Therefore, in summarizing all the results pertinent to types of participation, sports participation is only a stronger predictor of educational attainment when combined with a non-sport activity. If only in one type of activity, non-sport shows a stronger result. The inclusion of the mixed category may explain the current literature suggesting more evidence towards student-

athletes performing better than their peers (Bowen and Hitt, 2016; Shifrer et al., 2015). However, this study indicates more research is needed evaluating more explicit categorization of participation.

Lastly, the current study evaluated the proposed model with respect to the socioeconomic status of the participant. In other words, the relationships within the model were assessed to determine if the benefits to extracurricular participation differed among the interest groups of low-income adolescents and middle/high income adolescents. It was hypothesized that the participation effects in the model would be stronger for low-income students than middle/high income students. Overall, the hypothesis was not supported through the mediators. However, the direct path to education level supported the notion that sport participation is more beneficial to low-income students. As evidenced in previous literature, sports may impact education level directly due to various character and skill developments (Bowen and Hitt, 2016; Dumais, 2009; Feigin, 1994; Marsh, 1993; Pfeifer and CorneliBen, 2010; Rees and Sabia, 2010; Spady, 1971). Assessing this result in more detail would be an extremely interesting area of future study.

From a practical standpoint, the overall results implicate that high school students can improve their chances of educational attainment by joining both a sport and non-sport extracurricular activity. Therefore, those stakeholders in adolescent's lives can serve students best by offering and supporting access to a wide variety of extracurricular activities. Additionally, family and school personnel need to be aware of emphasizing relationship formation and academic "talk" as a element of the activity.

Limitations of the Study

Several limitations of the study warrant mention. The present investigation is subject to

the strengths and limitations of the Add Health data. The data set is limited in many regards. The data did not allow for assessing whether participation was a part of the school or outside the school. This is a crucial difference within our argument. For example, the school institution can provide access to adults with high human capital and academic requirements of participation. One may speculate that the design of the survey naturally steers towards school sports and school activities, but it is not a certainty. This distinction would enhance the study as previous research found school sports positively impacting academics while outside sports participation showed negative effects (Broh, 2002). Additionally, level of participation as far as varsity, junior varsity, or even leadership status was not included in the survey. These variables could add compelling richness to the study based on the argument that outcomes could be more substantial with greater levels of participation.

Conceptualization and operationalization of variables could also be a limitation when using secondary data. Every care was taken to assure validity and reliability; however, the data was obviously not gathered with this study's particular research questions in mind. For instance, the path from social capital to the educational level attained may be stronger if social capital was measured by survey questions that were explicitly geared towards the social capital in the context of higher education.

Additionally, the Add Health data were self-reported. While the current study did not include any extremely sensitive information, sensitivity is perhaps relative, and self-reported measures should always be listed as a possible limitation. Also, as previously discussed, attrition of sample size, due mostly to a lack of a weight variable and completion of the in-school questionnaire, is an additional possible limitation in interpreting and generalizing the results.

Another limitation worth mentioning is the concept of causality. While structural equation modeling (SEM) is a casual analysis technique and SEM assumptions were met, "analysis by itself is rarely sufficient to establish causation" (Kline, 2016, p. 122). Also, a strong causal assumption is determined by the direct effect from the independent variable and outcome being exactly zero (Kline, 2016). The results showed a significant direct path from participation to the educational level attained. Therefore, at best, the current study shows weak causal assumption, but more accurately, only covariation of variables can be assumed.

Implications for Future Research

The purpose of the current study was to identify through structural equation modeling (SEM) the mediators in the relationship between extracurricular participation in high school to educational attainment in young adulthood while also assessing differences in the type of participation and income levels. Studying factors that contribute to educational attainment through participation may assist school personnel as well as parents in the formation of intervention strategies aimed at facilitating the development of greater life chances of adolescents.

Additional research is needed with even more disaggregation of high school participation type. Extracurricular participation could be broken down to a multitude of categories such as fine arts, musical arts, school service, academic clubs, team sports, individual sports, etc. Evaluating such distinct types of participation on outcomes would add tremendous depth to the knowledge of the field. This knowledge would help contribute to the fundamental importance of the current study to inform families and schools in how best to help students.

Another area of future research would be to explore more possible hidden factors influencing the relationship between participation and educational outcomes. One possible hidden factor that would be an intriguing future research area is the factor of the sports scholarship culture. The sports scholarship culture is more or less described commonly as the goal of earning a college sports scholarship as central to all motivations for participating. The sports scholarship culture can even be exaggerated to include a belief that sports are the absolute best path to achieving future educational attainment (Johnson and Migliaccio, 2009). This sports scholarship culture continues to permeate high school athletics even though only about 2% of high school athletes earn college sports scholarships, most of which are only partially covered (O'Shaughnessy, 2012).

Therefore, a possible future research topic to explore is whether the mediating factor of social capital, garnered through the sports scholarship culture, affects educational attainment positively or negatively depending on the individual's perception of the culture. Texas, in particular, has a substantial sports scholarship culture because it is one of the most heavily recruited states along with California and Florida (Pitts and Rezek, 2012). Interestingly, scholarship offers are increasingly given to younger and younger athletes, some even as early as eighth grade (Yen, 2011).

The sports scholarship culture possibly creates an overemphasis on sports in the lives of children. The overemphasis leads to a specialization in athletics resulting in all time and energy being placed towards sports (Johnson and Migliaccio, 2009). Other endeavors such as academic and personal growth possibly suffer as a result (Johnson and Migliaccio, 2009). This may explain the study results in that the mixed participation category consistently showed better outcomes on study variables than the sports category. Therefore, these students are possibly reaping the

benefits of sports participation while at that same time not overemphasizing sports (Spady, 1971). A possible future research question then becomes: Does the scholarship culture create an overemphasis on sports?

Some interesting research in this area has focused on the black male athlete. For instance, Edwards (1988) showed how participation in sports is overemphasized in the black community as a path of social mobility taking energies away from more fruitful endeavors. Studies show that this socialization into sports is motivated by future educational attainment (Edwards, 1988; Harris, 1994; Johnson and Migliaccio, 2009; Oliver, 1980). Additionally, the stereotype is perpetuated by families, communities, and the media (Coakley, 1998; Hall, 2001; Johnson and Migliaccio, 2009). This phenomenon has been referred to as the triple tragedy in the sense that black adolescents are pursuing an extremely unlikely goal, personal and cultural growth is stunted, and other occupational talents go unrealized (Beamon, 2008; Edwards, 1988;).

Closely related is the research of the revenue sports, football and men's basketball. Football and men's basketball are appropriately named the revenue sports because of the exorbitant amount of revenue they bring to universities. The top football teams can gross over $50 million yearly (Pitts and Rezek, 2012). It is important to mention that football and men's basketball are also the two male sports that offer full scholarships. These two sports traditionally have shown negative academic consequences within the literature (Eitle and Eitle, 2002). Therefore, sports as an avenue to educational attainment in these two sports may manifest as an overemphasis on sports leading to negative academic outcomes. Exploring the differences in revenue versus non-revenue sports within the model would be another interesting way to extend the research.

Qualitative research could also be an exciting area of extension to the current research project by contributing more of an in-depth understanding into the quantitative results. Qualitative interviews could tap into the context to which social capital is rooted. For example, interview questions could detail the general academic information learned through those connections formed through extracurricular participation. More in-depth questions could also explore the sports scholarship culture and evaluate its potential to enhance or stifle future educational attainment.

Conclusion

Sports participation and its link to academics has possibly been the most researched topic within the field of sociology of sport (Snyder and Sprietzer, 1990). Sport is a pervasive aspect of society which inevitably includes children. In the United States, in particular, sports are an integral part of the public school system (Bowen and Hitt, 2016). Sports are also the most popular extracurricular activity chosen among high school students (Eide and Ronan, 2001; Koebler, 2011). Therefore, sport participation and its link to the academic mission warrants meaningful study.

With an abundance of research, sports participation's relationship with academics includes multiple aspects on the topic with a wide range of methods and of course varying findings. Those findings that deemed sports participation as a positive influence towards academic endeavors argue six possible explanations including more interest in school in general, eligibility requirements spurring greater effort, increased self-esteem, social connections, elite status, and motivation of playing in college (Snyder and Sprietzer, 1990).

The current study theorized these various explanations through the lens of social capital theory. However, contrary to expectations, social capital did not significantly impact education level directly. Therefore, the study concludes that high school extracurricular participation is crucial to the development of social capital; however, social capital functions through parent expectations and GPA as a means of enhancing future education levels.

Another interesting conclusion of the present study is that mixed participation (sport and non-sport activities) produced much better educational results than sports alone. This result very well may be because mixed participants are reaping the various benefits of sports while at the same time not putting an overemphasis on sports. Thoughts for future research would be to investigate this finding in a more in-depth manner. Some speculation is that the motivation of earning a college sport scholarship clouds the other benefits sports may provide and leads to such an overemphasis.

Lastly, this study applied the hypothesized model to income level groups. Results were somewhat inconclusive with non-sport and mixed participation showing a greater influence on GPA than sport in both groups. However, sports possibly have a better influence than other participation on social capital in the both groups. The most important difference between groups was the greater importance of sport participation directly on education level for low-income students. Sports must be provided low-income students something beyond the proposed mediators that results in higher levels of education, on average. This conclusion needs further enhanced study as well.

In summary, the overall assessment of the models is that sports are positively contributing to educational attainment especially with regards to social capital and its ability to influence GPA. Sport shows a possible unique advantage in acquiring social capital when

compared to non-sport activity. However, sports are not directly or positively influencing GPA comparatively, which happens to be a significant predictor of education level attained. Total effects definitely point towards the better ability of mixed participation over sports to lead to positive educational results. Therefore, in general, parents and school officials should encourage students to participate in a mixture of sport and non-sport activities. In addition, strategies that parlay social capital within activities into educational attainment need to be developed.

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