UNIVERSITY OF WISCONSIN-LA CROSSE
Graduate Studies

PERCEPTIONS OF PARENTS OF HIGH SCHOOL AGED STUDENTS
WITH DOWN SYNDROME REGARDING SCHOOL-SPONSORED
EXTRACURRICULAR SPORT PROGRAMS

A Manuscript Style Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Science in Exercise and Sport Science

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Adapted Physical Education Teaching

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PERCEPTIONS OF PARENTS OF HIGH SCHOOL AGED STUDENTS
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By Korey Kleinhans

We recommend acceptance of this thesis in partial fulfillment of the candidate’s requirements for the degree of Master of Science in Exercise and Sport Science-Physical Education Teaching-Adapted Physical Education Teaching Concentration.

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ABSTRACT

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Like all students, those with disabilities are recommended to be physically active for 60 minutes a day, at least three days a week. However, few students with disabilities (SWD) achieve this level of activity in school or outside of school. Through school-sponsored extracurricular sport (SSES), SWD can engage in more physical activity (PA). There is minimal research on parent perceptions of SSES for high school-aged SWD and how these programs impact lives. This study examined parent perceptions of SSES for high school-aged students with Down syndrome (DS). Questions included demographics, ranking benefits, why students are or are not involved in SSES, reasons for involvement or lack of involvement in SSES, and parent perceptions regarding SSES programs. An online survey was used to collect data from 26 parents of students with DS. Results indicated that parents of high-school aged students with DS wanted SSES programs their child’s school district to remain physically active in a social setting. Also, the results revealed that parents want their children to gain self-confidence and become more social through a physically active environment created by SSES.
ACKNOWLEDGEMENTS

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I want to thank my former coaches John Baker and Efrain Ayala for molding me into a determined individual and guiding me towards success. Lastly, I especially want to thank Karlee Tomlinson for being in my life and joining me on this journey in La Crosse. I am very thankful and appreciative to know the people I do. I love each and every one of you and will continue to appreciate you. I dedicate my thesis to everyone who has helped me become who I am today and what I will accomplish in the future.
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INTRODUCTION

According to the U.S. Government Accountability Office (GAO), a child’s social health and well-being can be enhanced through physical activity (PA) and participation on a sports team (U.S. GAO, 2010). The Centers for Disease Control and Prevention (2016) recommends children and adolescents participate in at least 60 minutes of moderate to vigorous activity a day at least 3 days a week. Participating on a sports team can help students meet these activity requirements. These PA benefits are important for students with and without disabilities.

The benefits of sport participation include physical, social/emotional, and cognitive aspects (Murphy & Carbone, 2008). These benefits engage students with disabilities (SWD) in PA through school-sponsored programs that will enhance their transition to community-based program participation beyond school-based academic years. Benefits of PA include reductions in the risk of heart disease, diabetes, and weight gain. Furthermore, sport participation can improve muscles and joints which assist in motor development. Social/emotional and cognitive benefits of sport participation have been identified as including positive self-esteem, communication skills, and time management. Parental awareness of the values of sport participation for children is apparent in the fact that 44 million children participate in youth sport yearly (Dorsch, Smith, Wilson, & McDonough, 2015).
Students with disabilities can gain knowledge, confidence, and motor skills through school-sponsored extracurricular sport programs (SSES), which will enhance personal skills and decrease health-related risk factors (Cebula, Moore, & Wishart, 2010). Another benefit of participation in SSES was that SWD are allowed to engage in PA with peers which allows for social and emotional support (Cebula et al., 2010). These social and emotional support systems for SWD are important in the transition from school-based physical education to community-based physical recreational activities for a lifetime (Murphy & Carbone, 2008). Students with disabilities often require a longer period of time to develop physical, motor, social/emotional, and cognitive skills than nondisabled peers. These aspects can be included in SSES to help keep SWD physically active while developing social skills. Research has found that SWD who participated in traditional SSES ranged from 6 to 25%. In contrast, the participation rate for nondisabled students ranged from 18 to 73% percent (U.S. GAO, 2010, p.20).

According to the Section 300.107 (2006, p.46763) of the Individuals with Disabilities Education Act (IDEA, 2004), nonacademic and extracurricular services including activities such as athletics, transportation, and health services are part of special education services (U.S. Department of Education, 2006). However, sport participation rates of SWD have ranged from 10 to 56% lower than nondisabled peers (U.S. GAO, 2010). This suggests a lack of SSES opportunities for SWD while highlighting the important role these programs could play in the lives of SWD (U.S. GAO, 2010).

Section 504 of the Rehabilitation Act of 1973 requires school districts to provide all students with equal opportunities to participate in extracurricular activities. The GAO report (2010) reiterates the benefits of sport participation and the importance of
extracurricular sport for SWD. School districts are required to provide opportunities for all students with extracurricular sport programs, yet these programs do not receive the same funding or community recognition.

The U.S. Department of Education, Office for Civil Rights (OCR) “Dear Colleague Letter” (U.S. Department of Education, 2013) clarified the requirements for schools to provide equal opportunities in extracurriculurs for SWD. Research has been minimal since the release of the “Dear Colleague Letter” in regards to the involvement SWD in SSES. Due to the lack of research, parents and students are unaware of sport opportunities highlighted in the “Dear Colleague Letter”. Schools need to create equal opportunities for SWD whether they want to try out for an extracurricular program or join the SSES program.

While the positive outcomes of SSES on SWD lives has been demonstrated, school districts often lack support (financial or otherwise) to provide even minimal SSES programs for these individuals (Barr & Shields, 2011). Benefits of SSES have been recognized by the U.S. Department of Education through nonacademic services included in Section 300.17 of IDEA.

One specific population of SWD who should benefit from SSES are those with Down syndrome (DS). Extracurricular sport for students with DS provides benefits not only physically and socially, but helps negate negative health issues (Ramisch, 2012). Students with DS typically gain weight due to sedentary lifestyles, which could be reduced if they were physically active in SSES.

Approximately 30 to 50% of children with DS are obese (Harris, Rosenberg, Jangda, O'Brien, & Gallagher, 2003). Furthermore, the obesity rate and lack of
participation in PA is more prevalent among SWD as compared to nondisabled peers. Research suggests students with DS are often not involved in PA due to parent perceptions that PA programs need to have professionals specifically trained to work with SWD (Columna, Pyfer, Senne, Velez, Bridenthrall, & Canabal (2008). Parents of individuals with DS have additional pressures. In fact, over 40% of families of children with DS had a family member who stopped working because of their child's condition (Centers for Disease Control and Prevention, 2016). The importance of PA is often overshadowed by the challenges of daily life and the task of helping children with DS become independent.

Parents need to understand how PA and extracurricular sport can help SWD become independent during their transition to adult life. Parents may also need to be reminded of the connection between providing extracurricular opportunities for SWD and the potential for reduction of chronic diseases and prevention of secondary conditions with health-related risks (Westendorp, Hartman, Houwen, Smith, & Visscher, 2011). Students with disabilities are significantly behind their nondisabled peers in motor development and social interactions (Westendorp et al., 2011). By participating on a sport team, SWD can improve their motor development and social interactions. Students with disabilities can also increase their self-esteem, PA levels, social-cognitive skills, and communication skills through SSES (Blauwet & Willick, 2012).

Understanding the benefits of SSES is important because parental perceptions about sport can influence the amount of participation and PA their child engages in daily. Students with DS involved in SSES have the opportunity for social interaction with peers, involvement with positive role models, and to increase their own PA (Barr &
Shields, 2011). The physical, affective, and social benefits for SWD can be further facilitated through the parents raising their expectations of their child. Research indicates that parent perceptions of their child with DS being engaged in SSES programs is hindered by lack of money within the household, school funding, and transportation (Columna et al., 2008). As noted previously, parents of SWD encounter barriers that influence their views towards extracurricular programs.

Parents develop expectations of their child’s abilities based on previous experiences, information provided by the school system, and formal networks of professionals (Columna et al., 2008). Parents may view extracurricular activities as recreational activities. Parents may perceive programs are lacking qualified coaches, which limits their child’s participation and success in a SSES. Parents may also unintentionally limit PA involvement of their SWD due to previously established after school routines (Columna et al., 2008). In other situations, parents who are interested in SSES for their SWD may not have access to programs (Columna et al., 2008).

The influence of parental perceptions of PA on the participation in such activities by SWD has been established. The purpose of this study was to further evaluate these parent perceptions related to SSES programs. More specifically, this study determined parental desire for SSES development, and reasons their SWD was involved or not. The parent perceptions are the beginning of a well developed SSES program because without the encouragement and the support system at home, students with DS lack motivation to be physically active.
Therefore, the purpose of this study was to examine perceptions of parents of high school-aged students with Down syndrome regarding school-sponsored extracurricular sport programs. The following research questions (RQ) were examined:

RQ1a. Is there a SSES program for SWD in your child’s current school district?
RQ1b. Do parents of high school-aged individuals with DS want a SSES program their child’s district?
RQ2. What are the top reasons why high school-aged individuals with DS are not involved in SSES as identified by parents?
RQ3. What are the parent’s desired goals for their high school-aged child with DS within a SSES?
RQ4. What are the most popular sports in SSES programs for students with DS?
RQ5. What percent of parents of students with DS are satisfied with the SSES program that their child participates in?
RQ6. To what degree do parents of students with DS feel SSES participation is important for their child?
RQ7. How do parents of students with DS rank the benefits of participation in SSES?
METHOD

Participants

A total of 26 (22 females, 2 males) parents completed surveys were used in this study. Two parents did not specify their demographics. Parents that completed the survey were from the following states: Wisconsin (n = 16), Texas (n = 3), Missouri (n = 2). The following states had one participant that completed the survey: Illinois, Kansas, Kentucky, Michigan, and Tennessee. The SWD in the study were categorized by the Individuals with Disabilities Education Act (IDEA) under intellectual disability (U.S. Department of Education, 2006). Approval for the study was granted by the UW-La Crosse Institutional Review Board for the Protection of Human Subjects prior to surveying participants (See Appendix A).

Operational Definitions

The following terms were used in this study and appeared on the survey for clarification.

Down syndrome (DS): Categorized under intellectual disability in the Individuals with Disabilities Education Act of 2004, DS is a genetic condition resulting from the presence of an extra copy of chromosome 21 and is the most common chromosomal abnormality, affecting approximately 1 in 700 infants born yearly in the United States (Santos, Bueno, Tudella, & Dionisio, 2014). There are three types of DS: nondisjunction
or trisomy 21 (about 95% of DS population), translocation (about 4-5%), and mosaicism (about 1%).

**Individualized Educational Plan (IEP):** A written statement for each child with a disability that includes the child’s present levels of performance, measurable annual goals and objectives, evaluation methods, and the dates for initiation and completion for special education and related services (U.S. Department of Education, 2006).

**School-Sponsored Extracurricular Sport (SSES):** An interscholastic, club, or intramural league that is school-sponsored, but performed outside of school hours (U.S. Department of Education, 2006). For the purpose of this study, SSES did not include YMCA, Special Olympics, Paralympics, parks and recreation, and other community-based sport programs.

**Students with Disabilities (SWD):** Students with a disability as defined by the Individuals with Disabilities Educational Act (IDEA, 2004). The following 14 disabilities are categorized in the IDEA: Autism, deaf-blindness, deafness, developmental delay, emotional disturbance, hearing impairment, intellectual disability, multiple disabilities, orthopedic impairment, other health impairment, specific learning disability, speech or language impairment, traumatic brain injury, and visual impairment including blindness (U.S. Department of Education, 2006).

**Development of the Survey**

For this study, the survey for Perceptions of Parents of Children with Disabilities Regarding Physical Education and School-Sponsored Extracurricular Sport (See Appendix B) was developed and administered using Qualtrics. The survey was primarily forced-choice and consisted of 40 questions. Within the survey, 15 questions were
related to SSES programs. Demographic questions were used to determine the age and
gender of the person completing the survey as well as state of residence. The person
completing the survey provided demographic information for their child such as the
primary disability, grade level, gender, age, and ethnicity.

**Pilot Study**

A pilot study was conducted to increase the clarity and accuracy of the survey.
Higher education faculty members from the University of Wisconsin-La Crosse, the State
University of New York-Brockport, and parents of SWD in the La Crosse area reviewed
the survey. Based on feedback, modifications were made to the survey. Parents helped
modify and clarify questions regarding what their top five reasons were for including
their child with DS in a SSES program. Parents suggested the parental demographics
portion of the survey would be better placed at the end to avoid confusion between
questions relating to their child’s demographics.

**Distribution of Survey**

The survey was distributed via e-mail, social media, and newsletters to parents of
individuals with DS in high-school throughout the nation. Surveys were distributed to
organizations such as the Down Syndrome Association of Wisconsin Program, Upside
Down Wisconsin Best Buddies, and the University of Wisconsin-La Crosse Motor
Development Program and Physical Activity Mentoring Program. School districts that
that assisted with survey distribution within Wisconsin consisted of Onalaska, Holmen,
Menomonee Falls, and Wauwatosa. The survey was distributed nationally to the National
Consortium for Physical Education for Individuals with Disabilities, The Council for
Exceptional Children, and SHAPE America - Society of Health and Physical Educators.
Statistical Analysis

The Statistical Package for the Social Sciences (SPSS version 23.0) was used to analyze the data from the survey. Descriptive statistics included frequencies, means, and percentages and were used to determine the perceptions of parents of high school-aged students with DS regarding SSES programs.
RESULTS

Research Question One

The purpose of this study was to determine the perceptions of parents of high school-aged students with Down syndrome (DS) regarding school-sponsored extracurricular sport (SSES) programs. The data were analyzed based on 26 completed surveys from parents. Throughout the results, the frequencies vary depending on if the child had a SSES program or not within their school district.

The first research question asked parents if there was a SSES program for students with disabilities (SWD) in their child’s school district. The second part of the question asked if parents wanted a SSES program in their child’s district. Table 1 presents the results.

Table 1. School-Sponsored Extracurricular Sport Programs in School District

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a SSES Program?</td>
<td>10 (45.5)</td>
<td>12 (54.5)</td>
</tr>
<tr>
<td>Do You Want a SSES Program?</td>
<td>11 (91.7)</td>
<td>1 (8.3)</td>
</tr>
</tbody>
</table>

n = 22; Frequency (Percentage)

Results indicate that 45.5% (n = 10) of parents responded that there was a SSES program in their child’s school district, whereas 54.5% (n = 12) responded there was not a program. Results also indicated that 91.7% (n = 11) of parents wanted a SSES program in their child’s school district if they currently did not have one. The majority of parents
throughout the nation indicated that they wanted a SSES program. The data w indicated 16 parents were from Wisconsin of which 42.9% (n = 6) indicated there was a SSES program and 57.1% (n = 8) stated there was not a SSES program. Of the 8 parents that selected there was not a program, 87.5% (n = 7) indicated they wanted a program and 12.5% (n = 1) indicated they did not want a SSES program.

**Research Question Two**

The second research question asked parents their top reasons why their child was not involved in a SSES program. Table 2 reports the findings.

Table 2. Top Reasons for No Involvement in School-Sponsored Extracurricular Sport

<table>
<thead>
<tr>
<th>Top Reasons for No Involvement</th>
<th>Rank</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Satisfied with Past Programs</td>
<td>Mean</td>
<td>3.00</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cost of Participation</td>
<td>2.00</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transportation</td>
<td>4.50</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Unqualified Coaches/Staff</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lack of Facilities/Equipment</td>
<td>3.00</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>We prefer Recreational, Noncompetitive Activities</td>
<td>3.00</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>My Child is Not Interested in Sports</td>
<td>2.50</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Safety Concerns</td>
<td>3.00</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

n = 11; (1 = highest rank, 5 = lowest rank)

Table 2 indicates that ‘safety concerns’ (M = 3.00, n = 3), ‘lack of facilities/equipment’ (M = 3.00, n = 3), ‘my child is not interested in sports’ (M = 2.50, n = 2) and ‘cost of participation’ (M = 2.00, n = 1) were the top reasons why children with
DS were not involved in SSES programs. Table 2 also indicates that ‘transportation’ \((M = 4.50, n = 2)\) was ranked the lowest of the top reasons why their child was not involved in a SSES program. Parents determined that ‘unqualified coaches/staff’ was not a reason why their child was not involved in the programs.

**Research Question Three**

The third research question asked parents to rank their perceived goals for their child’s participation in SSES programs in high school. Table 3 summarizes the findings.

Table 3. Parents Top Desired Goals for Participation in a School-Sponsored Extracurricular Sport Program

<table>
<thead>
<tr>
<th>Desired Goals</th>
<th>Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain Self-Confidence</td>
<td>2.17</td>
<td>3 1 0 1 0</td>
</tr>
<tr>
<td>Develop Friendships Outside of School Setting</td>
<td>2.00</td>
<td>1 1 1 0 0</td>
</tr>
<tr>
<td>Develop Social Skills</td>
<td>3.20</td>
<td>1 2 0 1 1</td>
</tr>
<tr>
<td>Engage in Exercise</td>
<td>3.50</td>
<td>1 0 1 0 2</td>
</tr>
<tr>
<td>Develop Sportmanship Skills</td>
<td>4.00</td>
<td>0 1 0 1 2</td>
</tr>
</tbody>
</table>

\(n = 22; (1 = \text{highest rank}, 5 = \text{lowest rank})\)

According to Table 3, parents ranked their highest desired goals for their child in a SSES program as ‘gain self-confidence’ \((M = 2.17, n = 5)\), ‘develop friendships outside of school setting’ \((M = 2.00, n = 3)\), and ‘develop social skills’ \((M = 3.20, n = 5)\). The lowest ranked goals were ‘engage in exercise’ \((M = 3.50, n = 4)\) and ‘develop sportsmanship skills’ \((M = 4.00, n = 4)\).

**Research Question Four**

The fourth research question asked parents the top five most popular sports in SSES programs for students with DS. The results are summarized in Table 4.
Table 4. Most Popular Sports Participated in and How Many Years Participated for Each Sport

<table>
<thead>
<tr>
<th>Sport</th>
<th>Mean</th>
<th>Frequency</th>
<th>Years Participated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soccer (n = 5)</td>
<td>2.40</td>
<td>1</td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>3 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>4 years</td>
</tr>
<tr>
<td>Floor Hockey (n = 4)</td>
<td>3.25</td>
<td>0</td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>3 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>4 years</td>
</tr>
<tr>
<td>Whiffleball (n = 4)</td>
<td>3.25</td>
<td>0</td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>3 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>4 years</td>
</tr>
<tr>
<td>Track and Field</td>
<td>1.50</td>
<td>1</td>
<td>1 year</td>
</tr>
<tr>
<td>(n = 2)</td>
<td></td>
<td>1</td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>3 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>4 years</td>
</tr>
<tr>
<td>Bowling (n = 2)</td>
<td>1.50</td>
<td>1</td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>3 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>4 years</td>
</tr>
</tbody>
</table>

\(n = 17\)

Table 4 indicates soccer \((M = 2.40)\), floor hockey \((M = 3.25)\), whiffleball \((M = 3.25)\), track and field \((M = 1.50)\) and bowling \((M = 1.50)\) are the top five most popular SSES programs for high school-aged individuals with DS. Each sport had an athlete that participated at least more than 2 years. Sports that consisted of two participants or less participants with 1 year of participation or less were: swimming \((M = 3.00)\), baseball/softball \((M = 1.00)\), basketball \((M = 1.00)\), bocce, cycling, field hockey, golf, handball, tennis, volleyball, and wrestling.
Research Question Five

The fifth research question asked parents of children with DS to what degree they were satisfied with opportunities available in SSES programs for their child in high school. Data are reported in Table 5.

Table 5. Degree of Satisfaction with Opportunities Available in School-Sponsored Extracurricular Sport

<table>
<thead>
<tr>
<th></th>
<th>Extremely Unsatisfied</th>
<th>Somewhat Unsatisfied</th>
<th>Neither Satisfied Nor Unsatisfied</th>
<th>Somewhat Satisfied</th>
<th>Extremely Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2 (28.6)</td>
<td>1 (14.3)</td>
<td>0</td>
<td>2 (28.6)</td>
<td>2 (28.6)</td>
</tr>
</tbody>
</table>

n = 7; Frequency (Percentage)

Table 5 indicates that 57.2% (n = 4) of parents were somewhat to extremely satisfied with the opportunities available in their child’s school. Data indicated that 42.8% (n = 3) of parents were somewhat to extremely unsatisfied with the SSES opportunities available within their child’s school.

Research Question Six

The seventh research question asked parents to what degree SSES participation is important for their child in high school. Table 6 presents the results.

Table 6. Degree of Importance for Participation in School-Sponsored Extracurricular Sport Programs

<table>
<thead>
<tr>
<th></th>
<th>Extremely Unimportant</th>
<th>Somewhat Unimportant</th>
<th>Neither Important Nor Unimportant</th>
<th>Somewhat Important</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2 (28.6)</td>
<td>5 (71.4)</td>
</tr>
</tbody>
</table>

n = 7, Frequency (Percentage)

Results indicated that 28.6% (n = 2) felt SSES program participation was somewhat important, and 71.4% (n = 5) of parents reported participation was extremely important. The results showed that no parents felt the SSES program was unimportant.
Research Question Seven

The seventh research question determined the parents perceived ranking of the benefits SSES provided from most important (1) to the least important (3). Table 7 presents the findings.

Table 7. Ranking of Benefits of School-Sponsored Extracurricular Sport Programs

<table>
<thead>
<tr>
<th>Benefits of SSES</th>
<th>Mean</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional/Social Skills</td>
<td>1.14</td>
<td>6 (85.7)</td>
<td>1 (14.3)</td>
<td>0</td>
</tr>
<tr>
<td>(e.g., communication, creating friendships)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Fitness/Motor Skills</td>
<td>2.14</td>
<td>1 (14.3)</td>
<td>4 (57.1)</td>
<td>2 (28.6)</td>
</tr>
<tr>
<td>(e.g., running, sport skills)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Development</td>
<td>2.71</td>
<td>0 (28.6)</td>
<td>2</td>
<td>5 (71.4)</td>
</tr>
<tr>
<td>(e.g., strategies, knowledge of rules)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 7, parents indicated the number one ranked benefit was ‘emotional/social skills’ \((M = 1.14, n = 6)\). Parents reported the second most important benefit was the child’s ‘physical fitness/motor skills’ \((M = 2.14, n = 4)\). The third ranked benefit was ‘cognitive development’ \((M = 2.71, n = 5)\). No parents felt ‘cognitive development’ was most important and no parents ranked ‘emotional/social skills’ as the least important.
DISCUSSION

The purpose of this study was to determine the perceptions of parents of high school-aged students with DS regarding SSES programs.

School-Sponsored Extracurricular Sport Programs

Results indicated that 45.5% (n = 10) of parents responded there is a SSES program in their child’s school district. Another question asked the 54.5% of parents who responded there was not a SSES program if they wanted a program in their child’s school district. The results revealed 91.7% (n = 11) of those parents wanted a SSES program in their child’s school district and 8.3% (n = 1) did not.

The current research indicates that parents are not as educated about the benefits within the physical and social realms that a SSES program can offer for students with DS. Based on this research, parents need to learn and become educated by adapted physical education professionals to increase the amount of SSES programs. The 54.5% of parents that do not have a program for their child in high school may not be interested in sports themselves or feel sport was not a priority in life. Although the results were nationwide, 57.1% (n = 8) of parents in Wisconsin indicated they did not have a SSES. However, 87.5% (n = 7) of the parents indicated they wanted a SSES program. The results reveal that school districts need to be aware of parents desires to ensure their child with DS is going be socially and emotionally safe and successful while being a part of a SSES program.
Section 300.107 (2006, p.46763) of the Individuals with Disabilities Education Act (IDEA, 2004) states that, nonacademic and extracurricular services and activities such as athletics, transportation, and health services are part of special education services (U.S. Department of Education, 2006). However, sport participation rates of SWD have ranged from 10 to 56% lower than nondisabled peers (U.S. GAO, 2010). Similarly, this current research revealed low participation rates. This suggests a lack of SSES opportunities for SWD while highlighting the important role these programs could play in the lives of SWD (U.S. GAO, 2010).

Adapted physical education teachers and other special education professionals can advocate for parents within IEP meetings to encourage extracurricular sport for SWD. Parents need to advocate for these programs on their child’s individualized education plan (IEP) under extracurricular sport to increase their physical, social/emotional, and cognitive skills. Informing parents and increasing their knowledge of the federal laws for SWD can increase the amount of SSES programs. School-sponsored extracurricular sport programs could be started with the help of adapted physical education teachers, parents, and community members that support and are knowledgeable of the services for these students.

Sport participation is lower for SWD than their nondisabled peers and there has been minimal research since the U.S. Department of Education, Office for Civil Rights (OCR) “Dear Colleague Letter” (U.S. Department of Education, 2006) was released. Due to the lack of research, parents and students are unaware of sport opportunities highlighted in the “Dear Colleague Letter”. Parents and special education professionals need to enhance the awareness of the “Dear Colleague Letter” and how the content of the
“Dear Colleague Letter” refers to the participation of SWD in SSES programs. Parents seem to have mixed feelings about competitive SSES programs, however through these programs their child would be physically active with meaningful practice and gameplay opportunities with their peers.

The results of the current study are similar to those found by Columna et al., (2008) in that parents wanted SSES programs for their SWD. According to Columna et al., (2008) the results indicated that parents “…wish there were adapted sport…and how she believes sport, practicing a sport… such as baseball and joining other leagues would benefit the child tremendously.” These programs are desired by parents and needed for high school aged students with DS to practice the skills they have learned throughout their years in physical education. The current results indicated that whiffleball was one of the top five sports offered as a SSES program for students with DS. When comparing the data, parents are getting their student with a disability involved in physically active sports that increase their social and emotional identities. A parent had mentioned in Columna et al., (2008) that they wished their child had adapted sport programs and with the proper knowledge and advocacy the parents could increase the awareness of the importance for SSES programs. Parents need to advocate for these programs within their child’s school districts throughout the nation to create opportunities for SWD.

Parents in Table 2 reported that ‘safety concerns’ (n = 3), ‘lack of facilities/equipment’ (n = 3), and ‘my child is not interested in sports’ (n = 2) were the top reasons why their child with DS was not involved in a SSES program. These top reasons are based on the parent perceptions of a SSES program. Further research could benefit parents who lack knowledge of how beneficial a SSES program is and how safe
the programs are with qualified professionals as coaches. The parent perceptions of safety and the lack of facilities indicate educators need to explain to parents of children with DS how safety is the number one priority within a SSES program. Advocating as an adapted physical educator requires a well developed plan for a quality program to ensure the students will be safe and successful. Athletic programs within schools require athletes to get an updated physical prior to sport participation. A recent study by Sanyer (2006) reviewed students with DS and their participation in sport. Prior to participation, a screening process is a mandatory safety precaution for a SWD to participate in extracurricular sport. Although the health of the child is a top priority, the facility must also be an area where students will be safe and successful while remaining physically active.

Data in the current study showed that parents did not have their child in SSES programs because they were ‘not satisfied with past programs’ (n = 2), ‘cost of participation’ (n = 1), ‘transportation’ (n = 2), and ‘we prefer recreational, noncompetitive activities’ (n = 2). Based on the results, adapted physical educators need to advocate and inform parents about SSES programs, which include explaining that the school district will pay for cost of participation and transportation as long as extracurricular sport is on the child’s IEP. Finally, the results indicated none of parents reported ‘unqualified coaches/staff’ as their reasons for not having their child involved in a SSES program.

This is revealing to see why students with DS were not involved in SSES programs because three out of four of these aspects could be provided by the school district. A qualified coaching staff could encourage SWD to become interested in sport.
through physical education and other sport organizations prior their participation in a SSES program. Students with disabilities receive transportation by the school as listed on the child’s IEP and allows parents to know where their child will be located after they have participated in practice or gameplay throughout a SSES program. School-sponsored extracurricular sport programs have a competitive atmosphere, however, parents may want their child involved in a recreational atmosphere for physical activity. Physical activity needs to be the focus for these students while being as safe and successful as possible. Increasing the programs and awareness of SSES programs, allows coaches to encourage students and parents who do not believe in a competitive atmosphere to reconsider their views on sport and seek what is best for their child.

**Participation in School-Sponsored Extracurricular Sport Programs**

The fourth research question asked parents to rank their top desired goals for their child’s participation in SSES programs in high school. Results indicated that ‘develop friendships outside of school setting’ (n = 3), ‘gain self-confidence’ (n = 5), and ‘develop social skills’ (n = 5) were ranked number one by four parents and number two for five parents. These results were a top priority for parents of students with DS who participated in a SSES program. Parents revealed they want their child to develop friendships outside of a school setting, gain self-confidence, and develop social skills. A SSES program can incorporate and enhance all of these elements by providing an after school program designed to improve self-confidence and social skills while being physically active.

School-sponsored extracurricular sport programs are developed for SWD to engage in different types of sport and learn lifelong skills that will benefit them in the future. The current research revealed that parent’s desired goals for their child was to be
socially engaged and have confidence in themselves as individuals while being physically active in a SSES program. Adapted physical educators need to educate parents on practice structure, gameplay, and how their top desired goals will be achieved for their child in a SSES program. School-sponsored extracurricular sport programs could develop goals as a team that would ensure all students and teammates understand the expectations during physical activity and sport participation.

Similar to the current study, Huang and Brittain (2006) conducted a study on athletes with DS in track and field and powerlifting (ages 22 to 39) that indicated sport can teach athletes physical, psychological, and socialization skills they would never learn by isolating themselves. Sport provides an environment where persons can challenge their disability by defying the stereotypes society holds (Huang & Brittain, 2006). Huang and Brittain (2006) found similar results for young adults as the research conducted regarding parent perceptions of SSES programs of school-aged students. By creating SSES programs, these athletes can begin to develop physical, psychological, and social skills with peers prior to being involved in community-based activities as adults.

A similar study by Shapiro and Martin (2014) examined the social and emotional aspects of athletes with physical disabilities. The study proposed to determine the quality of friendships, physical self-perceptions, and general self-worth predicted close friendships, loneliness, and social acceptance among the 46 athletes with physical disabilities. (Shapiro & Martin, 2014).

The perceptions of athletic competence and self-worth were the most important predictors of loneliness and were the most significant within the results. Although Shapiro and Martin (2014) studied athletes with physical disabilities, students with DS
have very similar needs. Social acceptance, decreasing loneliness, and increasing their confidence or general self-worth could be provided by a SSES program and transitioned into further community-based sport participation.

Research by Huang and Brittain (2006) and Shapiro and Martin (2014) showed the top desired goals will most likely benefit the child in a SSES program. The results indicated that ‘engage in exercise’ (n = 4) and ‘develop sportsmanship skills’ (n = 4) were ranked the lowest. However, these desired goals will typically be accomplished within a SSES program. Parents are focused more on the social aspect of sport than the health-related aspects, which shows educators need to explain to parents how the socialization aspect would be developed through exercising with their peers. Exercise and sportsmanship are two aspects that can be enhanced and learned from peers who model positive behaviors during a SSES program. Practice and gameplay opportunities are times when students with DS will learn these aspects while remaining active.

The fifth research question asked parents the top five most popular sports in SSES for students with DS. When selecting a sport, parents were also asked to specify how many years (1 to 4+) their child participated in the sport. The top five sports reported were soccer ($M = 2.40$ years, $n = 5$), floor hockey ($M = 3.25$ years, $n = 4$), whiffleball ($M = 3.25$ years, $n = 4$), track and field ($M = 1.50$ years, $n = 2$), and bowling ($M = 1.50$ years, $n = 2$). Parents reported that soccer was the most popular sport. Parents did not select sports such as cycling, field hockey, football, golf, basketball, bocce, tennis, volleyball, and wrestling. The data shows that parents want SSES programs for their child with DS in high school. Parents indicated that their child with DS did not participate in multiple sports which typically involved an increased amount of cardiovascular
endurance, constant strategic planning, or was too expensive for parents of a child with DS. The top five most popular sports have all had children with DS participate at least two years in a SSES program. Based on the results, parents could be encouraged by schools to be active within Special Olympics and other sport leagues for SWD. During the current research, several school districts indicated that they were part of local Special Olympics programs and did not offer SSES programs. This indicates that school districts are relying on community-based programs instead of implementing SSES programs.

Sport participation is important for students with DS and all SWD to achieve the recommended amount of at least 60 minutes of moderate to vigorous activity a day at least three days a week (CDCP, 2016). Physical activity attained in SSES programs will benefit SWD health and increase their ability to live a healthier lifestyle. Research by Rimmer, Rowland and Yamaki (2007) state that PA and sport improve health. These SSES programs are meant to increase physical, social/emotional, and cognitive development, which will enhance their lifelong skills through a healthier lifestyle. Rimmer, Rowland, and Yamaki (2007) showed the lack of programs prohibit individuals with DS and other disabilities from having the chance to engage in sport for PA.

Parents Degree of Satisfaction, Importance of Participation, and Benefits of Sport

Research question six asked parents of children with DS to what degree they are satisfied with opportunities available in SSES program for their child in high school. Results were Extremely Unsatisfied (28.6%, n = 2), Somewhat Unsatisfied (14.3%, n = 1), Neither Satisfied Nor Unsatisfied (0), Somewhat Satisfied (28.6%, n = 2), and Extremely Satisfied (28.6%, n = 2). In summary, 57.2% (n = 4) of parents were somewhat to extremely satisfied with the opportunities available within their child’s
school. Parents provided data that showed 42.8% (n = 3) were somewhat to extremely unsatisfied with the opportunities available within their child’s school. Based on these limited current data, parents have mixed results regarding their satisfaction with SSES programs. Parents that are extremely unsatisfied or somewhat unsatisfied with past programs may not have had a quality program that focuses on the child’s safety, physical activity, and social skills with typically developing peers. Parents that were unsatisfied may not be as knowledgeable about the competitive aspect of SSES program. For most parents, a SSES program could be their first experience with their child involved in a competitive school-sponsored extracurricular sport. Therefore, parents could have had a poor experience with their past SSES program due to lack of support from administration, lack of facilities/equipment, and/or unqualified coaches. Due to these barriers, some parents may not be as satisfied as other parents with the SSES programs.

In a study by Menear (2007), parents expressed their desire for opportunities for programs that would benefit their children. The highest percentage of study participants recommended team sports and dual sports for individuals with DS (Menear, 2007). An additional study by Barr and Shields (2011) discussed how sport provided encouragement, opportunity for imitation, and give the skills learned throughout physical education a purpose during sport. Based on the results of parent satisfaction of SSES programs in the current study, adapted physical education teachers need to increase the parent’s awareness of SSES programs. Adapted physical educators also need to identify specific health aspects that would benefit their child with DS such as increasing their cardiovascular endurance and decreasing their risk of obesity.
The seventh research question asked parents to what degree did they feel SSES participation was important for their child in high school. Based on the results, 28.6% (n = 2) of parents felt SSES participation in high school was ‘Somewhat Important’ and 71.4% (n = 5) of parents felt SSES participation in high school was ‘Extremely Important’. These results indicate that parents feel it is important for their child to participate in a SSES program. Parents did not feel that SSES participation was ‘Extremely Unimportant’, ‘Somewhat Unimportant, or ‘Neither Important Nor Unimportant’. Results revealed parents believed participation was somewhat and extremely important for their child within a SSES program. The parents revealed the SSES programs were important for their child to participate to increase their social and emotional skills with their typically developing peers while remaining physically active through sport.

Parents felt SSES participation was important for their child with DS in high school. A recent study by Jaarsma et al., (2014) determined out of the 72% of PWD who remained active (n = 411), 43% (n = 176) stated walking was their number one sport mentioned and fitness (going to the gym) was their second most physically active sport they participated in. Parents may feel SSES participation is important, however, many barriers are holding their child back from being involved in a SSES program. Research by Obrusnikova and Miccineilo (2012) cited that 82% of parents with a child with autism spectrum disorder do not have the time, energy, or patience to support their child during PA. School-sponsored extracurricular sport programs allows students to be physically active with their peers while being supported and coached by professional staff members.
This would apply to students with any type of disabilities as they typically have the same needs as students with DS.

The final research question examined the parents perceived ranking of the benefits SSES provides from the most important (1) to the least important (3). Based on the results parents indicated the number one factor was ‘emotional/social skills’ \( (M = 1.14) \). Parents ranked ‘physical fitness/motor skills’ \( (M = 2.14) \) second in importance for their child. Finally, the third ranked factor was ‘cognitive development’ \( (M = 2.71) \). Parents indicated in the final question and throughout the research the significance and importance of social/emotional skills and safety while performing physical fitness/motor skills. School-sponsored extracurricular sport programs can increase the development of social/emotional skills for students with DS and all SWD while working towards a common goal of increasing PA.

A supporting research study by Barr and Shields (2011) examined 20 different parents (16 mothers, 4 fathers) of individuals with DS ranging from 2 to 17 years of age, that put PA into categories and created sport as a separate category. Physically, structured programs allow for attention, guidance, motivation, and adaptations. Socially, these programs provide individuals with DS a reason to join a program and engage in activity with peers. Peers provide encouragement, opportunity for appropriate role modeling, and give the skills learned throughout physical education a purpose during sport (Barr & Shields, 2011). School-sponsored extracurricular sport programs may benefit students with DS and increase their PA while being social with their typically developing peers.
Implications

There are multiple implications based on these perceptions of parents of high school aged students with DS regarding SSES program. Parents indicated that if they did not have a program, that they wanted a SSES program. Extracurricular activities facilitate development of SWD and increase the social awareness with their peers while providing PA. In SSES, students participate in PA through practice and gameplay that will increase physical, social/emotional, and cognitive skills.

Parents indicated that safety, lack of facilities/equipment, and their child being uninterested in sport were the reasons why their child with DS were not involved in a SSES program. Adapted physical education and special education professionals need to provide parents with the proper information about the SSES programs and how to place extracurricular sport on the child’s IEP. Parents and adapted physical education teachers can advocate for these programs and discuss with administrators why these programs are needed within their school district. Administrators need to acknowledge the concern the parents and adapted physical education teachers have regarding the student’s health risks, social/emotional skills, and cognitive abilities. Through SSES programs, students with DS could develop these skills with the help of administration and acknowledgement from parents and adapted physical educators. Students with DS and all disabilities would be physically and emotionally safe with their peers and placed in a least restrictive environment to ensure the athletes are safe and successful in a SSES program. Adapted physical education teachers, parents, and administrators need to work together to create SSES programs.
Parents of children who were involved in a SSES program ranked their top desired goals that showed they want their child to gain self-confidence, develop friendships outside of school settings, and develop social skills. High school is a time when SWD should become active within the community at either the workplace or community-based extracurricular activities. It is also a time in life when many SWD start very sedentary habits and lifestyles. Students with DS specifically need to remain physically active outside of school hours to decrease the obesity rate and increase their PA. School-sponsored extracurricular sport programs increase friendships, social skills, and self-confidence among SWD. Specific sports increase athlete’s social skills, however, parents indicated their child has been involved in more team sports than individual sports. Parents reported the athletes were participating in SSES programs for at least two years or more, which shows these SSES programs are working. However, more programs are needed in school districts.

Nationwide, 57.2% of parents reported they were satisfied with the opportunities available regarding SSES programs for their child with DS. Despite very low survey returns, school districts need to develop more SSES programs to ensure students with DS are provided the opportunities to be involved in a school-sponsored sport. Adapted physical educators can assist parents to ensure SSES is on the child’s IEP. Adapted physical educators should also organize SSES programs with qualified coaches and ensure that a safe and successful program is developed in their school district. Parents determined SSES participation was important for their child. Educators focus on lifelong learning and community-based activities so SWD can transition and live a healthier, physical, and social lifestyle beyond their academic years. Finally, parents ranked
emotional/social skills as their top benefit of a SSES program that will increase their child’s self-confidence and friendships outside of school. School-sponsored extracurricular sport programs can help athletes create friendships while remaining physically active and learning the basic knowledge of sport.

**Limitations**

Limitations need to be recognized in the study. The major limitation was the very low number of responses by parents. The second limitation was tracking the population completing the survey due to multiple social media distribution methods. Social media was a difficult source for tracking how many parents were exposed to the survey. The third limitation was posting on social media pages because parents may not have had active accounts or check their media updates as often as others. Parents may have social media accounts and be a part of organizations or groups on Facebook, however, the parents may not have an active account. The fourth limitation was the lack of understanding on the part of some parent organizations about the topic. Many organizations did not know what a SSES program was and did not want to distribute an email to parents about a program they did not know about. The fifth limitation was the many surveys that were not completed by parents and still submitted. Parents may have thought the survey was completed after the physical education or they could have been overwhelmed with the detailed questions regarding their child. The sixth limitation was parents may have misinterpreted the term “school-sponsored extracurricular sport” program and associated the term with Special Olympics, Unified Sports, YMCA recreational sports, or other clubs within their district.
Suggestions for Future Research

The following areas of research are recommended:

1. In the future, research should be conducted nationwide and with all school-aged SWD regarding SSES programs in public schools.

2. Research could ask parents why their child is involved in Special Olympics or other programs and ask them if they would prefer their child in a SSES program.

3. Conduct research of SWD who currently participation in SSES.

4. Collect data on current Adapted Sport League athletes with their experiences within a SSES programs. School-sponsored extracurricular sport programs are important for parents, adapted physical education teachers, and school districts to understand the health benefits and positive aspects of physical activity.

5. Analyze the parent knowledge of SSES programs.

6. Collect data from students within school districts that do not have a SSES programs and analyze the data to determine which districts want a SSES program either nationwide or a specific state.

7. A final suggestion, increase the awareness of the programs, collect data on parents and athletes throughout the nation, and identify results based on states or specific disabilities based on the nationwide statistics.
CONCLUSION

School-sponsored extracurricular sport programs provide students with DS with skills and experiences to be active and live a healthier lifestyle. These programs guide SWD once they are in the community to be active and socially involved. School-sponsored extracurricular sport programs allow parents to see their child participate and socialize while being a part of a team atmosphere. Most parents of SWD never expect their child to be involved on a sports team with their peers. School-sponsored extracurricular sport programs are designed for SWD to increase peer interactions, increase PA, and to offer opportunities to develop social skills.

Results from this study reveal that there are many parents who want SSES programs to benefit their child. Adapted physical educators need to advocate for these programs and educate parents and school administrators about the benefits of SSES. A SSES program can be a varsity sport and should be a team that all SWD look forward to being a part of once they are eligible.

Further research regarding SSES programs will help expose the programs to the community and encourage other professionals to begin programs in school districts throughout the U.S. In conclusion, SSES programs allow for all SWD to remain physically active in their schools and transition their active lifestyle beyond their academic years into community-based activities.
REFERENCES


APPENDIX A
INSTITUTIONAL REVIEW BOARD RESEARCH APPROVAL LETTER
To: Korey Kleinhans

From: Bart Van Voorhis, Coordinator
Institutional Review Board (IRB) for the
Protection of Human Subjects
bvanvoorhis@uwlax.edu
5-6892

Date: January 26, 2017

Re: RESEARCH PROTOCOL SUBMITTED TO IRB

The IRB Committee has reviewed your proposed research project entitled “The Status of School-Sponsored Extracurricular Sport Programs for High School-Aged Students with Down Syndrome in Wisconsin.”

The Committee has determined that your research protocol will not place human subjects at risk. The attached protocol has been approved and is exempt from further review per 45CFR46, 46.101(b)(2).

However, it is strongly suggested that Informed Consent always be used. Remember to provide participants a copy of the consent form and to keep a copy for your records. Consent documentation and IRB records should be retained for at least 3 years after completion of the project.

Since you are not seeking federal funding for this research, the review process is complete and you may proceed with your project.

Good luck with your project.

cc: IRB File
Garth Tymeson, Faculty Advisor
APPENDIX B

ONLINE SURVEY:

PERCEPTIONS OF PARENTS OF CHILDREN WITH DISABILITIES REGARDING

PHYSICAL EDUCATION AND SCHOOL-SPONSORED

EXTRACURRICULAR SPORT
Q1.
Perceptions of Parents of Children with Disabilities Regarding Physical Education and School-Sponsored Extracurricular Sport

NOTE: If your child with a disability is not between the ages of 3-26 years, please disregard this survey. You are done. Thank you for your time.

The purpose of this study is to determine parent perceptions of children with disabilities about their child's school-based physical education and school-sponsored extracurricular sport programs. When completing this survey, YMCA, Special Olympics, Paralympics, parks and recreation, and other community-based sport programs should not be considered. This survey is only about school-based/school-sponsored programs.

Participation in this study is voluntary. You may stop your participation at any time. All responses to this survey are anonymous and your identity will never be revealed. Completion and submission of this survey indicates your informed consent. Thank you for your time and participation.

Q2. In what state/territory do you reside?

Select from dropdown

Please select your state/territory from the dropdown options

Q3.
Which of the following represents your child’s primary disability for school-based special education?

- Autism
- Deaf-blindness
- Deafness
- Emotional disturbance
- Hearing impairment
- Intellectual disability (without Down syndrome)
- Intellectual disability (with Down syndrome)
- Multiple disabilities
Q5. What is your child's grade level?
- Preschool (ages 3-5)
- Elementary School (Grades K-5)
- Middle School (Grades 6-8)
- High School or Secondary transition program (Grades 9-12)

Q6. What is the gender of your child?
- Male
- Female

Q7. What is the age of your child?

Please Select from Dropdown

Age (years) 

Q8. What is your child's race/ethnicity?
- White or Caucasian
- Hispanic or Latino
- Black or African American
- Native American or American Indian
- Asian or Pacific Islander
- Hmong
- Other, please specify

0% [ ] 100%
Q24. School-Sponsored Extracurricular Sport Questions

Definitions: Please consider the following definitions when completing the survey questions.

Extracurricular Sport: an interscholastic school-sponsored sport performed outside of school hours for athletes at the high school level.

School-Sponsored: programs may include, but are not limited to, adapted sport leagues, Special Olympics, unified sports, and Paralympic programs. This does not include community-based programs such as park and recreation programs.

Q25. Is your child in high school?

- Yes
- No

Q26. Is there a school-sponsored extracurricular sport program for students with disabilities at your child’s high school?

- Yes
- No
Q27. Currently or in the past, has your child participated in school-sponsored extracurricular sport in high school?

- Yes
- No

Q30. Currently or in the past, which of the following type(s) of school-sponsored extracurricular sport program does your child participate in high school?

- With nondisabled peers
- Only for students with disabilities
- Both

Q31. Rank your top 5 desired goals for your child’s participation in school-sponsored extracurricular sport in high school. Use your mouse to click and drag the items on the left to the appropriate rank in the box on the right side of the screen.

Items
- Active participation and recognition within school community
- Develop sportsmanship skills
- Develop social skills
- Develop sport specific skills
- Develop passion for physical activity
- Develop friendships outside of school setting
- Engage in exercise
- Gain experience in competition
- Gain self-confidence
- Gain physical fitness skills for lifelong use
- Helps develop relationships within the family
- Have fun playing sport
- Play as part of a team

#1 (Top Priority) to #5
Q32. Is school-sponsored extracurricular sport listed on your child's IEP?

- Yes
- No
- I am not sure

Q33. In which of the following school-sponsored extracurricular sports does your child participate in high school?

How long have they participated in each school-sponsored extracurricular sport in high school?

<table>
<thead>
<tr>
<th>Number of years</th>
<th>1 year</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
<th>More than 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball/Softball</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
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<td>Basketball</td>
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<tr>
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<tr>
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<tr>
<td>Swimming</td>
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<td>Tennis</td>
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<tr>
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<tr>
<td>Wrestling</td>
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<tr>
<td>Other, please specify</td>
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<tr>
<td>Other, please specify</td>
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</tbody>
</table>
Q35. To what degree are you satisfied with the opportunities available in school-sponsored extracurricular sport programs for your child in high school?

Degree of satisfaction

- Extremely unsatisfied (1)
- Somewhat unsatisfied (2)
- Neither unsatisfied nor satisfied (3)
- Somewhat satisfied (4)
- Extremely satisfied (5)

Q36. To what degree do you feel school-sponsored extracurricular sport participation is important for your child in high school?

Degree of importance of participation

- Not at all important (1)
- Slightly important (2)
- Moderately important (3)
- Somewhat important (4)
- Extremely important (5)

Q37. Rank order the benefits of school-sponsored extracurricular sport for your child from most important (1) to least important (3). Use your mouse to click and drag the benefits.

(If you do not want to rearrange these answers please click on one of the selections for the survey to recognize your response.)

- Emotional/Social Skills (e.g., communication, creating friendships)
- Physical Fitness/Motor Skills (e.g., running, sport skills)
- Cognitive Development (e.g., strategies, knowledge of rules)

Q39. What is your age (age of person completing this survey)?

Select from dropdown

Your Age (years)

Q40. What is your gender (gender of person completing this survey)?

- Male
- Female
APPENDIX C
EMAIL COVER LETTER TO PARTICIPANTS
Dear Parent/Guardian:

Physical education and extracurricular activities are very beneficial school experiences for all students, including those with disabilities. The physical, social, and emotional development of students with disabilities can be enhanced through quality physical education and extracurricular sport/athletics.

Your participation in this **brief 10-minute** survey will help gather information from parents about their perceptions of physical education and school-sponsored extracurricular sport programs. This information can hopefully improve these programs in the future. Faculty and graduate students in the adapted physical education teacher preparation at the University of Wisconsin-La Crosse are conducting this project. Parent input is valued and much appreciated.

All responses and identities will be anonymous. Please click the link below to complete the survey. Submission of the survey indicates your consent to participate. Please complete and return the survey by **June 15, 2017**. Thank you very much for your time and participation.

Please follow the link below to complete the survey:
**SURVEY LINK**

If there are any questions regarding this survey, please contact Korey Kleinhans at 262-424-5577 (**kleinhan.korey@uwlax.edu**) or Garth Tymeson at 608-785-5415 (**gtymeson@uwlax.edu**).

Thank you very much for your time, expertise, and participation.

Sincerely,

Korey Kleinhans
Adapted Physical Education Graduate Student

Garth Tymeson, Ph.D., Director
Adapted Physical Education Program
APPENDIX D
REVIEW OF RELATED RESEARCH LITERATURE
Review of Related Research Literature

Introduction

Down syndrome (DS) is caused by a trisomy of chromosome 21, with an incidence of approximately 1 in 700 live births (Santos, Bueno, Tudella, & Dionisio, 2014). Down syndrome is the most common genetic cause of intellectual disability and is associated with congenital heart defects, muscle hypotonicity, joint hypermobility, low cardiovascular fitness, and decreased muscular strength (Barr & Shields, 2011). Persons with DS can help manage their health-related fitness and nutrition through sport participation.

Adolescents who participate in sports are eight times more likely to be physically active at age 24 as adolescents who do not participate in sport. Three-in-four of adults who are 30 and over who play sport today played sports as school-aged children (Perkins, Jacobs, Barber, & Eccles, 2004). As of June, 2016, 69% of adults were overweight or obese which represented a 5% increase from data in 2015. Within Wisconsin, 37% of adults are overweight and 32% are obese according to the Centers for Disease Control and Prevention (CDCP, 2016). Extracurricular sport and activities could help adolescents decrease their chance of being overweight or obese (Perkins et al., 2004).

Extracurricular activities and sport are developed for students with disabilities (SWD) for the purpose of enhancing lifelong skills, increasing their health-related fitness, and decreasing obesity. Parents of SWD need to understand how their actions are replicated by their children. If parents want to see change in their child’s lives, they need to make a lifestyle change as well. Parents need to increase their physical activity (PA), engage in community-based activities with their child and consume a well-balanced diet.
Parents need to lead by example as well as advocate for their child within the schools to ensure their child will receive the daily recommended amount of physical activity.

Extracurricular activities are needed for SWD and can be provided in their Individualized Educational Plan (IEP). The IEP should address physical education and school-sponsored extracurricular sport (SSES) programs. Exposure to PA in this way can create a positive perception of PA in SWD (Jacola, et al. 2014).

Section 504 of the Rehabilitation Act of 1973 states that no individual shall be excluded because of a disability in programs that receive federal funds (U.S. Department of Education, 1973). School-sponsored extracurricular sport is provided if a program is necessary for the individual with DS. Extracurricular activities and SSES are used to develop healthier lifestyles for individuals with DS. This review of literature examines the benefits of sport and PA participation for persons with DS, health and PA levels of persons with disabilities, and parent perceptions of benefits and barriers regarding sport and/or PA participation for persons with DS.

**Benefits of Sport for Persons with Disabilities**

Persons with disabilities (PWD), including those with DS, have movement patterns that tend to be less efficient and hinder participation in PA which reduces their exercise capacity. Due to low levels of activity within individuals with DS, 45% of males and 56% of females are overweight (Pitetti, Baynard, & Agiovlasitis, 2013). Due to many individuals with DS living a sedentary lifestyle, they do not achieve the recommended daily amount of PA which increases their risk of obesity. Persons with disabilities may benefit physically, social/emotionally, and increase their lifelong skills while
participating in a SSES outside of school. Although individuals with DS may be part of a SSES program, other PWD are often involved.

In most cases, individuals with cerebral palsy (CP) (depending on the severity of the disability) are lower functioning in gross motor skills, have muscle spasticity, and may have a cognitive impairment. A study by Groff, Lundberg, and Zabriskie (2009) examined the influence of extracurricular sport on athlete’s physical, psychosocial, and emotional aspects of life. The purpose of the study was to examine the effects of adapted sports participation on athletic identity and the influence of participation on the quality of life for persons with CP (Groff et al., 2009).

Participants with CP ranged from ages 18 to 52 years and participated in adapted sport an average of 8 years and 9 months. Interviews ranged from 5 to 60 minutes based on the severity of the person. Based on an Influence on Quality of Life Scale, participants used a slider bar to identify if they strongly agreed, disagreed, somewhat disagreed, neither agreed nor disagreed, somewhat agreed, agreed, and strongly agreed with the statement provided by the researcher.

Participants used a ranking scale from strongly disagreed to strongly agreed in regards to the phrase, “My adaptive sport experience has had a positive influence on my…” The results indicated that the overall health (84.9% agreed or strongly agreed), the quality of life (80.8% agreed or strongly agreed), quality of family life (53.4% agreed or strongly agreed), and the quality of a social life (56.1% agreed or strongly agreed) were all positively impacted through sport participation.

Results of this study found that participation in sport for persons with CP increased their awareness of PA. Sport benefited them socially and emotionally as well as
positively impacted their relationship with their families and peers. Adapted sport had a positive influence on their quality of life and their athletic identity.

The implications of this study show how providing opportunities for PWD offers an opportunity for sport to enhance their well-being and social life through PA. The data clearly demonstrated that the athlete’s overall health, quality of life, quality of family, and quality of social life were influenced through an adapted sport program.

Individuals with other disabilities can also benefit from a physically active lifestyle through sport. For example, persons with a visual impairment (VI) notice barriers and facilitators that influences or denies the individuals engagement in a sport program. Research by Jaarsma, Dekker, Koopmans, Dijkstra, and Geertzen (2014) examined the facilitators and barriers of sport participation for individuals with VI. A total of 648 participants were surveyed through an online questionnaire. All participants were 18 years or older with an average age of 49 years. Sixty-three percent (n = 411) of the study participants reported participation in sports. The data were collected through a 30-item questionnaire and included questions regarding PA through sport participation. Participants with VI gave specific feedback throughout the questionnaire of the difficulties they faced as an athlete, socially and emotionally, prior to the Paralympics (Jaarsma et al., 2014).

Active participants reported dependence on others and VI as personal barriers. Additional barriers included transportation and lack of possibilities within their neighborhoods (Jaarsma et al., 2014). Inactive participants with VI mentioned lack of exercising with peers, costs of sports, and transportation barriers to participation in sport. These barriers demonstrate how PWD can benefit from school-sponsored sport
participation by increasing their exercise with their peers. Transportation is included, at no cost of the parent, throughout a SSES program as long as extracurricular sport is placed on the child’s IEP. They can exercise with peers, the program is school-sponsored, and the school is obligated by law to provide transportation.

Facilitators of PA mentioned in this study included health, fun, and social contacts participants gained from participating in sport. The most frequent responses were support from family members, weight control, and support from rehabilitation professionals (Jaarsma et al., 2014). Sport programs benefit all PWD by increasing physical fitness and exercise opportunities with typically developing peers. Out of the 72% of PWD who remained active, 34% stated fitness was one of their top two activities they enjoyed most while remaining physically active (Jaarsma et al., 2014).

Results from this research imply that persons with VI remain physically active through sport activities within the community. These individuals were 18 and older with a VI and based on the questionnaire ranked fitness as one of their top activities as a PWD. Both personal and environmental barriers and facilitators can be resolved through individuals participating in sport for PWD. The results and implications show PWD need sport programs to become or remain physically active within school-sponsored or community-based sport programs.

Research by Jaarsma et al., (2014) included persons with VI, however, there are athletes with other disabilities who also have personal and environmental barriers. Based on the current research by Huang and Brittain (2006), they proposed to explore the complexity of identity construction for elite disabled athletes within disability sport. Keeping a positive self-identity in a culture that strives for the perfect body image and
beauty is challenging for most people, let alone PWD. Athletes from track and field and powerlifting participated in this qualitative study. Huang and Brittain (2006) administered their survey with participants ranging in age from 22 to 39 years. Researchers stated that in the “…interview process we used a focused life history approach.” This approach is traditionally a qualitative methodology, based on humanistic concerns with individual lives and the importance of subjective perception (Huang & Brittain, 2006).

A woman within the Huang and Brittain (2006) study, discussed how her VI had not stopped her from remaining physically active. The inconvenience and unequal treatment became normal to her. This person belittled herself throughout the interview in discussing how she felt she was seen as “not normal” and disabled. However, other PWD stressed the fact that they are “normal” people and discussed how they are more physically active with a disability than if they were born without one. A female participant explained how PWD cannot do something, not because of their disability, but because of the environmental or social barriers. A male within the study concentrated on how he had to participate in disability sport so he was automatically classified as disabled (Huang & Brittain, 2006).

Throughout the interviews it was evident participants were passionate about what they were doing and what they had accomplished through sport. However, disability sport is not accepted elsewhere like it is in the U.S. Paralympic sport is not recognized due to a lack of interest from others which means a full time athlete within adapted sport is not respected or acknowledged.
These athletes felt a sense of mental and physical self-empowerment, confidence to speak in front of other persons, and developed lifelong relationships with other PWD. Sport can change lives for PWD and allow them to develop physical, psychological, and socialization skills they would never learn by isolating themselves. Sport provides an environment where PWD can challenge their disability by defying the odds society holds against them (Huang & Brittain, 2006).

Results of this study show how a disability may be a fact of life, but does not need to decide the future. Participants in the study defined themselves as disabled, but not incapable. Self-identification and socialization were the main factors that sport provided to these PWD and allowed them to surpass their expectations. Participants discussed how they experienced their own bodies, how society reacted to them, and how sport can increase their development as a future athlete (Huang & Brittain, 2006).

The previous study demonstrates that sport programs for SWD are needed in school districts and can provide more than physical activity. They can provide a social and emotional environment that is positive for PWD.

Jaarsma and Huang discussed about body image, social/emotional aspects, and physical attributes. A study by Foley, Lloyd, and Temple (2013) involving PWD and their health concerns was examined through the Special Olympics International Healthy Athletes Health Promotion database for the calculation of Body Mass Index (BMI). As research indicates, PWD gain weight faster than their typical developing peers. Throughout the study, social, environmental, behavior, and biological determinants of obesity were examined (Foley et al., 2013). Body Mass Index is an important health indicator for PWD. In schools, this information aids educators in identifying when
persons are becoming overweight and/or developing unhealthy habits. In the U.S., rates of obesity in people with intellectual disabilities has been reported higher than the nondisabled population (Rimmer, Rowland & Yamaki, 2007).

The data in this study came through screenings prior to sport competition. The standard Special Olympic protocol prior to competition is to have one professional and two volunteers identify individual height and weight removing any excess clothing that would inhibit these results. Height was determined through a stadiometer and weight was attained with a digital scale (Foley et al., 2013). Data consisted of 6,004 records of 20-59 years old adult athletes between 2005-2010. Individuals were categorized by BMI’s: underweight < 18.5, normal range 18.5-24.9, overweight 25.0-29.9, and obese > 30 (World Health Organization, 2000).

A chi-square analysis was conducted to determine where participants were within the categories regarding weight. In 2005-2006, males between the ages of 20-39 were 4.20% underweight, 28.52% normal weight, 31.81% overweight, and 35.47% obese. Females from ages 20-39 years old were 4.71% underweight, 25.88% normal weight, 23.06% overweight, and 46.35% obese (Foley et al., 2013). In 2007-2008, the males of an age range of 20-39 years old, were 2.73% underweight, 28.83% normal weight, 27.92% overweight, and 40.52% were obese. Females of the same age consisted of 2.03% underweight, 21.50% normal weight, 26.98% overweight, and 49.49% obese. As seen, the individuals throughout the study increased in weight and were categorized as being overweight or obese. Based on the previous data, individuals with intellectual disabilities need to remain physically active to decrease their chance of becoming obese. The Special Olympics is an opportunity for persons with intellectual disabilities,
including DS, to decrease their chances of becoming obese and increasing their communication and socialization skills.

Implications of this study include promoting physical activity and overall well-being PWD. Sport programs should acknowledge and promote healthy eating habits to ensure lifelong nutrition for PWD. All adults with intellectual disabilities, especially women, need to increase their PA. This group presented an obesity rate of roughly 50%. The World Report on Disability (World Health Organization, 2011) recommends enhancing the integration and coordination of education, community-based, and social services to improve health outcomes for PWD.

Although many PWD can improve their health physically and socially, SWD specifically can benefit from SSES. School-sponsored extracurricular sport programs benefit SWD by allowing them to practice skills from physical education and to infuse their physical and social skills in a competitive atmosphere. Students with disabilities can benefit from SSES programs through communication, time management, and socialization skills which will enhance the transition process for these individuals into the real-world. Even though Special Olympics targets all PWD, they have developed a Young Athletes program which focuses on preschool-aged SWD.

As seen by many PWD, there are different sport programs for persons to become physically active with typically developing peers. The effectiveness of the Special Olympics Young Athletes Program, to promote motor development in preschool-aged SWD demonstrate this concept. A total of 233 children participated which were randomly assigned to either the Young Athletes (YA) intervention group (113) or the control group.
Young Athletes which consisted of 24 motor skill lessons delivered 3 times per week for 8 weeks (Favazza, Siperstein, Zeisel, Odom, Sideris, & Moskowitz, 2013). The instructional approach used throughout the study was the Clark’s Model of Motor Development based on the theory by Newell (Favazza et al., 2013). This dynamic systems theory takes into consideration the aspects of the child’s disability, environment of instruction, structure of program, equipment used, and the motor movement needed for specific motor skills (Favazza et al., 2013). Participants consisted of 233 children with an intellectual impairment, 122 (52%) from North Carolina and 111 (47%) from Rhode Island. Researchers also used the Peabody Developmental Motor Scales-2 (PDMS-2) to assess object manipulation skills, stationary skills, and locomotor skills. Perceived benefits of the study examined the more the participant attends the motor development program, the student would improve their balance, motor development and specific sport skill development (Favazza et al., 2013).

Previous research by Goodway and Branta (2003) and Apache (2005) achieved similar results to Favazza’s (2013) study using the Clark’s model and PDMS-2, and found that SWD who participated in a motor intervention program made significant improvements in locomotion and object control skills. Seventy-nine percent of parents of the participants saw developments in coordination, balance, and throwing. The data shows how SWD improved their skills through motor development programs which can translate to physical education and SSES in their future. The results show the instructional approach by a professional instructor over three meetings per week for 8 weeks allowed for repetition for skill development.
The implications of the research by Favazza et al., (2013) shows PA opportunities maximize motor skill development. Early skill development can enhance other developmental areas that are dependent upon these skills, such as walking is the progression of jogging or galloping is the progression of skipping (Brown, Pfeiffer, McIver, Dowda, Addy, & Pate 2009; Seymour, Reid, & Bloom, 2009). It is apparent that SWD need to be provided with opportunities for meaningful PA through motor development programs in order to increase their overall skills. Sport can help athletes develop other aspects of life that are lacking such as socialization, communication, and time management skills.

In society, SWD are seen as different and are often not accommodated appropriately through quality programming, professional staff, and/or equipment modifications. This is further examined in research dealing with Para and Olympic athletes in relation to identification and the impact of this classification on their social and emotional well-being prior to competition (Macdougall, O’Halloran, Shields, & Sherry, 2015).

Sport develops athletes with disabilities throughout the world. Paralympic athletes are compared to sport athletes throughout this article in that they share the ability to “cope with and control anxiety, mental resilience, and have strong support from networks” (Macdougall et al., 2015). Para athletes require coping strategies that Olympic athletes do not encounter such as negative attitudes towards PWD, physical access, communication or financial barriers, and/or lack of professional coaches (Macdougall et al., 2015). These individuals face more psychological and social challenges, versus other Olympic athletes, which add to the pressure of being successful. Throughout this
systematic review, the Lundqvists’s integrated well-being model was used for sport-specific levels to indicate their psychological, subjective, or social well-being (Macdougall et al., 2015).

The 12 studies included athletes with physical impairments and multiple other types of impairments. At least 90% of the sample was required to have a physical impairment as a primary disability. The twelve studies included 454 Para and 734 Olympic sport athletes and ranged in 12 to 58 years for Para athletes and 12 to 38 years of age for the Olympic athletes (Macdougall et al., 2015). Participants competed at the international, national or state level within the study prior to being a Para or Olympic athlete. Sports included basketball, bowling, cycling, fencing, goalball, soccer, swimming, table tennis, weightlifting, and winter sports. Athletes who were identified with a physical impairment consisted of spinal-cord injuries, amputation, and CP. Out of 500 Olympic sport athletes, 259 participants had greater levels of athletic identity and 241 participants revealed the Olympic athletes had ideal body images (Macdougall et al., 2015).

The main finding of the review was the well-being differences between Para and Olympic sport athletes. Specifically, Para athletes potentially have greater “master-oriented motivational-climate perceptions and lower levels of self-acceptance, indicated through athletic identity and body image perceptions” (Macdougall et al., 2015).

Sport improves SWD chances of being included and engaging in organized sport which in return improves lifelong social, physical, and emotional skills. Strengths within the study were developed through Lundqvists’s well-being model which provided Para athletes with opportunities to mentally prepare within the environment and gain self-
acceptance with possible facilitation through targeted motivational strategies (Macdougall et al., 2015).

Implications of this systematic review of Olympic sport athletes were perceived to have higher motivation, lower levels of acceptance, and purpose of life compared to Para athletes. Future studies need larger numbers of athletes, to control these variables, and clearly identify and document the demographic details of participants (Macdougall et al., 2015). As seen in MacDougall’s research, Para and Olympic athletes seek acceptance based on their physicality, however are affected socially and emotionally as well.

Previously mentioned research by Foley (2013), Jaarsma (2014), and Favazza, et al., (2013) has focused on the physical aspects of sport for SWD. However, it is also important to discuss the social and emotional benefits sport has to offer.

Shapiro and Martin (2014) examined the social and emotional aspects of athletes with physical disabilities. Among the 46 athletes with physical disabilities (male = 35, female= 11) between the ages of 12 to 21, one study proposed to determine the quality of friendships, physical self-perceptions, and general self-worth predicted close friendships, loneliness, and social acceptance (Shapiro & Martin, 2014).

The second part of the study examined descriptive information on the quality of friendships inside and outside of a SSES setting, feelings of loneliness, social acceptance, close friendships, athletic competence, physical appearance, and self-worth among young athletes with physical disabilities (Shapiro & Martin, 2014).

In regard to the multiple regression analyses all three equations were significant. Loneliness (p < .001, predicted 57% of variance, close friendships p < .002 with 41% variance and social acceptance of p < 0.05 which was 31% variance) (Shapiro & Martin,
It’s clear the perceptions of athletic competence and self-worth were the most important predictors of loneliness and were the most significant within the results (Shapiro & Martin, 2014). Although these results show that individuals are lonely within typical social situations, sport is a way to influence all SWD to be involved and remain social and positive emotionally while being physically active.

The survey by Shapiro and Martin (2014) identified the need for coaches and educators to collaborate and facilitate friendships between players that can be meaningful and satisfying. Implications show that persons with physical disabilities can be social and physically active with their typically developing peers through sport. The commitment of PWD engaging in sport will improve their PA levels, accomplishments, companionship, enhance expectations for success, and enhance their interest in of joining activities outside of physical education.

Based on previous research articles, SWD can increase their socialization, emotional outlook, and communication skills through being PA, which includes students with DS. Some SWD have low cardiovascular endurance, low muscle tone, and are not reaching professionally recognized standards of PA levels. However, students specifically with DS have low cardiovascular endurance, muscle tone, and live a sedentary lifestyle.

A study examined by Agiovlasitis, Motl, Foley, and Fernhall (2012) determined the relationship between energy expenditure and wrist accelerometer output during walking in person with and without DS. Energy expenditure in metabolic equivalent units (METs) and activity-count rate were measured with portable spirometry and uniaxial wrist accelerometer in 17 persons from ages 21 to 31 years with DS and 21 without DS.
from ages 22 to 31 years. Out of the 17 individuals with DS (9 women, 8 men) and 21 persons without DS (12 women, 9 men) the persons with DS were recruited from a community-based program for persons with developmental disabilities (Agiovlasitis et al., 2012).

Participants attended two exercise sessions examined over a period of 1 to 2 weeks. Three hours prior to activity, the participants were to refrain from food, caffeine, and exercise to ensure they were physically ready to perform the study. During the first session, participants were breathing through a mask connected to a spirometer for 6 minutes (min) of sitting, 6 min of standing, 6 min of walking at the preferred speed, 6 min of walking at the slowest speed (0.50m/s), and 6 min of walking at the fastest speed (1.50m/s). During the second session, participants were asked to walk at 0.50, 0.75, 1.00, 1.25, and 1.50 m/s down a 90m hallway using the mask connected to the spirometer (Agiovlasitis et al., 2012).

According to Agiovlasitis et al., (2012), METs increased during activity and showed a plateau at high level of accelerometer output in participants with DS and without DS. Although their METs increased the speed in which they walked were very different. The rate of activity count was higher only from 1.25 and 1.50 m/s (p < .007) and did not differ statistically between groups at other speeds (p > .05). The individuals with DS were recorded to have higher BMIs based on their short stature. This information can be used to increase the awareness and exposure of how effective SSES will be for students with DS. Based on characteristics of individuals with DS, we need to increase their PA through SSES which will increase their cardiovascular endurance and lower their risk of obesity. Through SSES, we can encourage individuals with DS to
remain physically active and measure their progress throughout practice and gameplay participation.

Implications of this study suggest PA among students with DS needs to increase. For participants with DS, 1,137 and 4,525 counts/min of moderate-intensity were recorded on the wrist accelerometer. Participants without DS averaged 1,526 counts/min however at a moderate to vigorous intensity. Different types of assessments will help determine the relationship between PA, health in students with DS, and ways to incorporate SSES to fulfill their needs.

Based on the research provided, PWD, including individuals with DS, need to increase their cardiovascular endurance, increase their awareness of nutrition and take the initiative of being physically active for the daily recommended amount. School-sponsored extracurricular sport programs allow for PWD to be engaged in PA like their typically developing peers. A SSES program will increase their participation in community-based programs as adults. Persons with disabilities and individuals with DS need SSES sport to enhance their energy expenditure and increase their overall fitness levels.

**Benefits of Sport Participation for Individuals with Down Syndrome**

The average life-expectance of an individual with DS has increased into the middle 50's (Smith, 2001) and a person with DS has been reported to have lived to 83 years old (Diament, 2012). Students with DS need to be motivated to become physically active to increase life expectancy. When performing PA adolescents (ages 12 to 18) should engage in at least 60 minutes of moderate and vigorous activities each day.
Throughout the week, a person with DS should have at least 20 minutes or more of vigorous activity at least 3 out of 5 days of the week (Shields & Blee, 2012).

According to Smith (2001), 70% of adults with DS have sensorineural hearing loss, which leads to poor communication skills. Students with DS have trouble communicating due to hearing loss which can eventually lead to sensory deprivation. Although students with DS attend frequent health screenings Smith (2001) stated that 50% of students with DS experience obstructive sleep apnea. Sleep apnea can cause external behaviors or lack of encouragement to be physically active. Throughout research by Smith (2001), sleep deprivation will decrease a student’s willingness to engage or remain engaged in PA. The health concern for students with DS may lead to a sedentary lifestyle, but through a SSES we can decrease their chances obesity through PA.

Students with DS are recommended to have 60 minutes of moderate to vigorous physical activity level (MVPA) every day. A study examined by Shields, Dodd, & Abblitt (2009) of 23 participants with DS (7 girls, 16 boys) wore a triaxial accelerometer for seven consecutive days to measure their PA levels. As the age progressed for participants, PA levels decreased (Shields, Dodd, & Abblitt, 2009). As pointed out in research, “45% of males and 56% of females with DS are overweight” (Rubin, Rimmer, Chicoine, Braddock, & McGuire, 1998). Based on previous research, it is especially important for children with DS to adhere to minimum recommended physical activity guidelines (Shields, Dodd, & Abblitt, 2009).

Throughout the study, 21 individuals with trisomy 21 and one child with mosaic DS participated. Physical activity was measured over 7 consecutive days using an RT3 accelerometer. The average amount of MVPA the students completed each day was 104.5
minutes. Only 8 children (42.1%) undertook at least 60 minutes of MVPA each day for 7 days. Three children (15.8%) met the guidelines on 6 out of 7 days, 5 children (26.3%) met the guidelines on 5 days, 2 children (10.5%) met the guidelines on 4 days, and one child (5.3%) met the guideline on only 2 days (Shields et al., 2009).

The results demonstrated the average amount of PA was 22.9 minutes, but the students did not perform 20 minutes of continuous vigorous PA 3 times a week. The results indicate that students with DS did not remain physically active for at least 20 minutes a day of moderate to vigorous PA for at least 3 days a week. This shows that students with DS need to increase their cardiovascular endurance by remaining physically active more than one day per week.

Implications show students with DS may not perform enough PA to maintain good health. School-sponsored extracurricular sport increases the amount of moderate PA they can perform each day through practice and competition. Through SSES programs, students with DS can reduce the risk of coronary artery disease and obesity in adulthood (Shields et al., 2009). Acknowledging students with DS need to be physically active is essential to increasing their physical fitness, however, safety concerns are always the first priority when participating in SSES programs.

A recent study examined by Sanyer (2006) reviewed students with DS and their participation sport. Students with DS need to go through a screening process by a physician with guidelines for particular activities. The screening process provides a student with DS a safe opportunity to participate in sport. The screening process is a safety precaution for the SWD to participate in sport. Students with DS have greater risk
of obesity and have been shown to have low cardiovascular capabilities, even when congenital cardiac differences are not present (Sanyer, 2006).

The screening and acknowledgement of characteristics involving students with DS provides information for the SSES program staff working with the students. Throughout the screening, physicians identify atlantoaxial (AA) as one of the most common instabilities an individual with DS will encounter. It is recommended that students with DS that have AA be restricted from sport participation involving contact sports, however, a student with DS can participate with typically developing peers in SSES with modifications to meet the student’s needs. The Special Olympics organization has required routine radiographic screening for AA in all athletes with DS since 1983 (Sanyer, 2006).

Physicians caring for students with DS are in a position to assess their mental, emotional, and neurological impairments (Sanyer, 2006). Students with DS are susceptible to social and emotional breakdowns depending on the individual and any secondary disabilities this individual may encounter. According to Sanyer (2006), training and being physically active through sport by modifying equipment and environments for students with DS has been seen and used throughout sport programs.

Implications of this study suggest participation in sport is encouraged by family members, teachers, and other caregivers. Students with DS are frequently associated with orthopedic and cardiovascular findings that can affect their exercise tolerance and personal safety through sport (Sanyer, 2006). Students with DS will increase their PA and gain social and emotional stability through SSES while developing lifelong skills.
Students with DS are known for living sedentary lifestyles. However, Ulrich (2011) points out that with high expectations comes high results. Results suggested that expectations could inspire students with DS to learn how to ride a two-wheel bike and as a result, decrease sedentary lifestyle and increase their time spent in moderate to vigorous activity levels (MVPA) (Ulrich, 2011).

Over a 12-month period a total of 72 students who had DS who were 8 to 15 years of age were enrolled and randomly assigned to the experimental or control group. To evaluate the students’ capabilities prior to riding a bicycle, a series of tests were used to test their strengths (Ulrich, 2011). Leg strength, balance, and stamina were used to evaluate the students with DS. Intervention was provided by the Lose the Training Wheels Organization, which is a trained staff with professional experience with students’ cognitive disability (Ulrich, 2011).

Training involved 75 minutes each day for 5 days. During these sessions students with DS were taught to ride a two-wheel bicycle. Individuals monitored their progress after the training through the Lose the Training Wheels Organization (Ulrich, 2011). Individuals with DS engaged in 75 minutes of PA through learning how to develop a lifelong activity, this is also seen through SSES programs. Being physically active, understanding the time commitment for practice, and engaging in activity with their peers outside of school hours are what these programs can provide (Ulrich, 2011).

The results demonstrated that students with DS were less likely to engage in PA without their typical developing peers within a new, unfamiliar activity (Ulrich, 2011). Students with disabilities enjoy participating in sport and new activities with peers and others who are interested in being active with them. School-sponsored extracurricular
sport allows for students with DS to interact with each other and become comfortable with peers in a competitive environment.

Implications of Ulrich (2011) shows that acquiring skills in other physical activities, such as “…dance, swimming and martial arts…”, should improve participation, functioning, and health-related outcomes for future PA engagement (Ulrich, 2011). By increasing the family involvement, results of the study would increase to ensure the MVPA of the students with DS was more frequent. Although riding a bicycle increases an individual’s PA levels, students also can learn many disciplines while participating in PA with their peers.

A study conducted by Balan and Marinescu (2015), suggested students benefited from positive influences through sport during and after practicing multiple disciplines. Researchers developed a questionnaire that consisted of 18 questions: 7 of them closed answers, 2 alternative responses, and 9 free response questions.

Based on 140 responses from students with DS (66 girls and 74 boys), 41 students from ages 13 to 21 stated they “…liked the sport discipline, and felt better when they were practicing and being active” (Balan & Marinescu, 2015). School-sponsored extracurricular sport allowed for the individuals with DS to interact and communicate with peers during activity. Not only did students with DS communicate with their peers better, but they were communicating because they felt more confident around nondisabled peers (Balan & Marinescu, 2015). Implications indicate that sport increases the social inclusion and communication skills between students with DS and typically developing peers.
Parents were asked about their child’s “progress and results in practicing sports” and 68% of parents saw an improvement in their behavior management skills and body composition (Balan & Marinescu, 2015). Overall, the study shows how students with DS can become socially engaged in the community through an organized and well developed SSES program.

Previous research articles described the benefits of SSES for SWD and the effect of sport had on these individuals in multiple areas including physical, emotional, and social. The importance of developing SSES programs for SWD to address the obesity rate in this population cannot be overstated.

Love and Agiovlasitis (2016) conducted a study interviewing 30 persons with DS. The participants ranged from ages 18 to 71 years (18 women and 12 men) and were interviewed to examine their perceptions of PA, exercise, and sport. Interviews ranged from 5 to 60 minutes depending on the speech impediment from individuals with DS. Through qualitative analysis, investigators found persons with DS had positive perceptions of PA and the promotion of overall health. Although persons with DS have reported that exercise has physical and psychosocial health benefits, these individuals face many cognitive-emotional barriers including lack of energy, exercise being boring, and exercise being too difficult (Groff et al., 2009).

Research has revealed that persons with DS, parents, and caregivers recognizing sport to have positives and negatives based on prior experiences within SSES (Love & Agiovlasitis, 2016). Research has shown barriers include lack of support, economic barriers, and lack of programs. Although there are barriers that withhold athletes from participating in sport, there are facilitators that increase person’s interests in sport.
Facilitators that allowed for persons with DS to gain interest in sport included support from others, professionals making exercise meaningful and fun, purposeful physical activities, awards, routine, and socialization (Love & Agiovlasitis, 2016). Persons with DS can grow as an individual in sport through socialization skills and develop behavior management skills while being PA.

Implications within Love and Agiovlasitis (2016) show how persons with DS are benefitting from sport and continue to enhance their physical, social, and emotional aspects of life through PA. Support from professionals, parents, caregivers, and peers will enhance persons with DS and their abilities to grow within SSES. It should be pointed out when PA levels are low, participants expressed enjoyment in PA through sport participation.

**Parent Perceptions Related to Participation in Sport for Students with Disabilities**

Parents of SWD need to understand these individuals need to be physically active. By engaging in PA through sport, SWD can learn that physical fitness can increase their cardiovascular endurance and decrease their risk of obesity. Parents of SWD need to change their sedentary lifestyle and create a physically active environment at home, outside of school hours.

A study by Curtin, Bandini, Perrin, Tybor, and Must, (2005) found that students with ASD show a 36% risk of being overweight between ages 2 to 19 years old and 19% were overweight. Physical activity is important for all SWD in creating healthy life habits. Students with ASD, like most individuals with disabilities, do not meet the U.S. Department of Health and Human Services (2010) daily recommended amount of PA of 60 minutes of moderate to vigorous PA every day or 20 minutes of vigorous activity at
least three days per week. Students with disabilities, including those with DS, are increasing in weight and need to remain physically active in order to decrease their chance of obesity. By being physically active from a moderate to vigorous level, SWD will increase their fitness levels and decrease their health-related risks.

Research by Obrusnikova and Miccinello (2012) focused on parent perceptions of the benefits of PA and the factors that influence participation of children with ASD in PA after school. The online survey consisted of 103 parents that responded with many different advantages, disadvantages, facilitators, and barriers associated with after school PA. Parents felt that PA becomes a chore rather than an extracurricular activity that their child looks forward to (Obrusnikova & Miccinello, 2012).

The lack of time and schoolwork demands created a time constraint for parents when determining how a SSES program would fit into their schedule. One mother stated “By the time he is done with his homework and wasting time procrastinating over doing homework, it is dinnertime and too late for him to play” (Obrusnikova & Miccinello, 2012). Parents also described their child with ASD as becoming frustrated during social communication because the child is focused on their favorite topic of choice. Six parents reported that they used their child’s favorite sedentary activities as a reward for completing PA (Obrusnikova & Miccinello, 2012). Physical activity is an opportunity for students with ASD or other disabilities to interact with their peers through physical and social activity in an SSES program.

Interviewees cited that 82% of them do not always have the time, energy, or patience to support or engage their child with ASD in PA (Obrusnikova & Miccinello, 2012). An SSES program developed for SWD to become physically active after school
helps to develop a routine and provides an energy outlet. Parents stated that students with ASD require too much attention from their parents who have full-time jobs, other responsibilities at the house, transportation, and needs as well as the added challenge of helping the child to be motivated to be physically active. This may ultimately drive parents to avoid exploring PA with their child.

A third of the parents’ report that availability and quality of resources in or outside of their house promotes their child’s motivation for PA (Obrusnikova & Miccinello, 2012). Extracurricular sport programs can be developed so activities are practiced and played inside a fieldhouse or gymnasium. These sports are modified for individuals who need adaptations to equipment, however, the rules remain the same for all individuals. Researchers specifically asked parents what the U.S. Department of Health and Human Services daily recommendation of PA was for individuals with disabilities. Of 11 parents, only one answered correctly (Obrusnikova & Miccinello, 2012). Parents need to be made aware of the recommended PA levels and schools need to provide school-sponsored extracurricular programs to avoid all of the barriers and disadvantages parents described in this research.

In summary, the study reported positive beliefs about participation for children with ASD in PA after school. Parents of individuals with ASD want to limit their sedentary lifestyles through PA. However, parents need to advocate for their child’s PA and participation in PA outside of school.

Implications of this study suggest that findings can apply to other individuals with disabilities. Parents want PA programs for SWD outside of school hours, to increase the overall PA levels of their SWD. Schools need to provide resources that meet the needs
and interests of all participants to continuously and actively engaged in PA outside of school hours.

School-sponsored extracurricular sport is typically coached by members of the special/physical education department and adapted physical education teacher, which have the professionalism to keep the participants successful and safe. One goal of adapted physical education (APE) teacher is for children with disabilities to transfer the skills they learned in the gym to their community. In the community we want parents to use extracurricular sport as a way for their child to stay involved in physical activity. Making parents aware of SSES programs and ways to be PA outside of school will benefit their child with a disability.

Research by Columna et al., (2008) was used to examine 11 parents (8 women, 3 male) and their expectations for their child in APE. A qualitative design was used when asking the parents research questions. Three out of five questions regarding sport for individuals with disabilities describe parent expectations based on their child’s physical, social, and affective domains and transitioning into community sport programs. The participants were mostly Hispanic which resulted in many Spanish speaking parents, requiring translation by an external translator.

A parent discussed how the APE teacher rarely spoke with the parents and after a 6-week report would converse with the families about the child’s progress in physical education. In extracurricular sport the parents should always be informed regarding what and how their child is performing physically, socially, and emotionally. A few parents spoke negatively about APE and how the skills practiced during school hours were never used outside of school. Sport is a great opportunity for these individuals to become
physically active with their peers and continue to use these skills to benefit their overall well-being (Columna et al., 2008).

A participant discussed how school-based physical activity needed to translate to the community in order to benefit those with disabilities in their future. A lack of sport programs within the area held parents back from attempting to join an extracurricular sport program. Multiple parents discussed how they “…wish there were adapted sport…but driving is not an option.” The financial constraints on families to get their children to sport programs continues to be a major barrier which APE teachers must acknowledge and address including SSES on the individuals IEP may be a start to ensure the service will be provided. Finally, the last parent interviewed discussed how she believes sport, practicing a sport… such as baseball and joining other leagues would benefit the child tremendously (Columna et al., 2008).

The results indicated the parents lacked the knowledge of how to motivate their child to become involved in a sport program. Parents all stated they wanted their child to be held to high expectations. Transitioning from school to community activities such as sport, was noted’ as an area of necessary focus in the APE curriculum. If APE professionals can share their knowledge with parents, it may help facilitate access to extracurricular sport programs and enhance the quality of life in the three domains, for individuals with disabilities and their families (Columna et al., 2008).

The study shows that parent’s perceptions vary based on disability and whether their child was high or low functioning. The findings showed that APE teachers need to communicate and provide more program opportunities for individuals with disabilities to translate what they are learning in the schools to the community. Parents want these
programs their child’s district and for sport to influence their child’s social and physical well-being.

Children with physical disabilities often participate less in sports than children without disabilities. A study by Jaarsma et al., (2014), describe how sport can decrease the chance of type 2 diabetes, obesity, and increase personal autonomy, community integration, and life satisfaction of children with physical disabilities. Thirty children and 38 parents completed a questionnaire in regards to participation in sport for individuals with physical disabilities. Likewise, 17 professionals were interviewed regarding participation in sport for individuals with physical disabilities. Based on the data, 67% of children had CP and 77% participated in after school sport.

Many similar barriers of participation in sport programs related to that of previous research findings (Obrusnikova & Miccinello, 2012) such as physical, social, and cognitive demands of sports, transportation, lack of information lack of equipment, lack of time, and costs (Jaarsma et al., 2014). These barriers to participation speak to the need for sport programs to be developed to increase the availability of sport after school. This would limit the barriers by having the extracurricular sport program school-sponsored, no transportation needed, equipment and facilities provided, and individuals with physical disabilities could increase their physical, social, and cognitive demands through sport.

Based on the results, only 25% of children with physical disabilities participated in sport after school at least once per week. Most likely, active individuals with disabilities were more interested in the survey than inactive individuals with disabilities. If the study included all of the active children in the school, only 19% of the children of
the school participated in sport after school. This number needs to increase to provide equality for individuals with disabilities through school-sponsored sport programming.

Implications of this study demonstrate the concerns parents of individuals with physical disabilities have for their child’s physical, social, and emotional well-being, and the importance of participation. The barriers holding parents back from these programs are related to the lack of quality programs for their children. A well-developed program can lead to increasing all of the benefits of sport and decrease the parents’ concerns regarding lack of time, transportation, and costs.

Individuals with DS have low fitness levels, which has increased obesity levels. Through physical activity and sport participation these individuals can increase their awareness of a healthy lifestyle through cardiovascular endurance, social skills, and controlling their personal emotions during competitive practice and gameplay.

In a study by Menear (2007), parents were interviewed regarding their child with DS and overall health and physical activity levels. Participants range from preschool to adolescent ages. Common themes revealed from the study included that all parents believed participating in PA would benefit their child immediately and long-term. The parents observed that their child participated in physical activity for social reasons as well as to participate with peers both with and without DS. Parents also acknowledged that without motivation from others their child would live a sedentary lifestyle (Menear, 2007). Parents identified a need for individual and team sport opportunities that do not required ability-matched teammates and opponents as well increasing the community-based physical activity programs for individuals with DS (Menear, 2007).
Parents of teenagers with DS from ages 14 to 22 participated in a focus group interview to discuss their child’s participation in physical activity and sport outside of school. “All of their children wanted to participate in inclusive activities and refused to participate in special needs activities such as Special Olympics” (Menear, 2007). Adolescents with DS want to be involved in physical activity that is structured with individuals who compete at the same ability level. Sport is a realistic way for individuals with DS to be physically active with their peers and develop a sense of becoming independent.

One parent described how her child wants outs and for a score to be kept when playing baseball through a competitive atmosphere. Parents admit to their child not being physically fit or as athletic as their nondisabled peers, but they want to be on equal playing fields with their peers (Menear, 2007). Another mother stated that if someone would have told her to get her child involved in an individual sport it would have helped her child’s physical activity level increase. These individuals would rather compete against each other instead of relying on finding other teams locally to compete against. The mother stressed her concern for her daughter’s long-term health and how her child has progressively slowed down from age 10 to age 15, as far as being physically motivated. Based on these results, sport can motivate a child to be physically active with their peers within a SSES program.

Parents expressed their desire for programs that better meet their child’s needs and suggested participation in individual sports may provide success, increase self-esteem, opportunity for leisure activity times, and health-related benefits. Additional research by Draheim, Williams, and McCubbin (2002) found 17 of 23 characteristics of
PA reported by their participants was performed within an individual sport. However, the highest percentage of study participants recommended team sports and dual sports for individuals with DS (Menear, 2007).

Menear (2007) demonstrated that parents want sport programs for their child with disabilities. Parents of teenagers with DS want different types of programs to meet the needs of the child by participating an SSES. In order to reduce sedentary lifestyles, low levels of fitness, and decrease the obesity rates of individuals with DS, individuals with DS need to be involved in extracurricular sport programs.

As reported by Menear (2007), individuals with DS do not receive the recommended daily amount of physical activity. Barr and Shields (2011), further examined this concept by interviewing 20 different parents (16 mothers, 4 fathers) of individuals with DS ranging from 2 to 17 years of age. Participants were chosen through a community disability organization for individuals with DS. According to Rimmer, Rowland & Yamaki (2007) physical activity and sport improve health. Physical activity can also prevent chronic disease, increase self-esteem and promote social interaction (Jobling, 2001) (Barr & Shields, 2011). Reports show that lack of programs prohibit individuals with DS and other disabilities from having the chance to engage in sport for physical activity.

Barr and Shields (2011) examined 20 participants who put physical activity in categories and created sport as a separate category. Physically, structured programs allow for attention, guidance, motivation, and adaptations. Socially, these programs provide individuals with DS a reason to join a program and engage in activity with peers. Peers provide encouragement, opportunity for imitation, and give the skills learned throughout
physical education a purpose during sport (Barr & Shields, 2011). When parents enjoyed sport, the individual with DS understood the importance of fitness and activity which positively influenced their participation within community activities. Parents and siblings need to have a positive influence for individuals with DS with relation to participation in sport. This provides the individual with more opportunities in their future. Individuals with DS try to emulate their peers through sport and this allows for them to practice their skills outside of school hours.

Structured programs that can make adaptations for individuals with DS include sport participation, ensures participants are receiving direct attention, and provide guidance from a trained professional. Both individual and team sport activities can be used to influence individuals with DS to become physically active within the community and outside of school hours (Barr & Shields, 2011). Extracurricular sport can help develop success in individual and team sport depending on the student’s specific needs. Parents expressed their concern with the marketing of sport programs for their child with DS because programs receive and a negative stereotype of including individuals with DS in sport, which led to less promotion of a quality program.

Parents who were willing to enroll their child with DS into a sport program stated there was a lack of staff, time restraints, education, advertising, and less proactive in sourcing out programs so they did not feel welcomed. Research shows 58% of Australian children with DS do not partake in enough physical activity (Shields, Dodd, & Abblitt, 2009) which indicates individuals with DS need sport programs to become physically active outside of school (Barr & Shields, 2011).
Implications of Barr and Shields (2011) show that parents of individuals with DS understand the physical and social benefits of sport. The parents want programs to be advertised and represented to the same extent as other athletic teams are promoted throughout the school district. The benefits outweigh the barriers for joining sport programs, however, parents need professionals who develop quality sport programs.

**Summary and Conclusions**

Over 44 million children participate in youth sports as an extracurricular activity (Dorsch, Smith, Wilson, & McDonough, 2015). Based on the results of Dorsch et al., (2015), it is very apparent that parents play a major role in their children’s sport participation. Despite the popularity of youth sport, SWD participate in sport less than their nondisabled peers which limits their PA levels, socialization with their peers, and increases their chances of living sedentary lifestyles.

Parents of SWD, including those of students with Down syndrome, need to influence their child to be physically active and build health-related fitness into their daily routine. Developing life skills such as social and emotional skills through an SSES is a major reason for these programs within school districts. Extracurricular sport brings families, coaches, schools, and communities closer. With proper PA, SWD can reduce the risk of multiple health-related risk factors and increase cardiovascular endurance, while reducing obesity.
REFERENCES


