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THEIR NEUROTYPICAL PEERS

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Running Head: SOCIAL IMPACT OF PARTICIPATION IN RECREATIONAL ACTIVITIES

The Social Impact of Participation in Peer Supported Recreational Activities on Individuals with  
Autism Spectrum Disorder and their Neurotypical Peers

by

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## SOCIAL IMPACT OF PARTICIPATION IN RECREATIONAL ACTIVITIES THESIS ABSTRACT

Children with Autism Spectrum Disorder (ASD) experience difficulties in social interactions, communication, and engage in restricted, repetitive behaviors or interest (Harstad et al., 2014; Neal & Hattier, 2012). These symptoms may hinder a child's ability to develop and maintain quality friendships. Children with ASD have a harder time making friends compared to their, neurotypical peers. These hindrances may be stemming from core social-cognitive difficulties and ASD symptoms (De Boer, Pijl, Post, & Minnaert, 2013). Recreational activities may provide an important social context for children to develop these social skills and friendships. Current research has found that recreational activities have influenced neurotypical children's personal and social skills, including self-perceptions, positive social behaviors, feelings and attitudes (Durlak et al., 2010). Neurotypical peers may find it difficult to interact with and include peers with ASD due to many of the symptoms of ASD. Research has found that various peer-training programs can create more inclusive environments and promote more social initiation from children with ASD (Owen-DeSchryver et al., 2008). As these programs are not readily available for all, many parents seek out additional social opportunities, in the form of peer supported recreational activities, that might facilitate connections. Many neurotypical peers do not have access to or would not be interested in peer training programs, however may be drawn to participating in a less structured recreational activities environment where peer acceptance can also be developed. The purpose of this study is to explore the impact of participation in peer supported recreational activities on individuals with ASD's friendship quality and social skills, and their neurotypical peers' peer acceptance.

**KEYWORDS:** Autism Spectrum Disorder, Friendship Quality, Peer Acceptance, Peer Supported, Recreational Activities, Social Skills

## SOCIAL IMPACT OF PARTICIPATION IN RECREATIONAL ACTIVITIES

### Acknowledgement

*When I was 15 years old, he knocked on my door and guilted me into signing up to be a buddy. One first day of the season I attend out of pure obligation, what I encountered on that first day made me return for 3 years. The Moonlight Basketball program had a transforming effect on my personality and outlook on life. I would not be the person I am today without the experience I had those 3 years. I hope this thesis inspires others to continue to research how we can improve the quality of life of those with ASD and other disabilities through creating inclusive communities. I also hope the voices of the young people I was able to share serve as a sign of hope that one day individuals with disabilities will be accepted and included because there is a new generation of advocates that is more passionate than ever before.*

**“Different not Less” - Temple Grandin**

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I would first like to thank my grandparents, Salvador and Martha. I will forever be grateful for the sacrifices they made to bring their children to the United States of America. I am a proud first generation college student and the opportunities I had would not be possible without the hard work of my loving grandparents. I would like to thank my mom, Erika, for teaching me what determination, hard work, and perseverance look like. To my dad, James, thank you for always listening to me share my passion of working with underserved youth. To my siblings, I hope I have inspired you both to use your privilege to be a force for good, an advocate for all, and to follow your passion. To Kevin, thank you for your love, support, and patience throughout these last six years, but especially these past two. To my friends, Ymonne, Taylor, and Bryan, thank you for listening to my worries, encouraging me, and calming me down in my moments of stress. Thank you to Dr. Baker and Dr. Fenning for engaging me in the world of research. I would like to thank my Chair, Dr. Robledo, and Committee Member, Dr. Brooks, for being supportive through this whole process. I would also like to thank some of the educators who have inspired me over the years: Mrs. Heart, Mrs. Greene, Ms. Yeo, Mr. Coleman, Mrs. Harris, Ms. Waugh, Mrs. Brice, Mr. Resultan, Mrs. Markgraf, Mr. Ramirez, Mr. Montooth, Mr. Baker, Mr. Guseman, Mr. Billings and the late Mr. Lenny Preyss.

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## Chapter One: Introduction

Individuals who struggle with social skills may have trouble developing and maintaining quality friendships, leading them to become lonely due to their inability to fulfill their desire to have peer relationships (Asher, Parkhurst, Hymel, & Williams, 1990; Locke, Ishijima, Kasari, & London, 2010). Individuals with Autism Spectrum Disorder (ASD) are at significant disadvantage due to their difficulties in social interactions, communication, and engagement in restricted, repetitive behaviors or interests (Baio, 2014; Harstad et al., 2014; Neal, Matson, & Hattier, 2012). Individuals with ASD struggle with social skills, which hinders their ability to develop and maintain friendships (Chamberlain, Kasari, & Rotheram-Fuller, 2007; Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011; Locke, Kasari, Rotheram-Fuller, Kretzmann, 2013; Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010). Social challenges and lower friendship quality may label individuals with ASD as outliers in peer social networks (Chamberlain et al., 2007). The social status of individuals with ASD paired with their social challenges causes neurotypical peers to have a lower peer acceptance rate of individuals with ASD (Chamberlain et al., 2007).

Recreational activities have numerous benefits including improved social skills, increased friendships, and higher rates of peer acceptance (Buttimer & Tierney, 2005; Cowart, Saylor, Dingle, & Mainor, 2004; King et al. 2003; Law et al., 2006; Modell, Rider, & Menchetti, 1997; Weiss, Diamond, Demark, & Lovald, 2003). However, many individuals with ASD are not heavily involved in recreational activities. When individuals with ASD are involved they are usually simply physically integrated with parents or adults as supports (Hughes et al. 2002; Lord & Hopkins, 1986; Solish, Minnes, & Kupferschmidt, 2003). When individuals with ASD are socially integrated with their neurotypical peers, there are significant benefits for both

populations involved in the interactions (Hughes et al. 2002; Lord & Hopkins 1986). This chapter will provide information regarding the purpose and significance of the research and a preview of the literature and methodology.

### **Purpose of Research**

Opportunities for individuals with ASD to learn social skills and develop friendship alongside neurotypical peers may create communities with lower rate of loneliness and higher rates of peer acceptance in youth. The purpose of this study is to explore the impact of participating in peer supported recreational activities on both the individuals with ASD and the neurotypical peers providing support. The study also hopes to examine what characteristics make a peer supported recreational activity effective. Specifically the study will try to answer the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?

The current study will use a peer supported recreational activity, Moonlight Basketball, as the focus for attempting to answer the research questions. Moonlight Basketball is an inclusive basketball program designed for children ages 5-22 with a variety of disabilities, including ASD, to learn and enjoy the game of basketball in a fun, non-competitive environment. One unique factor of Moonlight Basketball is their philosophy of using peers to support individuals with disabilities as they participate rather than parents or paid support providers. The current study will examine the association between parent reports of children's friendship quality

and involvement in Moonlight Basketball. Friendship quality will be determined by a parent report of the number of non-related friends of the children, the amount of time children spent with friends, the percentage of friends made through Moonlight Basketball, and the amount and type's activities participated in together. This study will also investigate the association between parent reports of children's social skills and involvement in Moonlight Basketball. Parents will be asked to report on how the involvement in Moonlight Basketball impacted their child's cooperation, empathy, engagement, communication, and emotion regulation to provide a measure of their social skills. The current study will also examine relationship between neurotypical peers' self reported peer acceptance and involvement in Moonlight Basketball. Neurotypical peers' will be asked to report how their involvement as a peer support has impacted their patience and confidence when interacting with individuals with disabilities. Neurotypical peers will also be asked how their involvement as a peer support has changed their likeliness to interact with, include, bully, and stand up for individuals with disabilities. The study will also examine the relationship between the qualities and characteristics of the program and its effectiveness reported through the perceptions of program directors and participants including, neurotypical peers and parents.

### **Preview of Literature**

Children with ASD experience difficulties in social interactions, communication, and engage in restricted, repetitive behaviors or interest (Harstad et al., 2014; Neal et al., 2012). These symptoms may hinder a child's ability to develop and maintain quality friendships. Children with ASD have a harder time making friends compared to their neurotypical peers, these hindrances may be stemming from core social-cognitive difficulties and ASD symptoms (De Boer, Pijl, Post, & Minnaert, 2013). Current research has found that recreational activities

have influenced neurotypical children's personal and social skills, including self-perceptions, positive social behaviors, feelings and attitudes (Cowart et al., 2004; Durlak et al., 2010; Law et al., 2006; Modell et al., 1997). Recreational activities may provide an important social context for children with ASD to develop these social skills and friendships. Neurotypical peers may find it difficult to interact with and include peers with ASD due to many of the symptoms of ASD. Research has found that various peer-training programs can create more inclusive environments and promote more social initiation from children with ASD (Owen-DeSchryver, Carr, Cale, & Blakeley-Smith, 2008). Many neurotypical peers do not have access to or would not be interested in peer training programs. However, neurotypical peers may be drawn to participating in a less structured recreational activities environment where peer acceptance can also be developed through direct interaction with individuals with ASD. Recreational activities may provide an important social context for children with ASD to develop social skills and friendships and for neurotypical peers to develop peer acceptance.

### **Preview of Methodology**

The research study will focus on qualitative data gained through interviews of the two program directors of Moonlight Basketball, four parents of individuals with ASD who participate in Moonlight Basketball, and four neurotypical peers who support individuals with ASD in Moonlight Basketball. The parents being interviewed will have a child with ASD that fits into one of the following of four categories: (1) verbal child who is new to the program, (2) verbal child who is a veteran to the program, (3) less verbal child who is new to the program, (4) less verbal child who is a veteran to the program. The neurotypical peers being interviewed will have to provide support to a peer with ASD that fits into one of the following of four categories: (1)

verbal child who is new to the program, (2) verbal child who is a veteran to the program, (3) less verbal child who is new to the program, (4) less verbal child who is a veteran to the program.

For the purpose of this study being new to the program will be categorized as one to two seasons in Moonlight Basketball, while a veteran will be categorized as three or more season in Moonlight Basketball. A season will be defined as the length of time Moonlight Basketball runs continuously. In this case, it will be every Sunday for nine weeks. For the purpose of this study children with ASD who are in the less verbal category will be defined as children who have few words or only uses simple sentences compared to their neurotypical peers. On the other hand, children with ASD who are in the verbal category will be defined as children who are able to speak in full sentences.

The interviews will be used to collect a variety of information from the program directors, parents, and peers. The directors will be interviewed to collect information about the qualities and characteristics of their peer supported program, Moonlight Basketball. On the other hand, parents will be interviewed to collect information about their children's social skills, friendships, and impact of being involved in a peers supported program. Lastly, peers will be interviewed to collect information about their social interactions, peer interactions, and impact of being involved in a peers supported program. The interview responses will be analyzed by locating common themes articulated by directors, parents, and peers.

### **Significance of Research**

The current research study may provide information for the Autism community, future research, and future recreational programs. Many parents of individuals with ASD seek out a variety of recreational activities, however at time may struggle to find programs that best fit the needs of their children. The current study will examine the characteristics of a peer supported

recreational activity. Program directors could potentially use the positive, negative, and neutral characteristics discussed in this study to develop, improve, or adapt their current recreational activity. Much of the current research on recreational activities focuses on the impacts for the neurotypical population involved. This study will examine if friendships are developed and if social skills are learned through individuals with ASD's involvement in the recreational activity. The results could impact the Autism community by shedding light on the impact of peer supported recreational activities and allowing parents to determine if similar programs may have any significance for their child's social skills and friendship quality. While much of the current research focuses on neurotypical peer acceptance by measuring involvement in school activities or training programs, this study examines the impact of neurotypical peer acceptance by their involvement in a volunteer based recreation program in a more natural environment. These results could potentially guide how communities and schools decide what programs to use in order to improve peer acceptance. Overall this research will provide a snapshot of whether or not peer supported activities have an impact on individuals with ASD and their neurotypical peers.

### **Conclusion**

Due to social deficits and lower peer acceptance, individuals with ASD struggle to develop quality friendships. Participating in recreational activities provides individuals with ASD with the opportunity to develop social skills and friendships (Buttimer & Tierney, 2005; Cowart et al. 2004; King et al., 2003; Law et al., 2006; Modell et al., 1997; Weiss et al., 2003). The benefits of participating in inclusive recreational activities may also improve neurotypical peers' acceptance rate of individuals with ASD.

Recent research on recreational activities focuses on the benefits for the neurotypical population. However, this study will bridge the gap by also looking at the benefits to individuals

with ASD. This study will also examine the impact of recreational activities on neurotypical peer acceptance, rather than more structured peer mediated trainings. The purpose of this study is to research the effects of participation in Moonlight Basketball on individuals with ASD and their neurotypical peers, while also exploring the effectiveness of the characteristics and qualities of Moonlight Basketball. This research study will attempt to answer the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved? The results from this research study may be useful to members of the Autism community, future researchers, and future recreational programs directors. Future or current program directors could utilize the qualities and characteristics discussed in this study to develop or improve their current recreational activity. Parents and researchers gain information about the impact of participating in peer supported recreational activities for both the ASD and neurotypical population. The following chapter will provide an in-depth overview on the current research regarding individuals with ASD, their social skills and friendship quality, the impact of recreational activities, and the peer acceptance rates among neurotypical peers.

## Chapter Two: Literature Review

Autism Spectrum Disorder (ASD) is characterized by challenges in social communication and interactions, and engaging in restricted, repetitive behaviors or interests (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). Individuals diagnosed with ASD struggle with social skills, which become a hindrance in the area of developing and maintaining friendships (Chamberlain et al., 2007; Kasari et al., 2011; Locke et al., 2013; Rotheram-Fuller et al., 2010). Research shows that individuals with ASD frequently have a low peer acceptance rate from their neurotypical peers (Bauminger, Shulman, & Agam, 2003; Chamberlain et al., 2007; De Boer et al., 2013).

Recreational activities may provide individuals with ASD a context to be socially integrated. The benefits of participating in recreational activities include improved social skills and increased friendship (Buttimer & Tierney 2005; King et al. 2003; Law et al., 2006; Modell et al. 1997; Weiss et al., 2003).

The purpose of this study is to investigate the impact of participation in peer supported recreational activities on individuals with ASD and their neurotypical peers. The study also aims to examine what qualities and characteristics that make a peer supported recreational activity effective. This study will explore the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved.

The following literature review will discuss the ASD diagnostic criteria, how it impact's those diagnosed, and common characteristics of social skills and friendship quality of those with ASD. The literature review will also include research regarding the neurotypical peer acceptance rate amongst individuals with ASD and the known impact of recreational activities on individuals with and without ASD.

### **Autism Spectrum Disorder**

ASD is notably considered the fastest growing developmental disorder in the United States (Baio, 2014). ASD has received worldwide attention as the prevalence continues to grow around the globe (Baio, 2014). The Centers for Disease Control and Prevention used the Autism and Developmental Disabilities Monitoring (ADDM) Network surveillance system to estimate the prevalence of ASD in 2010 (Baio, 2014). At the time of the surveillance the Centers for Disease Control and Prevention was using diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) (Baio, 2014). The Centers for Disease Control and Prevention estimated the prevalence of ASD to be one in sixty-eight eight-year-old children in the United States (Baio, 2014).

As the amount of children affected by ASD rises each year, researchers are actively trying to comprehend the reasons behind the exponential growth in prevalence. The prevalence of ASD has been surrounded by controversy as experts attempt to explain the change. Despite the various hypotheses, there are some overlapping ideas that many agree upon. The more regularly addressed possibilities include changes in diagnostic criteria, earlier diagnosis, and an increase of awareness in communities, families, and schools (Matson, Hattier, & Williams, 2012; Matson & Kozlowski, 2011). With this new change in diagnostic criteria, many experts hypothesize changes to the current estimated prevalence of one in sixty-eight children.

Researchers anticipate that the prevalence of ASD will decrease with the adoption of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), however the reasons for the decrease in numbers may be due to the new diagnostic criteria excluding individuals who were previously diagnosed with ASD and diagnosing them with another disorder (Maenner et al., 2014; Matson et al., 2012a).

Before 2013, the previous diagnosis of ASD under the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR), included six diagnostic subtypes including autistic disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS), Asperger's disorder, Rett's Disorder, and Childhood Disintegrative Disorder (Harstad et al., 2014; Neal et al., 2012). Under the newly revised Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the various sub-categories that were formerly categorized within autism no longer exist (Harstad et al., 2014; Neal et al., 2012). The current diagnosis criterion of ASD includes having challenges in social interactions and communication alongside restricted, repetitive behaviors or interests (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). Individuals who lack restricted, repetitive behaviors, but are still categorized as having social communication impairments will now receive the diagnosis of social communication disorder, rather than ASD (Harstad et al., 2014; Neal et al., 2012).

With the adoption of the new diagnostic criteria in Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the presence of restricted and repetitive behaviors is one of the determining factors when deciding if individuals receive the diagnosis of ASD or social communication disorder (Harstad et al., 2014; Neal et al., 2012). The underlying processes of restricted and repetitive behaviors are difficult to understand despite their common manifestations in individuals with ASD. The occurrences of restricted and repetitive behaviors

can manifest themselves in the form of stimming, tapping, or captivation in an object or topic (Ravizza, Solomon, Ivry, & Carter, 2013). Ravizza's (2013) research aimed to provide an alternative to the common hypothesis that suggests that restricted and repetitive behaviors are caused due to struggles in attention. This experiment investigated the relation between attention and motor deficits by comparing the results to adolescents with ASD and neurotypical participants as they performed spatial attention tasks and rhythmic tapping tasks (Ravizza et al., 2013). Research showed that these restricted and repetitive behaviors were more associated with increased motor system challenges in children with ASD rather than attention difficulties (Ravizza et al., 2013).

Along with restricted and repetitive behaviors, it is common for individuals with ASD to experience atypical sensory responses, which could include heightened sensitivity to light, touch, smell, taste, and audio (Stewart et al., 2015). Many individuals with ASD report instances of atypical sensory responses in the form of auditory-visual stimuli compared to other stimuli (Stewart et al., 2015). When presented with unisensory tasks or multisensory tasks, many individuals with ASD experience reduced response time compared to neurotypical peers (Stewart et al., 2015).

ASD manifests itself differently in all individuals diagnosed. Spectrum disorders are disorders that encompass individuals with a range of the severity within the diagnostic criteria (Neal et al., 2012). Although the severity of ASD symptoms can vary by individual, ASD affects children of both sexes and all ethnicities (Baio, 2014). The Centers for Disease Control and Prevention used the Autism and Developmental Disabilities Monitoring (ADDM) Network surveillance system to assess the prevalence of ASD in regards to each sex. The Centers for Disease Control and Prevention estimated that one in 42 boys and one in 189 girls are diagnosed

with ASD (Baio, 2014). ASD permeates through all cultures, but at different prevalence rates. White children are 30% more probable to be diagnosed with ASD than African American/Black children (Baio, 2014). White children were also approximately 50% more probable to be diagnosed with ASD compared to Hispanic/Latino children (Baio, 2014).

The Centers for Disease Control and Prevention estimated that 31% of children diagnosed with ASD also had IQ scores below 70, placing them in the range of intellectual disability (Baio, 2014). The intellectual ability level amongst individuals diagnosed with ASD varies depending on the ethnicity of the child (Baio, 2014). African American/Black children diagnosed with ASD were more likely to be classified in the range of intellectual disability, making up 48% of the proportion of total children with ASD and intellectual disability (Baio, 2014). Of the rest of the children diagnosed with ASD and an intellectual disability, Hispanic/Latino children made up 38% and White children made up 25% (Baio, 2014).

Despite the high prevalence numbers for ASD and its permeation through sex and culture, there is no known cause for the disorder (Matson & Kozlowski, 2011). One of the most notable misconceptions is that vaccines cause ASD. In 1998 a researcher published a study that linked vaccines to ASD, however it was retracted due to fraudulent data (Matson & Kozlowski, 2011). Despite the studies retraction and lack of scientific significance, many members of society rallied behind the idea and the misconception still guides many individual's decisions about vaccination (Matson & Kozlowski, 2011). Although a specific cause is not known, experts agree that ASD may be caused by a gene X environment interaction (Kim & Leventhanl, 2015). ASD etiology research has explored various genetic similarities amongst children diagnosed and is making progress identifying genetic substrates (Kim & Leventhanl, 2015). As researchers are

examining various genetic aspects, they are exploring the interactions between those genes and the environment (Kim & Leventhanl, 2015).

### **Social Skills**

The diagnostic criteria for ASD, described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), includes challenges in the area of social interaction and social communication that manifest themselves across multiple contexts (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). Children with ASD may struggle with social emotional reciprocity (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). In social situation these struggles may be seen when an individual approaches a social situation inappropriately. For example, individuals may interrupt a current conversation or insert themselves into the conversation in an off-topic manner. Children with ASD may also struggle to engage in socially typical reciprocal conversations and express their emotion (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). A prominent hardship for children with ASD is the avoidance of initiating or responding to social interactions (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). Challenges in non-verbal communication behaviors that are necessary for successful social interactions are common in children with ASD (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). These challenges can display themselves when a child with ASD struggles to integrate verbal and nonverbal communication into a functional social interaction. Children with ASD may also exhibit inappropriate eye contact, atypical body language, and incorrect facial expression (Baio, 2014; Harstad et al., 2014; Neal et al., 2012).

Currently many service providers, educators, and parents are beginning to utilize a variety of research-based interventions and techniques to support children with ASD as they improve their social skills, interactions, communication and nonverbal communication

behaviors. In many school settings Individualized Education Program (IEP) teams, which include parents, service providers, and educators, agree to implement speech and language services to support students with ASD. A Speech and Language Pathologist administers speech and language services. Common techniques used by a Speech and Language Pathologist include social scripts, social skills groups, social stories, and score skills strategy. Social scripts involve prompting in order to facilitate a variety of language skills. When using social scripts, prompts are faded over time as the children begin to learn the needed language skills for social interactions (Nelson, 1978). Social skills groups include students with ASD interacting with their neurotypical peers. During social skills groups, the members engage in role-playing and are provided with direct instruction and feedback from the Speech and Language Pathologist (Adams et al, 2012). Social stories are used to explain social situations and provide children with ASD with an example of a socially appropriate response or behavior in a relatable way (Gray, White, & McAndrew, 2002). Score skills strategy is a group program that focuses on sharing ideas, complimenting others, offering help or encouragement, recommending changes appropriately, and exercising self-control (Vernon, Schumaker, & Deshler, 1996). The described speech and language techniques, as well as many others, have been shown to have positive benefits in the areas of social communication, social interaction, and nonverbal communicative behaviors in individuals with ASD.

Many educators and service providers use functional behavior assessments and behavior intervention plans to help support children with ASD that have behavioral challenges. Some of these behavioral challenges for an individual with ASD can be inappropriate social behavior that may occur during social interactions, social communication, or nonverbal communication. A functional behavior assessment is the process by which educators, service providers, and parents

collaborate to define the behavior and determine the function of the behavior to the child (Fad, Patton, & Followay, 2000). For example, the child may be receiving attention or avoiding a task by engaging in the behavior. The function of a behavior is determined by analyzing the various antecedents, which are the events that occur right before a behavior, the behavior itself, and consequences which are the events that occur directly after the behavior (Fad et al., 2000). Once the behavior, antecedents, consequences, and function have been identified, a behavior intervention plan can be developed. A behavior intervention plan can include a variety of structured reinforcement, consequences, and include strategies for creating an inclusive environment for the child with ASD that educators and service providers will use (Fad et al., 2000). Behavior intervention plans can also include structured responses for educators and service providers to utilize when the behavior occurs. When developed effectively, behavior intervention plans can decrease socially inappropriate behaviors and increase socially appropriate behaviors over time.

Many parents of individuals with ASD seek out applied behavior analysis therapy outside of the school setting to promote success in the areas of social functioning. Functional behavior assessments and behavior intervention plans stem from many of the foundational principles of applied behavior analysis, commonly referred to as ABA. ABA is widespread and considered one of the leading interventions for individuals with ASD (Matson et al., 2012b). ABA is the process of applying interventions to help increase desired behaviors and decrease undesired behaviors (Matson et al., 2012b). Trained ABA therapists perform these interventions by strategically distinguishing antecedents that may be prompting behaviors and modifying consequences that follow the behaviors (Matson et al., 2012b).

Children with ASD may have language struggles and difficulties knowing how to socialize using their language. Fortunately, research has shown that ABA, when implemented correctly to reinforce language, can enhance vocalizations in young children with ASD and increase response diversity in older children with ASD (Matson et al., 2012b). Matson (2012b) provided an in depth review of various studies analyzing the impact of ABA. The review included analysis on the study by Napolitano and colleagues (2010), which used prompts and delayed reinforcement to increase response diversity amongst individuals with ASD. ABA can also be used to help individuals with ASD develop essential life skills including peer engagement and social skills (Matson et al., 2012b). Matson's (2012b) review also discusses how Betz (2008) was able to use joint activity schedules to increase peer engagement and play skills in preschoolers with ASD. Lastly the review described a study conducted by MacDonald and colleagues (2009), where video modeling was used as a means to teach reciprocal pretend play school aged children with ASD. Matson's (2012b) review also included various studies that focused on using ABA techniques to teach appropriate engagement with strangers and toileting.

Despite the variety of interventions that are available for individuals with ASD, it is extremely important for them to be able to generalize the skills learned in structured service environments and use them in their everyday life. In order to encourage this generalization it is important for interventions for social communication competency to involve natural settings as much as possible (Rao, Biedel, & Murray, 2008). Currently schools have been the main avenue for interventions, as it provides natural settings with in the classroom, recess, and clubs. A variety of research has shown that peer mediated interventions have been successfully improving social communication skills in individuals with ASD (Hochman, Carter, Bottema-Buetel, Harvey, & Gustafson, 2015; Kamps et al., 2014; Kamps et al., 2015; Thiemann & Goldstein,

2004). Peer mediated interventions are categorized by teaching neurotypical peers strategies for interacting to create a support network for individuals with ASD to engage in social interactions.

Peer mediated interventions have been successful in increasing peer interactions and social engagement (Gardner et al. 2014; Hochman et al. 2015). Peer mediated interventions have also been linked to an increase in conversational skills used during social interactions including initiations, follow up questions, and longer conversations (Gardner et al. 2014; Hochman et al. 2015). According to Hochman (2015), after weekly peer network meetings trained neurotypical students and students with ASD there was an increase in the intervals containing peer interactions and social engagement during a lunchtime peer network intervention. Gardner and colleagues (2014) found similar results when researching the efficacy and social validity of peer network interventions that included an activity or conversation aimed to target specific social skills. The peer network intervention researched by Gardner (2014) had a component that focused on one of the following skills: answering questions, turn taking, cooperation, and teaching others how to participate. Results showed that there was an increase in peer interaction for both the students with ASD and neurotypical peers (Gardner et al. 2014).

### **Friendship Quality**

Individuals with ASD have difficulties with social interactions and communication (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). At times these social impairments may hinder children with ASD's ability to independently develop and maintain quality friendships. Compared to their neurotypical peers, children with ASD are usually disconnected from their school's social environment, have less friends, and experiences poorer social outcomes (Chamberlain et al., 2007; Kasari et al., 2011; Locke et al., 2013; Rotheram-Fuller et al., 2010). Children with ASD are also more likely to have social interactions with adults, including parents,

than their neurotypical peer (Solish, Minnes, & Kupferschmidt, 2010). As children reach adolescence, friendships become a more significant part of their life. For children with ASD, moving into adolescence can be difficult due to awareness of their social impairments and the increase in complexity of social interactions (Tantam, 2003). Research has shown that compared to their neurotypical peers, adolescents with ASD spend more time with adults and paid professionals (Orsmond & Kuo, 2011). According to Orsmond and Kuo (2011), in their study of 235 individuals with ASD only 38.5% of participants engaged in group recreational activities, but during that time they were all accompanied by parents or professionals.

Despite the difficulties in developing and maintaining friendships, children and adolescents with ASD are able to establish peer relationships (Bauminger et al., 2003; Howard, Cohn, & Orsmond, 2006; Orsmond, Krauss, & Seltzer, 2004). It is more likely for children and adolescents with ASD to have friends who are close in age, the same gender, and also have a disability (Bauminger et al., 2003). Adolescent neurotypical peers usually spend time with friends by attending parties, dances, movies, concerts or participating in sports (Kuo, Orsmond, Cohn, & Coster, 2011). Adolescents with ASD infrequently spend time with friends (Bauminger et al., 2003). However, when adolescents with ASD spend time with friends they are more commonly involved in board games, playing on the computer, and watching videos (Bauminger et al., 2003).

Schools have begun to implement interventions in order to support individuals with ASD develop and maintain quality friendships. Recent studies showed that peer mediation and adult facilitated programs improved children with ASD's playground engagement (Kretzmann, Shih, & Kasari, 2014; Pearpoint, Forest, & Snow, 1992). Kretzmann and colleagues (2014) researched the impact of an adult facilitated program, "Remaking Recess", where paraprofessionals received

training on how to increase social engagement of students with ASD on the playground. Results showed that the intervention was beneficial in increasing peer engagement, however paraprofessionals implementing the interventions would benefit from continued support and training (Kretzmann et al., 2014). “Circle of Friends” is a club on many high school campuses that promote inclusion of students with disabilities, including ASD. This program encourages social interactions between students with disabilities and their neurotypical peers. “Circle of Friends” aims to establish a social network of friends for individuals who may otherwise be isolated (Pearpoint, Forest, & Snow, 1992).

### **Peer Acceptance**

Many individuals with ASD are commonly found on the outer layers of social networks and are less accepted by their neurotypical peers (Chamberlain et al., 2007). As support staff works with students with ASD, it lowers socializing opportunities and reduces the possibility of social initiations by neurotypical peers (De Boer et al., 2013). Although support staff can positively impact the teacher’s work load and the student’s ability to access general education curriculum, adult assistance negatively impacts peer acceptance of students with ASD by their neurotypical peers (De Boer et al, 2013; Glashan, Mackay, & Grieve, 2004; Howes, 2003; Wendelborg & Tossebro, 2011). Another reason that individuals with ASD are on the peripheral of the social network may be the lack of social skills. Individuals with ASD have challenges understanding social cues, initiating social interactions, and joining social interactions (Bauminger et al., 2003).

As children begin to enter middle school they become more invested in their social status due to their ability to be more aware of the position in the social networks (Kwon & Lease, 2009). Individuals with ASD’s peer acceptance rate may vary depending on the gender they are

attempting to interact with. During these years, same gender friendships become more desired. Neurotypical children adapt their attitudes and behaviors based on the perceived group norm and tend to avoid associating students who do not (De Boer et al., 2013). Girls who have ASD have a lower acceptance rate by their same-sex neurological peers than boys (De Boer et al., 2013). Research has found that girls and boys deduct their peer acceptance based on different factors (De Boer et al., 2013). Girls use intrinsic and personal factors as indicators of their peer acceptance; on the other hand, boy's peer acceptance is affected by the attitudes of the peer group as a whole (De Boer et al., 2013).

Children with ASD who experience social rejection or have lower rates of peer acceptance can often result in feelings of anger or depression and may experience mental health problems (Fredrickson & Cline, 2009; Cowen 1973). In order to lower negative consequence, researchers have begun to investigate ways to improve peer acceptance. The contact theory suggests that if individuals with ASD and their neurotypical peers have increased contact with each other, then positive attitudes and peer acceptance will improve (Allport, 1954). Peer acceptance also increases when peers become more educated on various disabilities (Favazza & Odom, 1997; Godeau et al., 2010). Adult and peer mediated strategy program have also improved the amount of positive social initiations made by neurotypical peers to children with ASD (Kalyva & Avramidis, 2005; Licciardello, Harchik, & Luiselli, 2008; Wood et al., 2014).

### **Recreational Activities**

Many children with disabilities, including ASD, participate in activities at lower rate than their neurotypical peers (Brown & Gordon, 1987; Buttimer & Tierney, 2005). Children with disabilities spend more time engaged in social activities with their families rather than nonrelative peers (Modell et al., 1997). Outside of school, parents of individuals with ASD have

begun seeking out opportunities for social interaction to help their children develop social skills and friendships (Kampert & Goreczny, 2007). Opportunities for social interactions can occur through participation in formal activities, which usually include a coach or leader and rules or goals (King et al., 2003). The overall benefits of participating in formal activities include social interaction, improved social skills, peer relationships, and the enhancement of self-worth (Modell et al., 1997; King et al., 2003; Weiss et al., 2003; Cowart et al., 2004; Buttimer & Tierney 2005; Law et al., 2006).

Although some researchers suggests that children with ASD may be more successful in individual activities rather than team sports, other researchers have found that with the needed supports team sports can be beneficial to children with disabilities including ASD (Dykens, Rosner, & Butterbaugh, 1998; Murphy & Carbone, 2008; Weiss et al., 2003; Wilson, 2002). According to Dykens (1998), participation in team sports promotes inclusion, provides a context for the development of friendships, and helps individuals with disabilities gain a purpose in life. These same findings were discussed a decade later by Murphy and Carbone (2008). It is believed that parents and pediatricians overlook the benefits of engagement in physical recreational activities due to overestimating of the risks involved. Murphy and Carbone (2008), created a clinical report, which discussed not only the benefits but also included information directed toward pediatric health care professionals on how to best support participation while insuring the safety of those involved. Weiss and colleagues (2003) took a specific look into the benefits of the Special Olympics program and found that individuals with disabilities who participated in a sporting activity had higher peer acceptance, self-esteem, independence, and life satisfaction.

In order for individuals with disabilities who are engaging in formal recreational activities to gain benefits, there must be social integration not simply physical integration

(Hughes et al., 2002; Lord & Hopkins, 1986). When true social integration is occurring in a recreational activity, it has benefits for all individuals involved regardless of disability status (Hughes et al., 2002; Lord & Hopkins, 1986). Although it may seem that children with disabilities are socially integrated when they are involved in activities with their peers, it may not always be the case (Solish et al., 2003; Solish et al., 2010). Adult caregivers and paid adults are more commonly providing support to individuals with ASD during their participation in recreational activities (Solish et al., 2003; Solish et al., 2010).

### **Conclusion**

ASD is a developmental disorder that is characterized as having challenges in social communication and interactions, and engaging in restricted, repetitive behaviors or interests (Baio, 2014; Harstad et al., 2014; Neal et al., 2012). Social skills including understanding social cues, initiating social interactions, and joining social interactions are area of struggle for many individuals with ASD. Social impairments may hinder their ability to independently develop and maintain quality friendships, causing them to be disconnected from their school's social environment, have less friends, and experiences poorer social outcomes (Chamberlain et al., 2007; Kasari et al., 2011, 2012; Locke et al., 2013; Rotheram-Fuller et al., 2010). Individuals with ASD are less accepted by their neurotypical peers due to the lack of socializing opportunity caused by support staff and struggles with social skills including understanding social cues, initiating social interactions, and joining social interactions (Bauminger et al., 2003; Chamberlain et al., 2007; De Boer et al., 2013). Research suggests that if neurotypical peers have more contact with individuals with ASD and learn about ASD their peer acceptance would improve (Allport, 1954; Favazza & Odom, 1997; Godeau et al., 2010).

One popular way for neurotypical peers to have contact with peers with ASD is through recreational activities. The benefits of participating in recreational activities include improved social skills, increased friendship, and higher rates of peer acceptance (Buttimer & Tierney 2005; Cowart et al., 2004; King et al., 2003; Law et al., 2006; Modell et al., 1997; Weiss et al., 2003). Despite the overall benefits of participating in recreational activities, many children with ASD participate in activities at lower rate than their neurotypical peers (Brown & Gordon, 1987; Buttimer & Tierney, 2005).

Recreational activities may provide an important social context for children with ASD to develop social skills and friendships and for neurotypical peers to develop peer acceptance. Adult caregivers and paid adults are more commonly providing support to individuals with ASD during their participation in recreational activities (Solish et al., 2003). However, participating in recreational activities is more effective when the individuals with ASD and neurotypical peers are truly socially integrated, not simply integrated through proximity (Lord & Hopkins 1986; Hughes et al., 2002). In order for programs to have true social integration they should follow a peer support model, rather than parent or adult supported. By using peer supports to facilitate the participation of individuals with ASD in recreational activities, it provide a more genuine social interaction for all involved.

The purpose of this study is to explore the impact of participation in peer supported recreational activities on individuals with ASD, and their neurotypical peers. The study also hopes to explore what characteristics make a peer supported recreational activity effective. Specifically the study will try to answer the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with

neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?

The upcoming chapter will provide an overview of the methodology of the research study. The chapter will include information regarding the design of the study, participants involved, setting, procedures, and proposed analysis of the data.

### Chapter Three: Methodology

The purpose of this study is to explore the impact of participation in peer supported recreational activities on individuals with ASD and their neurotypical peers. The study also hopes to explore what characteristics make a peer supported recreational activity effective. Specifically the study will try to answer the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?

This chapter will provide an in depth explanation of the methodology of the research study. The chapter will describe the design of the research study and the justification for the approach, along with a detailed description of the participants involved. The setting of the interviews and the procedures followed by the researcher will also be discussed. Lastly, this chapter will briefly provide information on how the collected data will be analyzed.

#### **Design**

The research study focused on qualitative data gained through interviews of the program directors of Moonlight Basketball, parents of individuals with ASD who participated in Moonlight Basketball, and neurotypical peers who supported individuals with ASD in Moonlight Basketball. Qualitative data was the most effective research method in order to gather descriptive narratives from participants about peer supported recreational activities, social skills, peer acceptance, and friendships (Turner, 2010). The interviews were standardized open-ended

interviews, in which all participants were asked identical open-ended questions (Turner, 2010). Due to the open-ended nature of the interviews, participants were able to provide rich responses unique to their experiences within the Moonlight Basketball program. This form of interviewing also allowed the researcher to ask prompting questions as a follow-up to the participants' responses. The nature of standardized open-ended interviews made qualitative data most appropriate for collecting the verbal responses from participants.

### **Participants**

When discussing the participants of this research study pseudonyms will be used to protect the identity of the recreational program, program directions, individual with ASD, parents of individuals with ASD, and neurotypical peers.

### **Moonlight Basketball**

All participants were recruited through Moonlight Basketball, a peer supported recreational activity program. Moonlight Basketball was created as an inclusive program designed for individuals, ages 5-22 with a variety of disabilities including Autism, Down Syndrome, and other physical and developmental disabilities. The mission of the program is for individuals with disabilities to learn and enjoy the game of basketball in a fun, non-competitive environment. Moonlight basketball was founded in 2006, starting with one team of eight players. Now in its 11th, seasons the program serves more than 100 players. The season ran for 9 weeks, with the participants meeting once a week on Sunday for an hour and fifteen minutes. During the first half-hour, the peer supports ("buddies") worked one-on-one or in small groups with the individuals with disabilities ("players"). During this practice portion, they worked on the fundamentals of basketball - passing, dribbling and shooting. For the second half-hour, the adult supports ("coaches") facilitated a game. During the game the buddies became the other team

playing against the players, while simultaneously supporting their buddy dribble, pass, and shoot. At the end of the game, buddies, players, coaches, and fans (parents, families, friends watching the practice/games) engaged in snack time and awards were given for “players of the game”.

The research found this recreational program through her involvement in the program. She was involved in the Moonlight Basketball program for three seasons as a buddy working with an individual with ASD with limited verbal communication during her high school years. She later returned to the program and has been coaching for the last two seasons. As a coach she facilitates practices and games and supports neurotypical peers interacting with their buddies. Over the course of her involvement she encountered positive social interactions, and witnessed transformation of the neurotypical volunteers, sparking her interest in the research topic and the selection of the recreational program.

### **Sample Selection**

The researcher provided the two program directors of Moonlight Basketball with information about the purpose of the study, how their program would be involved, and the possible benefits and risks of participating in the study. The two program directors provided the researcher with a letter of support for the recruitment of individuals from their program. The program directors both provided signed consent of their participation in the research study. In order to identify potential participants the researcher worked with the program directors to create a list of participants that match the needed population groups: parents of individuals with ASD and neurotypical peers who support individuals with ASD.

The researcher worked with the program directors to categorize the list of parents of individuals with ASD into categories based on their children’s verbal communication abilities and the amount of time they had been in the program. The researcher worked with the program

director to categorize the list of neurotypical peers who support individuals with ASD into categories based on their buddy's verbal communication ability and the amount of time they had been in the program.

The verbal communication ability was separated into the following two categories, less verbal and verbal. The length of time in the program was separated into the following two categories, new and veteran. For the purpose of this study being a new participant of the program was defined as one or two seasons in the peer supported recreational activity program, while a veteran was defined as three or more season in the peer supported recreational activity program. A season was defined as the length of time a program runs continuously. For the purpose of this study children with ASD who were in the less verbal category will be defined as children who have few words or only uses simple sentences. On the other hand, children with ASD who were in the verbal category will be defined as children who are able to speak in full sentences.

### **Criteria and Sample Size**

**Program Directors (N= 2).** The Program Director population was made up of the two program directors of the peer supported recreational activity, Moonlight Basketball.

**Parents of Individuals with ASD (N= 4).** The Parents of Individuals with ASD population was made up of parents of children with ASD who participate in the peer supported recreational activity, Moonlight Basketball, and fall into the following categories: (1) Parent of a child who has verbal communication ability and is new to the program (2) Parent of a child who is limited in their verbal communication and is new to the program (3) Parent of a child who has verbal communication and is a veteran to the program (4) Parent of a child who is limited in their verbal communication and is a veteran to the program.

**Neurotypical Peers (N=4).** The Neurotypical Peer population was made up of neurotypical peers who participated in the peer supported recreational activity, Moonlight Basketball, supporting a peer with ASD and fall into the following categories: (1) Supports a peer who has verbal communication ability and is new to the program (2) Supports a peer who is limited in their verbal communication and is new to the program (3) Supports a peer who has verbal communication and is a veteran to the program (4) Supports a peer who is limited in their verbal communication and is a veteran to the program.

### **Demographics**

**Program Directors.** Robert and Erika, a husband and wife team, are the founders and directors of Moonlight Basketball. Their oldest son, now 18 years old, has ASD. They started this program when Jason was seven years old, due to his interest in the game of basketball. Robert and Erika found that traditional recreational basketball was too fast paced and structured with rules. After thorough research they realized there was no local basketball recreational program that could accommodate his needs. Together with the help of their local basketball recreation league, they started a new division, Moonlight Basketball.

**Parents of Individuals with ASD.** Jared is the father of Thomas. Thomas is a 15-year-old high school freshman and was diagnosed with ASD at age three. In the school setting Thomas is considered moderate to severe. Although his father reports that Thomas is able to communicate his wants and needs he struggles to verbally communicate at the level of his neurotypical peers. He enjoys being on the computer and watching YouTube videos in his leisure time. He has been involved in Moonlight basketball for 8 seasons.

Rebecca is the mother of Cody. Cody is a 13-year-old 7th grader and was diagnosed with ASD at age two. He doesn't have a lot of speech compared to his neurotypical peers. However

his mother reports that he is happy and easy to get along with. Cody enjoys playing on his iPad for fun. This is his first year as a player in Moonlight Basketball.

Paul is the father of Aaron. Aaron is a 14-year-old high school freshman, who has a diagnosed with ASD. Aaron uses verbal speech as his primary way of communication, but struggles to decipher social cues and norms during interactions. He is very active and enjoys being outdoors. Aaron has been involved in Moonlight Basketball for 7 seasons.

Tracy is the mother of Brandon. Brandon is a 12-year-old who has a diagnosed with ASD. Brandon uses verbal speech as his primary way of communication, but struggles to decipher social cues and norms during interactions. He is a creative individual and has self-taught himself to play many instruments. Brandon has been involved in Moonlight Basketball for 1 season.

Demographics of Parent Participants					
Parents of Individuals with ASD (N= 4)					
<u>Parent</u>	<u>Child</u>	<u>Child's Age</u>	<u>Child's Gender</u>	<u>Child's Verbal Ability</u>	<u># of Seasons</u>
Jared	Thomas	15	Male	Less Verbal	8
Rebecca	Cody	13	Male	Less Verbal	1
Paul	Aaron	14	Male	More Verbal	7
Tracy	Brandon	12	Male	More Verbal	1

**Neurotypical Peers.** Samuel is an 18-year-old male and senior in High School. He played basketball for 8 years before he switched over to track and field. He is highly involved in his school high school, where he has been a part of academic and community service clubs, as well as working for the school newspaper. He is a 3-year veteran to the Moonlight Baseball program. For each season he was paired with a male peer with ASD, Thomas. Thomas is 15

years old and has limited verbal communication. He was described as using noises, single repeated words, or short phrases to communicate. He has been Thomas' buddy for 3 seasons.

David is a 19-year-old male senior in high school. He has played basketball most of his life in noncompetitive settings. He is not involved in any other extracurricular activities in or outside of school besides Moonlight Basketball. He is new to the program. He has volunteered with Moonlight Basketball for 1 year and worked with a male peer with ASD, Wilson. Wilson is 13 years old and has limited verbal communication. He was described as mainly uses sounds and simple words to communicate. He has been Wilson's buddy for 1 season.

Alex is a 15-year-old male. He has played basketball recreationally and is a freshman in high school. Alex thought about joining Moonlight Basketball for two years before deciding to commit to the program. He has volunteered with Moonlight Basketball for 1 year and worked with a male peer with ASD, Gio. Gio is 14 years old. Gio is able to verbally communicate, however struggles with the social nuances of communication. He has been Gio's buddy for 1 year.

Karissa is an 18-year-old female and senior in high school. She has played basketball competitively for years. At her high school she has been involved in the Best Buddies club, where she is able to interact with peers with various disabilities. She has been involved in Moonlight Basketball for 6 seasons, being a buddy to Jason. Jason is a 18 years old male with ASD. Jason is able to verbally communicate, however struggles with the social nuances of communication. She has been Jason's buddy for 6 seasons.

Table 2						
Demographics of Neurotypical Peer Participants						
Neurotypical Peer (N= 4)						
<u>Peer</u>	<u>Age</u>	<u>Gender</u>	<u># of Seasons</u>	<u>Peer's Name</u>	<u>Peer's Age</u>	<u>Peer's Verbal Ability</u>
Samuel	18	Male	3	Thomas	15	Limited Verbal
David	19	Male	1	Wilson	13	Limited Verbal
Alex	15	Male	1	Gio	14	Verbal
Karissa	18	Female	6	Jason	18	Verbal

### Setting

Participants were given the opportunity to select the location of their interview in order to insure they felt comfortable. The interviews were held in a variety of locations including the participant's home and school classrooms. The interviews of the program directors and three parents of individuals with ASD's were conducted at the home of the participants. One of the interviews of the parent was conducted at a local high school. The interviews of the neurotypical peers were conducted in an empty classroom at their high school.

### Instruments

The researcher used a structured open-ended interview format to gather data. Each population group was asked a variety of open-ended questions to gather responses regarding peer supported recreational activities, social skills, peer acceptance, and friendships

### Program Directors

The program directors were able to provide the researcher with information through their insights on the development of and overseeing of the peer supported recreational activity, Moonlight Basketball. The program directors were asked to provide their insight on the

background of the program, qualities and characteristics of the program, and their perceived impact the program has on those involved. The program directors were also asked to compare Moonlight Basketball to other programs in the area and discuss their future goals for the program. (See Appendix B)

### **Parents of Individuals with ASD**

The parents were able to provide the researcher with information through their close interactions with their children and their observations of the peer supported recreational activity, Moonlight Basketball. Parents were asked to provide information regarding their friendship quality and involvement in Moonlight Basketball. Parents were asked about the number of non-related friends, the amount of time spent with friends, the number of friends made through Moonlight Basketball, and the activities participated in together. Parents were also asked about if the involvement in a Moonlight Basketball impacted their child's cooperation, empathy, engagement, communication, and emotion regulation. (See Appendix C)

### **Neurotypical Peers**

The neurotypical peers will be able to provide the researcher with information through their close interactions with individuals with ASD and participation in the peer supported recreational activity, Moonlight Basketball. Neurotypical peers were asked about their peer acceptance and participation in Moonlight Basketball. Neurotypical peers were asked to discuss if their involvement as a peer support has impacted their patience and confidence when interacting with individuals with disabilities. Neurotypical peers were also asked if their involvement as a peer support has changed their likeliness to interact with, include, and stand up for individuals with disabilities. (See Appendix D)

### **Procedures**

The researcher first located a peer supported recreation activity program and contacted the program directors. The program directors were provided with an explanation of the study's purpose, procedures, risks, safeguards, confidentiality protocols, and the possible benefits of participating in the study over email. Once the program directors provided the researcher with a letter of support and signed consent, the researcher began selecting the sample. The program directors worked collaboratively to provide the researcher with a list of possible participants based on the desired categories and contact information. The possible participants were provided with a verbal explanation of the study's purpose, procedures, risks, safeguards, confidentiality protocols, and the possible benefits of participating in the study. Information was also provided to the parents of any possible participants who were minors. When the research selected the final participants, interviews were scheduled based on the availability of the participants. Before scheduling an interview with a minor, parental consent was received. On the day of the interview, the participants had time to read the consent or assent document, depending on their age, which explained of the study's purpose, procedures, risks, safeguards, confidentiality protocols, and the possible benefits of participating in the study. Once the consent or assent form was signed the interview began. After each interview, the researcher transcribed the interview and performed line by line coding in order to locate various themes among the three population groups.

### **Analysis**

After interviews were conducted, the researcher transcribed each interview into a text document. The researcher then numerically labeled each line, for better identification of data. This data consisted of responses to open-ended interview questions where participants discussed

the peer supported recreational activity program, Moonlight Basketball, social skills, peer acceptance, and friendships. The researcher read the transcripts and coded line by line for common themes. The parent's open-ended responses were examined to locate common theme including friendship quality, social skills, and program characteristics. The peer's open-ended responses were examined to locate common themes including social interaction with individuals with ASD, impact on personality, peer interactions, and program characteristics. The program director's open-ended responses were examined to locate common themes including program characteristics.

### **Conclusion**

The purpose of this study is to explore the impact of participation in peer supported recreational activities on individuals with ASD, and their neurotypical peers. The study also hopes to explore what characteristics make a peer supported recreational activity effective. The research study focused on qualitative data gained through interviews of the two program directors of Moonlight Basketball, parents of individuals with ASD who participate in Moonlight Basketball, and neurotypical peers who support individuals with ASD in Moonlight Basketball. The interviews asked participants to discuss qualities of Moonlight Basketball, peer acceptance, social skills, friendships, and impact of being involved in a peer supported program. The interview responses were analyzed by locating common themes articulated by directors, parents, and peers. The following chapter will discuss the analysis and interpretation of the data collected from the interviews of the participants described.

#### Chapter Four: Data Analysis

The purpose of this study is to explore the impact of participating in peer supported recreational activities on both the individuals with ASD and the neurotypical peers providing support. The study also hopes to examine what characteristics make a peer supported recreational activity effective.

The data will be presented in the form of quotes transcribed from the audio recorded interviews. The quotes will be divided into the three population groups, neurotypical peers who support a peer with ASD, parents of individuals with ASD, and program directors. Within each population group the quotes will be subdivided into common themes. The responses from the neurotypical peers will be divided into the following themes social interactions, impacts on personality, peer interactions, and program characteristics. The responses from the parents will be divided into the following themes social skills, friendship quality, and program characteristics. The responses from the program directions will be categorized by program characteristics.

The responses will be further analyzing by locating common threads within each major theme. The interview quotes will be interpreted in respect to the following research questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?

## Data Presentation and Analysis

### Program Directors

The program directors were asked to provide their insight on the background of the program, qualities and characteristics of the program, and their perceived impact the program has on those involved. The program directors were also asked to compare Moonlight Basketball to other programs in the area and discuss their future goals for the program.

### Characteristics of Moonlight Basketball.

*Motivation.* The program directors described their motivation for starting Moonlight Basketball. Their son Jason, “who is high-functioning Autistic, showed an interest in basketball at the age of 7.” Erika described the strong interest by stating, “He loved it so much that he would spend his school recesses shooting baskets every day.” Erika described Jason’s first encounter with a traditional basketball league:

We then signed him up to participate in the [local] rec league but after a few practices, he was getting frustrated. Even with [Robert] as the coach, the pace of the game was too fast and the rules were too much for him to understand.

As they realized that the traditional program was challenging for Jason they “thought wouldn’t it be great if there was a basketball program out there for our special kids?” They searched for a program that could support Jason’s needs but were not successful in finding a program. “When we looked, we couldn’t find one, so we thought why not create one,” Erika stated. Erika stated that they were motivated to create Moonlight Basketball so Jason would be able to participate in a basketball league that best fit his needs.

*Uniquenesses.* According to Robert, the Moonlight Basketball program is unique in its ability to provide a stable team environment that allows for social interactions. When asked how

he believes their program is unique compared to other programs designed for individuals with varied needs, Robert described the overall environment of the program. Robert explained that:

The players get to be a part of a team in an environment that promotes stability, social interaction and the repetition that special needs kids many times crave. The buddies get to see that the special needs kids are fun to be around and true bonds of friendship are forged.

Robert also mentioned that the development of the program has been prompted through the feedback from their personal experiences and those involved to create a welcoming, family atmosphere. When discussing how the program developed into the program it is today Robert stated:

We really focused on the social aspect that so many of our kids crave. Through trial and error we have had the chance to take what we have learned from years of experience, feedback from players, buddies and parents and create a tight-knit, welcoming, family atmosphere.

***Future Goals.*** In the future they hope to continue Moonlight Basketball, but also acquire a facility where they can provide the special needs community with other activities, social functions, and employment. Robert and Erika hope to expand their program into an all inclusive resource center for the special needs community. Erika discussed their hopes and explained their long term goal as follows:

We hope the [Moonlight Basketball] program continues to grow, but our vision for the future is to have a facility for special needs kids where we can continue the basketball program and provide other activities, other sports, social functions, and also employ some of these special kiddos.

**Impact on those Involved.**

*Parents.* Robert described how he feels participation in Moonlight Basketball has impacted the parents of individuals with ASD. Robert, a parent of a child with ASD himself, believes that the program is well received by parents because it provides “their children a chance to play in an environment that is comfortable and fun, with coaches and buddies who are there just for their kids.” He also mentions that the program provides parent with “an hour to meet other parents, share information or just catch-up.”

*Neurotypical Peers.* During the development of the program, Robert did not anticipate the impact the program would have on the neurotypical volunteers. Robert discusses that the impact on neurotypical peer buddies “happened somewhat by accident.” He believes that participation in Moonlight Basketball has provided neurotypical peers with more understanding and acceptance of their special needs peers. He stated that the impact lead to “the acceptance of our special needs kids by our buddies.” He then explained the following:

This is encouraged in our program, but we see it in the community as well. The buddies realize that the special needs kids may have special challenges, but are still just kids just like the buddies. When they see each other at school or out at the store, movies there are genuine friendships that are evident.

He also discussed that the feedback he has received from peers has given him the opinion that it changes the way they see the word. When asked why he believes these neurotypical buddies are so impacted during their time at Moonlight Basketball he stated the following:

With the buddies in the program, we didn’t envision the profound affect that working with our special needs kids would have on them when we started. The feedback we get from the buddies is that working with these special needs kids is one of the best things

they have done in their lives. The work is not always easy, but it is completely rewarding and in that way, I think it forever changes the way they see the world.

***Individuals with ASD.***

As part of the duties of program director, Robert is present at every game and practice for each team in the program and also facilitates the parent and volunteer orientation. Robert describes being able to see the joy on the faces of the players as they have successes through the season. Over the course of the years he has directed this program he described what he has noticed in the player with ASD by stating:

For the players, their faces say it all. Having buddies and coaches work with the kids individually to help them do things like dribble, pass and shoot baskets, and then to see the players do something for the first time and light up, there is just nothing like it.

The Moonlight Basketball program uses peers to support individuals with ASD rather than parents or paid professionals. Robert believes that “[Moonlight Basketball] promotes social skills by pairing buddies and players together for an entire season.” He also explains that the program provides players with the opportunity to practice social skills and “build relationships in a non-threatening environment.” with a consistent neurotypical buddy. He also believes “that the quality of the relationships is enhanced through [Moonlight Basketball] because buddy/player pairings can many times last for years.”

**Parents of individuals with ASD**

Parents were asked to provide information regarding their friendship quality and involvement in Moonlight Basketball. Parent were asked about the number of non-related friends, the amount of time spent with friends, the number of friends made through Moonlight Basketball, and the activities participated in together. Parent were also asked about if the

involvement in a Moonlight Basketball impacted their child's cooperation, empathy, engagement, communication, and emotion regulation.

**Impact on individual with ASD.**

*Social Skills.* Parents were asked to discuss any impact they have seen or could foresee the Moonlight Basketball program having on their children. When discussing social skills, the four parents described different experiences. Tracy believed there was a positive impact on her son's emotion regulation, which she attributes to movement. She described the connection by stating:

Physical movement in that whole vestibular and proprioceptive movement for him is a huge outlet. So for him emotionally having that exercise and that cardio movement really helped him. But with interaction with others no. I mean he would seek out his buddy, but other than that no one else really.

Tracy also explained that after only a year in the program she could tell her son was not fully comfortable with his buddy, because "when [Brandon's] really comfortable. He'll start to talk your ear. So and that never happened." She also recognized that it might change with time. She stated:

But that doesn't mean that that's not going to happen in this next season. And it's just it was our first year. So it's really hard to gauge. Yeah it takes a lot to extend the bond too.

Yeah it takes a lot for him to get comfortable.

Paul believes for his son "[Moonlight Basketball] has become not just a physical program that he attends but he has met other people and begins to understand what relationships are." Paul also feels that the Moonlight Basketball program provides his son with a context to learn about social skills utilized to build relationships, including "affection, gratitude and all of those behaviors that sometimes allude a child with special needs because they don't have any comparison."

Meanwhile Jared, like Tracy, noticed that his son “engages more with his buddy than his other peers.” Rebecca, whose son is also new to the program, “can see the program having a positive impact for him especially because it involves gross movement. He likes a lot of gross motor movement.” She believes the movement will engage her son more allowing him to better control his emotions and provide conversation starters. She explained this by stating:

He is learning how to play the game more, so I think the more he learns how to play the better he'll be understanding what's expected of them. If you're playing the game and everybody's kind of on the same page, it's not like having to think of something on his own to say to somebody. Back again with the gross motor movement I think that he's able to control himself better, but we do see that every once in awhile he needs just to jump. So let him jump, then get him back involved with that again.

***Friendship Quality.*** Overall, all parents reported that their children had no traditional friendships with a peer who was willing to spend time with them outside of school or recreational activities. Tracy explained that her son has “zero” friends, but is “starting to become friends with someone from school.” She believes that Moonlight Basketball could “absolutely” allow him to make friends. She also described how she was introduced to the program, “The person who introduced us to the program he knew from his elementary school and so he looks forward to seeing her every day.” Although Aaron, “still to date doesn’t have tight friends that he would you know call up or see,” Paul believes that “he is more social because of [Moonlight Basketball]. He's more accepting of the nuances and the behaviors of others.” Jared reported that his son had no close friends, however there has been attempts made in the past by peers with ASD in the Moonlight Basketball program. Jared described these attempts by saying, “He just doesn't have any interest in friends there's been at least one kid who’s on the spectrum. He's one

year below [Thomas] he's also in [Moonlight Basketball], but he's made efforts and [Thomas] just isn't interested.” Rebecca was unsure of how to describe her son’s friendship statuses stating, “I don't know if you can say [Cory] actually has friends.” She later described that:

The individuals in his [special day] class diagnoses are all very varied and all at different developmental levels, so some of them do have Autism. He gets along with all of them.

He also got along very well with the typical children before, but he doesn't have as much access to them anymore.

Despite being able to get along well with peers, Rebecca also noted that “as far as you know calling up and somebody to come over something like” he doesn’t “really have anyone for that.”

***Quality of Life.*** When Paul was asked if Moonlight Basketball had any other impacts on his son he stated:

I think it's given him a very good look at all the other disabilities or special needs kids and he understands his role a little bit more. I also think sometimes he looks that he could actually do more and be more and succeed more in today's society.

Paul’s son has had a very unique experience compared to the others interviewed, as he has joined his high school’s cross country and track team. He also discussed how Moonlight Basketball aided his involvement in the track and cross-country team for his high school. Paul stated:

Starting out with just [Moonlight Basketball] he realized that okay this is something I like, I like, physical activity. He went from that into summer training his eighth grade year and as a freshman competed in every cross-country meet and every track meet all season long. So it gave him the confidence to say I want more.

Along with the confidence from Moonlight Basketball, Paul believes his daughter’s involvement was also a contributing factor as she “took him to cross-country practice every day and ran with

him and integrated him into the program. So when fall came around it was a natural transition.” Paul also believes the high school itself made this possible, as he believes “It's good coaching. It's a good program. It's a good environment.” Despite Aaron’s successful involvement, Paul explains how he feels as a parent:

But you have to be a hands-on parent. He's at risk out there. I'm fortunate to have several of the boys who pay a little bit more attention than normal to where he is and where he's at. That's one of the reasons why I'm here practice every single day.

Rebecca was able to witness her son Cory generalizing the skills learned in Moonlight Basketball and applying them to his adaptive physical education as he worked with neurotypical peer support in a basketball tournament. She describes her observations by stating:

I noticed in the [adaptive physical education] class they have typical kids who wanted to come and be buddies. So this one child has been with [him] the whole school year. So I saw them out at a basketball tournament. And [he] was playing great. He was running up and down he was making shots. He wasn't doing much defense, but he was right with that child again. There was another similarity and that's generalizing and he did fantastic when I saw him play there.

**Impact on Parent.** When asked how the program had impact her as a parent, Tracy described her newfound support system in the other moms who understood some of her struggles. Tracy stated:

If anything [Moonlight Basketball] was for me. I know it that sounds awful but yeah to sit down with all of those moms and to be able to just know that your son is being totally taken care of and for an hour just to be able to talk to somebody who gets it and understands it. Where all the fences are down, it's pretty it's pretty amazing to be in a

comradery like that. And some of the ladies we go out and get drinks and stuff like that now and I think that that's huge absolutely huge.

She also described her opinion on how it impacted her husband when stating:

I know for my husband having a son with Autism is really difficult you know and he knows that he's never going to be able to do actual sports with him. And he struggles with that and I think having the other dads there they're realizing that 'hey we're all in this together.'

She explained that Moonlight Basketball provided a sense of normalcy and allowed her and her husband to have a more traditional experience as a sports parent. She described this feeling by stating:

You know like when you go to a normal game or a normal basketball game all the parents just get to sit and talk and for us to have that, it's huge. That's the closest we're going to get to the normalcy of the idea of watching your child play a sport. That's pretty fantastic. I mean because we never, we moved here from [out of state] two years ago, I never thought I would be able to see him in a position like this. So it's pretty fantastic.

Paul "can't imagine not doing [Moonlight Basketball]." He recalled the first day he started Moonlight Basketball, "I walked in the first year and [Richard], the director, said 'Come on and see what it's all about maybe you'll like it maybe you don't'. It was easy to assimilate into." Paul strongly believes in the program's ideas and described his opinion by stating, "I think it's one of the best programs I've run into and in the county. It has a great attrition rate where people keep coming back." He also explained that his perspective has him shifted due to his son's involvement in the program:

It gives me a little bit different perspective when I can see all the different special needs

kids and adults, because the program goes from the littlest kids all way to 20 years old. I can see a little bit further down the road where [Aaron] might be headed and what his involvement will be. It certainly made a huge difference in my life.

is not only involved in the Moonlight Basketball Program as his son's fun, but he has also become involved as a volunteer coach in the program. He described his observations of parents as a coach and his advice:

For parents, don't give up. That's one thing I have seen with a lot of the special needs parents is they come to [Moonlight Basketball], they drop their child off, they sit in the stands and they look pretty much like they're on their last legs sometimes. And that's the mission of [Moonlight Basketball], is not only for the kids to have fun, but to provide a little bit of respite for those parents who are truly overwhelmed by either their child's disability or these emotional needs. Get involved. It's a trite, politically correct saying that everyone will keep telling you day in day out, every time you have an IEP. But it truly is the way to save your child or to at least try and help them down their path in life. You have to be out there and you have to be a part of it. No matter how difficult their disability, you have to be engaged at some point to further their success.

Rebecca also discussed how the program provides parents with an opportunity to enjoy a typical sports function. Rebecca, a first year parent, believes that:

An organization like this is great for parents because it gives us time to be like regular parents. We get to go and observe our child participating. So that's always nice because with Autism that's not usually what occurred, we're with them all the time. It was great to just see him. He also has a great shot, which I had never knew.

She also mentioned that it had also allowed prompted conversations between family members.

She described the fulfillment it brought the family, “We've been able to you know have fun with the family talking about it and everybody got the picture [individual and team photos] so it just made everybody real positive and really happy.”

### **Characteristics of Moonlight Basketball.**

**Motivation.** Tracy learned about the program “Through another mom.” She made the decision to enroll him in this program “because he doesn't understand the rules and all of that sort of thing about basketball. He just likes to shoot.” They “just wanted him to have fun and experience it and be a part of a team.” They “wanted it to be a positive experience” and “didn't want to have you know any of the outside forces.” Paul learned about the program when he was “at a seminar over at the city of [ABC]. It was a professional growth seminar and they actually had talked about it.” Paul did not join right away he described how he made the decision when he stated:

I think [Moonlight Basketball] was only in its second season right then. Someone said it and it just kind of morphed from there. I saw a flyer for it I thought okay. I was starting to accept the fact that [Aaron] was indeed going to be a special needs child. I went and checked it out. And it was love at first sight.

**Worries.** As a parent it is natural to worry, however Tracy sated that she “would have been” worried about how her son would be treated or interacted with, but that:

Everyone knows about the program. So if you talk to anybody about the program it has such a reputation of being a safe comfortable environment. And the way that the programs ran I mean their reputation precedes itself. Absolutely. I was not afraid at all. Paul was also not worried he explained that his son “had acceptance at the very first day.” He goes on to say that:

Teenage neurotypical children who are ‘normal’ buddy complements can be a little bit skittish but everybody who he’s ever had has been exceptional. They've shown the kind of care and consideration that you wish was more present than normal neurotypical society.”

Jared, a long time veteran to the program stated, “that has never been a concern.”

**Return.** When asked if their children would be returning to the program, all parents said yes. When discussing her thoughts on returning to the program Tracy, a first year parent, shared her excitement of returning for another season. At the end of the season Tracy explained that she noticed something different in how Brandon responded:

One of the things that we noticed at the end of the season is usually when it comes to an end of a season he's like ‘okay I'm done I'm going to retire’. But this year he said that he was he was excited to do it next year. That's the first time we've ever heard him say he's ever exciting to do anything again.

Tracy had no hesitation when answering if she was planning to return next season. “Absolutely. Why? Because [Brandon] says he will. And because it’s the first time he’s ever wanted to do something again,” exclaimed Tracy. Paul shared a similar “Why not?” attitude when discussing if his son would continue the program. “Why not? It's an engaging program. Every year has brought fulfillment on many levels. It's also been an experience for not only my son [Aaron] but for my daughter and subsequently the friends she's made there as well,” Paul explained. Jared believes that, “It’s a nice outlet for him and it’s a nice thing [Robert] and [Erika] put on,” so his son will be back again for his 9<sup>th</sup> season. Rebecca had a similar experience to Tracy, as her son also showed a surprising interest in the program. Rebecca plans to enroll Cory in the program again, as she felt he enjoyed his time during the season. Rebecca shared the following:

I mean he was the one ready to go on Sunday. I was surprised too because three o'clock on a Sunday is not usually something, you know, usually we're home and done with the day. So that was surprising that he was ready to go and he would go get on his uniform and do the whole thing so I think he enjoyed it.

***Recommend.*** All parents have or would recommend the program to other parents of individuals with ASD or other disabilities. Tracy explained that she would “absolutely, no questions” recommend the program to another parent of a child with ASD or another disability. She described the program by saying that:

It's just the repetition of just the idea that it's the closest to normal program without it being normal is amazing. The sensitivity and the understanding that's there, is huge. And I think it's like one of the first time where my son could have a temper tantrum or a fit and I wouldn't be embarrassed or ashamed. You know being able to look up at a parent and say ‘It's my turn,’ it is awesome. You know as opposed to this is not my parenting style, this is not me, this is not a reflection of me either.

Paul explained that he would recommend this program to other parents because he believes, “it's a great way to start. It's structured in such a way that it can be everything or as little as you want it to be all at the same time.” He also noted that:

The success for the parents is really based on the amount of volunteers that we get that come back year after year that really truly understand the need and are happy to be there and gain something themselves out of it, present company included.

Jared said “of course” he would recommend Moonlight Basketball to other parents. He went on to describe a time when he recommended the program, “for instance there is one kid who is new this year. But we knew him from [baseball] league and we actually recommended this. She

signed up. So he was there this year. So it's just a nice thing.”

***Other Programs.*** The parents were asked if their child had any involvement in other recreational activities program including those specifically for individuals with disabilities. Tracy’s son, Brandon, had experience in a traditional ice hockey program “not for special needs kids”. She described the experience by starting:

He did a mainstream ice hockey program for a season and that was a disaster. Oh it was just really hard. It was just loud. He had quite a few meltdowns in that because there were just so many kids and no one understood.

Tracy acknowledged the effort of the players and staff, “They were amazing at trying to accommodate him because they knew that he was Autistic and they did a phenomenal job at being responsive. But it just was really hard. It was difficult for him.” Paul’s son was involved in special needs soccer for some time, but he decided basketball was a better fit. Paul is “presently looking for a swimming program for him.” Paul described the search by saying:

I haven't really looked hard. I know there's other places that are local and then there's one down in [City of XYZ] I'd like to find something close by that is user friendly. I've also looked at Piano lessons for him.

Jared would describe Moonlight Basketball as “a nice thing” to be involved in. Jared and his wife attempted to enroll Thomas in Baseball and Soccer, but Thomas did not seem interested. He described Thomas attitude to the other programs by saying, “in soccer he hated that, baseball he was mmm, actually of anything we've had him in [Moonlight Basketball] he’s had the most interest in. He doesn't fight us on going.” Rebecca and Cory had past experiences with peer supported recreational activities. Cory was involved in a baseball here he had a “mentor” with him at “all times” Rebecca described that, “it's the same people so you get to kind of get a bond

there. Actually [the baseball program is] very similar except for the game as it is different.”

Rebecca’s experiences with peer supported recreational activities prompted her hopes for more inclusive sports programs at Cory’s school. She believes:

It would be great if there would be some way we could get the schools at a higher level if they would allow us to bring in a mentor because I think there'll be plenty of kids that would volunteer to do it. Like this young man he's with right now [in his adaptive PE class] looks like he's ABA trained and he's phenomenal. And I know a lot of those districts have buddy programs and things like that, but it would just be nice that we could do that one step further because I think sports is great especially now when he's going through puberty and adventuring sports is just a nice regulator. And so that would be awesome.

She has stated that:

A lot of [schools] at least from what I see at the junior high they use the Boys and Girls Club and he does attend Boys and Girls Club, but he needs a peer to be with them. So that would be great if I could find that because I think he'd be interested in running, cross country, track and things like that. So that would be wonderful if I could get [his school] to open up to that.

***Uniquenesses.*** The parents were asked to reflect on their involvement in the Moonlight Basketball program and discuss what makes the program unique. Tracy explained that she believes her son enjoyed the program due to:

The consistency of the buddies, the camaraderie, and the importance of all of it and just I mean it was consistent he knew it was a safe place. So loud noises totally disturb him and so he knows that there's no buzzers and there's no you know cheering.

She also described the benefit to some of the norms of the program including everyone getting a chance to shoot and been involved. She noted that during the season:

There was a core of a team of four to five kids and he was one of those four to five kids that basically got the skills down and the maneuvering down. Basically they became quote unquote more of a structured team but they incorporated all of the other kids on the outside. You know everyone gets a chance to shoot. So they all knew even though they we're in the middle of this game there's other kids that need to be involved as well which was really neat to kind of see.

Tracy also enjoyed that the buddy was a peer rather than an adult. She “love[d] that it's someone younger because especially in the pre-teen middle school age the kids start stop looking to you for direction because they know that that's the norm.” She explained what she has noticed during her son’s transition years:

That's what's happened with [Brandon] he's just doesn't look to me anyway because he knows that as a middle school schooler I'm not supposed to do that. So having it be a peer or someone a little bit older is way easier than having it being an adult.

Paul explains that:

One of the saving graces of the program is its consistency. [Aaron] has had the same buddy for four years in a row maybe five. It speaks to the veracity of the program and its impact on these children. They look forward to seeing this person again even though it's a year later.

Rebecca also “like[d] the format with having a buddy,” neurotypical peer support because it provided a peer model. She believes that:

It's really important for him to be involved in sports, especially in team sports, because it

teaches him about a lot about the social nuances that are expected which are really hard to teach these guys especially in like a [special day class] when there's so many that you don't see practice of what is expected. It's just a nice to go and be with the typical kids.

### **Neurotypical Peers**

Neurotypical peers were asked about their peer acceptance and participation in Moonlight Basketball. Neurotypical peers were asked to describe their experiences communicating with a peer with ASD. Neurotypical peers were asked to discuss if their involvement as a peer support has impacted their treatment, patience, confidence, and understanding when interacting with individuals with disabilities. Neurotypical peers were also asked if their involvement as a peer support has changed their likeliness to interact with, bully, include, and stand up for individuals with disabilities.

#### **Social Interactions with individuals with ASD.**

**Communication.** Samuel discussed how his first impressions changed over time. At first he did not feel equipped to communicate with his buddy and felt as if his buddy was unable to understand him. Samuel stated:

It was weird personally I felt like when I first met [Thomas] I didn't really like understand how to work with him effectively. Obviously like we're on different communication levels, but you know my first impression was that he couldn't really understand a lot of what I said.

That quickly changed as he realized his buddy was able to understand him. He described that moment by stating, "But after a while I realized hey he can understand when I talk to him." Samuel mentioned that during the past three years he has communicated with Thomas as he would with anyone else. He described his interactions by saying, "I communicated with him like

normal and you know I didn't try to communicate with him in any specific way.” Samuel also mentioned that Thomas’ communication varied, as he used words, sounds, and non-verbals.

Samuel explained how Thomas communicated by stating:

He doesn't just communicate through words or through sound sometimes you can tell um what he says with his actions. You know what he wants to do if he like goes over to grab the ball and, he has specific patterns like you can tell if he wants to go shoot the ball.

At first Alex struggled to have reciprocal conversation with Gio because, “Well at first he didn't really talk.” Over time Alex was able to start conversations with Gio by treating him just like anyone else. Alex described his interactions with Gio by saying, “Toward the end he started talking more and we had conversations like by the last game. I'd ask him some questions. Start little conversations. Like anyone else, just normally.” When asked she communicated with her buddy she gave the following description, “Just like kind of, you verbalize things and you also kind of have to demonstrate a lot of things.” Karissa was using multiple ways of communication, words paired with non-verbals and demonstrations to communicate with her buddy. David described communicating regularly, “I mean I try to speak to him like the same as any regular person”, however at times needed to speak more carefully, “but sometimes you just kind of like, I needed to talk to him more carefully.” At times David “would just try to talk to him but he wouldn't answer much back.” David noticed that Wilson “liked making a lot of noises,” so he “would sometimes do the same noises.” David was able to engage with Wilson though having “a lot of noise conversations.”

### **Impacts on Personality.**

***Understanding.*** Samuel stated that, “Definitely from the first year I'd say it definitely broadened my understanding of kids with Autism.” Samuel discussed this being his first

interaction with individuals with ASD and other disabilities, “before that I didn’t have many, I didn’t cross paths with many Autistic children or special needs children.” He feels that “being with them and experiencing that over three years,” has given him the opportunity to, as he stated, “broadened my understanding of what it’s like.” Over the course of the season, Alex gained a new understanding that individuals with ASD are just like everyone else once you get to know them. Alex described his newfound perspective when saying:

It got me thinking like everybody or all the people with Autism are just like anyone else. You just need to get to know them better, so he didn’t perform well in big crowds or talking in front of people.

Of those interviewed, Karissa had been a peer buddy the longest. Karissa described how she was able to learn about the differences in people and how no matter the disabilities everyone was able to succeed at a common task, basketball:

I mean going into my seventh grade year and then from now you learn a lot about kind of the differences in the world and the differences in people. They're just like normal people and I don't like to say normal and not normal. They're all like us just like with unique traits that they have about them. But it's like no matter how severe their condition is it's like they can do it like they can all do basketball. So when we all go in and they dribble they can shoot obviously even if just like once the whole season. It's like they all can do it. So that's kind of what's cool about it.

After one season David was given a different perspective on the lives of others:

It gave me a different view of like what people go through like something that we take for granted. Is just like something little, like being able to talk or speak or move or stuff

like that. Just like seeing how like the world could be completely different through someone else's life.

**Patience.** Karissa and Alex felt that patience was needed when interacting with their buddies, however Samuel and David viewed patience as the key to their interactions as their buddies had limited verbal communication. Karissa explained that, “you definitely learn to be a lot more patient and kind.” Alex discussed the importance of being patience, but also believes he was already a very patience persona and that his patience is the “same” after Moonlight Basketball. Samuel explained that he learned that progress does occur over time, but it takes patience and understanding:

I think with [Thomas] specifically I had to garner a lot of patience because you know it might be a whole day where his attention isn't really in the right place and next time you know will have another go at it. You learn that you do make progress over time it just takes patience and understanding.

He also discussed the importance of avoiding frustration when it seems there is no progress being made, “and avoiding being frustrated just because you know it doesn't feel like it's working at the moment.” David knew he needed patience, but was shocked by the amount of patience, “Like I knew you had to be patient but like I was doing it, you have to be like extremely patient, because sometimes it can get out of hand,” David said. David also learned that having more patience helps keep situations calm, “Besides that like just being really patient it just helps it calm or like helps the situation out because there's no point like stressing you know?”

**Self-confidence.** All participants felt that their self-confidence when interacting with individuals with ASD and other disabilities had increased. Samuel recalled times where other

neurotypical peers struggled to interact with peers with ASD or special needs, while he felt confident engaging in the interaction:

I definitely feel, it's funny because sometimes you'll see or I might be with some people and I can't you know describe a specific scenario but if I'm with some friends and we end up interacting with someone who has special needs you can tell that it's awkward for a lot of people they don't know what to do and with me after [Moonlight Basketball] for three years it's like any other interaction and I just talk to them and you know try to deal with them like it's any other person.

David and Alex felt that their confidence had increased due to their new experiences. Alex felt that he “probably got a little more confident” because he now has experience. David felt Moonlight basketball increased his self-confidence, “Because I would know how to like handle the situation because I have experienced it.” Karissa expressed that she feels more than other peers who have not been in peer supported recreational programs:

I mean yeah I think it has brought on my self-confidence a little bit just kind of interacting with kids that have disabilities but with people who haven't been in those programs I feel like they wouldn't just kind of like go out of their way and talk to them.

### **Peer Interactions outside of the program.**

*Interacting with peers with ASD or other disabilities.* The neurotypical peers discussed their peer interactions with individuals with ASD and other disabilities outside of the program. Samuel feels that he is more likely to interact with peers with ASD or other disabilities because he will feel more comfortable and confident. Samuel stated:

I do definitely think more likely, because I know talking to them that I won't feel awkward. I won't feel afraid that you know I'll say something wrong or that I won't be

able to engage with them. Having that understanding makes me feel more confident just going up and talking to them.

Alex believes he is “More likely, because many people just push them away because they’re different. So they don’t have as many people to hangout with or talk to.” Karissa expressed that she feels that she is more likely to interact with peers with ASD or other disabilities as opposed to her other neurotypical peers who have not had similar experiences. “Yeah I feel like I’m a lot more willing to go up to some of them and like other students that haven’t been involved in like special needs programs like that,” she stated. David feels he has more experience and is now more likely to interact with peers with ASD or other disabilities. David explained why he is more likely to interact by stating, “I would say more likely cause like I entered their world in a way. So I can have more experience of how they act and how they interact with people.”

***Bullying peers with ASD or other disabilities.*** When asked about their likeliness to bully peers with ASD or other disabilities, all participants expressed that they were less likely to engage in bullying behaviors. Alex, the youngest peer interviewed, described himself as “Not likely” to bully any peer with ASD or another disability after being involved in Moonlight Basketball. Karissa also explained that she was “less likely” to engage in bullying behaviors after being involved in Moonlight Basketball. However she also noted that at her school she doesn’t see bullying very often of her peers with ASD and other disabilities. She explained, “I mean I don’t see it very often but definitely less likely.” David did not hesitate to say, “I wouldn’t do that.” After his experiences in Moonlight Basketball, Samuel also finds himself getting upset when he sees others bullying peers with ASD and other disabilities. Samuel described his experiences:

I do see people with special needs and sometimes you'll see people kind of snicker at them. At track meets you'll see people and you know they won't run as fast or they'll be doing hurdles and they'll be doing them differently. And you'll see people snicker and when that happens I feel kind of just a little ping of anger because now I understand. I have those experiences through [Moonlight Basketball] and it makes me less likely to make fun of someone with a disability.

***Standing up for peers with ASD or other disabilities.*** On the same topic of bullying, all participants express that they would stand up for a peer with ASD or another disability. Samuel recognized that his is not perfect, but he makes a larger effort now than before participating in Moonlight Basketball. He stated, "I do try and try to stick up for them when I can. I'm not perfect and sometimes I don't, but I'd say I make definitely a larger effort now than if I hadn't done [Moonlight Basketball]." After participating in Moonlight Basketball, Alex believes he is very likely to stand up for another peer with ASD or disability being bullied. He explained why he now feels he would stand up for another peer by saying, "I'm very likely now. There's no difference between them and us, were just the same. I would question why there would be bullying him because he didn't get to choose whether he had that disability or not." Karissa explained that she would tell a bully that there is no difference between individuals with ASD and neurotypical peers, they just have other needs. She stated the following, "I would probably say they're just like us. Honestly like I don't see any difference between Autistic kids and us other than they have other needs that they need I guess but they're just like the normal people." David expressed that he would step in. He described his feeling by stating, "I would because I don't know it just seems like it's unfair. I would stop it. It's not like a cool thing to do."

***Inclusion in the school setting.*** When asked about their opinions on inclusion of individuals with ASD and other disabilities in their schools, all participants believed in more inclusion. Samuel admitted to underestimating the capability of individuals with ASD and disabilities before joining the Moonlight Basketball program. After his experiences, he believes they are more alike than different and should be included more:

Definitely more than before, before I didn't really understand the capability I didn't understand that they were able to socialize in a normal setting and I found that a lot of the kids are able to and they're not as different than a lot of kids feel that they are and I do feel like there's a lot of situations where they could be more included in the educational setting.

Alex believes individuals with ASD and other disabilities should be included more because once you begin interacting with individuals with ASD you learn they enjoy similar things as their neurotypical peers. Alex stated:

Yeah, they should because once you start talking to them and interacting with them they like act the same, like they do the same stuff as everyone else does. You just need to get to know them better. And once you get once you get to know them better, it's just like hanging out with everyone else or doing something with everyone else.

Although inclusion occurs in her Physical Education classes, Karissa explained that she believes inclusion is rare in today's public school system. She would like to see more inclusion especially in the areas of high school sports. Karissa stated:

The thing I like about [Moonlight Basketball] is, like in public schools we kind of separate them from like the rest of us, but [Moonlight Basketball] we kind of like all of them together as one. So that's something that's really rare around here and that's

something that I really like about it. I feel like it's important for them. Like [Moonlight Basketball] we all kind of come together. So I think definitely in school is when you really need to do a lot more of bringing the kids in like together with us. So it's not like we're separating them from the rest of us. I mean you're going to have to separate kids especially in the classrooms because of the speed of learning. And I think that we do kind of bring the kids together like during PE and stuff which is good and that's what I like. But I definitely think we do need to be a little more inclusive probably. I mean just like sports, I know we don't have a lot of special needs kids in sports but it's definitely possible. Like especially like for [Jason] it is possible for him to play on a sports team. So it's like I would want to see that happen a little more inclusive like in the sports that we have here.

David believes that students with ASD and other disabilities should be more involved in the school community. He explained that he is unsure how much they could handle, but believes that they should be able to gain the same high school experiences as their neurotypical peers. David described his opinion on inclusion:

I would think that they should try to involve them more. I don't know how they would like react to like school, high school life. So I mean I think they should do it as much as they can. Like how much the kids can endure of it. And it would be like a good solution so they can get like a good high school experiences through their own eyes.

### **Characteristics of Moonlight Basketball.**

***Motivation.*** The motivation for joining Moonlight Basketball program varied by participant, for example Samuel was recruited through the school's basketball program and joined simply to gain community service hours. He explains thinking, "Yeah I need some

volunteer hours and [Moonlight Basketball] sounds good.” He stated, “I did not know what to expect.” Alex was curious and wanted to see what the program was like, while also wanting “to help out, and get community service” hours. Karissa learned of the program because of her friendship with Jason, the program directors son, and joined soon after watching a game. She described how she started by saying:

I met [Jason] in 5<sup>th</sup> grade. So I started because of him. I think I went when I was in 6<sup>th</sup> grade I went to one of the games and watch and it looked really interesting to me. So I think the following year that was my first year I became a buddy.

David began volunteering after hearing about the program from a friend, but he did not know what to expect because he knew each player would be different. He stated,

I had a friend who has been doing this for a couple of years so he told me about it and I was like ‘Oh I’ll try it.’ It was seemed cool and that’s how I got into it. I had no idea what to expect because I knew that each kid would be different. I had no idea like who I’d be partnered up with anything so I had no idea what I was going into.

**Returning.** Of the four participants, three plan on returning. Samuel does not plan on returning because he will be attending college in the fall out of the local area. However he hopes to return as a coach after graduation. Alex is planning to return to the program because he was able to learn about others and how to interact with individuals with disabilities. Alex explained his decision to return, “Yes, because it was a good experience and I learned more about others and how to interact with anyone or anyone with disabilities. And I’m like better at it I can do it more.” Alex would like to keep his buddy, Gio, because “he was cool to play with and talk to.” Although Karissa is attending college locally in the fall, she plans to continue her involvement.

Karissa believes that the program is making her a better person and brings her happiness. Karissa explained why she continues to volunteer:

Just the kids honestly like they just they make you a better person. It's like they're so happy when you go in and it's like it's hard but you just can't not like not go back when you're like in there it's like you're in there. I don't know it makes me happy to do it every Sunday so it's like I can't just like stop doing it after all these years.

David would like to continue with the program as well working with Wilson. David stated,

I would because it was a cool experience to see and interact with [Wilson] and it was really cool to see him enjoy something that I also enjoy. Seeing him do something I take, like sometimes, normal people could take for granted. So that was really cool. Yeah I would, because I kind of already have like a connection with him.

**Recommendation.** All participants would recommend the program to their peers. Samuel would let others know that he was able to gain a new understanding of himself and others with special needs. Samuel stated,

I would recommend [Moonlight Basketball] and I would say I would tell them about my past experience and I spent three years there and I try to convey to them that I was able to get a new understanding of myself and understanding of special needs kids.

Alex would recommend the program by letting others know “that it was a good experience and you’d be able to learn more about people with disabilities and how to interact with them.”

Karissa would tell a prospective volunteer the following “it changed me in a way and how I kind of just like you get to know people like outside of the normal I guess and just kind of get to experience like other personalities and other behaviors.” David explains that he “would

definitely recommend it because it gives you like a difference for perspective on what people may go through, like other kids younger or your same age like me, and like face with autism.”

**Support.** Samuel believes he was supported well by the coaches and orientation. He felt that being able to interact without training allowed him to learn and develop more. Samuel stated:

With the coaches and Coach [Robert] I think there's a lot there's enough support. I didn't really need that much training. With the orientation I kind of knew what to expect and I think it was good preparation. Without training kind of just going out there interacting with them with your buddy allows you to learn more experience more and develop more and I think that the support from the coaches is enough.

When asked if he would have preferred any formal training Alex stated, “I enjoyed being able to interact on my own.” Karissa believes there isn't training that can prepare you for the interaction encountered. She believes having no expectations is better, because everyone is different despite similar diagnosis. She also explained that simply getting to know then, in her opinion, is the best way to do it. Karissa explained,

There's really no training that anyone can do to put you in that position. I mean I feel like if you go in without any expectations the better off you're going to be because you kind of just like everyone's different. Even two Autistic kids are going to be different so I feel like going in and just getting to know them like one on one is the best way to do it.

David would have liked more support with figuring out way to communicate with Wilson, but he also enjoyed being able to use trial and error. He stated, “ I mean it would have been nice to kind like maybe find out ways he could communicate more. It was also fun finding out what works and what doesn't work with him.”

## **Interpretations**

### **Social Skills**

The current research study aimed to answer the question “How do individuals with ASD’s involvement in recreational activities with neurotypical peers as support impact their social skills?” The researcher hoped to answer this question by examining the relationship between individuals with ASD’s involvement in recreational activities with their neurotypical peers and parent-reported social skills. Social skills were measured by the parent’s answers to questions regarding their child’s cooperation, empathy, communication, and emotion regulation. The researcher hypothesized that involvement in the peer supported recreational activities, like Moonlight Basketball, would be associated with higher parent-reported social skills.

Collectively the parents described a mix of perspectives on the impact of their children's involvement Moonlight Basketball on their social skills. However a common thread was the inclusion of movement and neurotypical peers. Some of the parents reported gross motor movement improving their children's emotional regulation during the program. Other parents believed that the program provided a context to engage in interactions with neurotypical peers and learn about the social skills and relationship building. Despite some of the benefits reported by parents, many parents could not speak to the program's impact on their children's cooperation, empathy, and communication. Due to the limited data regarding the improvement of social skills, the hypothesis cannot be fully supported that involvement in Moonlight Basketball leads to improved social skills. However, there seems to be a connection between the player’s emotion regulation and the gross motor movement included in the game. There also seems to be an improvement of some skills during the program as they are being modeled by neurotypical peers.

### **Friendship Quality**

Along with social skills, this study aimed to answer the question “How do individuals with ASD’s involvement in recreational activities with neurotypical peers as support impact their friendship quality?” The researcher anticipated finding answers by examining the relationship between individuals with ASD’s involvement in recreational activities with neurotypical peers and parent-reported friendship quality. Friendship quality was measured by the parent’s answers to questions regarding number of close friendships, time spent with friends outside of school, activities done together, number of friends gained from Moonlight Basketball. The researcher hypothesized that involvement in the recreational activity, Moonlight Basketball, would be related to better friendship quality.

Despite involvement in Moonlight Basketball, all parents interviewed reported that their children had no traditional friendships that included outside of school communication or time spent together. The data from the parent interview shows that creating lasting friendship is still a difficult task for individuals with ASD and their families. Despite enjoying spending time with other players and buddies at Moonlight Basketball, there seems to be a lack of transfer to other environments.

### **Peer Acceptance**

The current research study also hoped to explore the question “How does neurotypical individuals’ involvement in recreational activities supporting their peers with ASD impact their peer acceptance?” The researcher intended to explore this research questions by examining the relationship between neurotypical peers’ involvement in peer-supported recreational activities with individuals with ASD and self-reported peer acceptance. Peer acceptance was measured by the participant’s answers to questions discussing social interactions with their peer with ASD in the program, impacts on their personality, social interactions outside of the program, and their

thoughts on inclusion in the school setting. The researcher's initial hypothesis was that involvement in the recreational activity, Moonlight Basketball, would be associated with higher self-reported peer acceptance.

When discussing their social interactions with their buddy with ASD during the program it was a common thread that as they got to know their buddy they began to communicate with them just as they would with a neurotypical peers. In terms of the changes in their personalities, all participants reported changes in their personality. Participants felt that they were able to gain a new understanding of individuals with ASD and other disabilities and gained the self-confidence needed to interact with them outside of the program. The participants also reported that through their experiences in the program they are not more likely to interact with other individuals with ASD or another disability and stand up for them in the event of a bully. The participants all seemed largely passionate about their views on inclusion in the school setting. The participants all share the same view that students with ASD and other disabilities deserve to be included to the fullest of their ability. It was evident that the program was able to shed light on individuals with ASD strengths and abilities, which lead to these opinions of increased inclusion.

Overall the responses of the participants showed an overall increase of peer acceptance throughout their involvement in the program even for those who had only been involved from one season. These findings are significant for the field of education and the ASD community as they support the notion of the contact theory (Allport, 1954). The contact theory may have been researched by Allport in 1954, but it still rings true that genuine contact between two conflicting groups, in this case neurotypical individuals and individuals with ASD, can lead to tolerance and eventually acceptance. For three of the four participants, their involvement in Moonlight Basketball was the first time having contact with an individual with ASD. The participants all

felt that their experiences provided them with a new understanding of either themselves or others around them. Through their involvement they experienced a change in their way of thinking and began to not only tolerate and gain awareness of individuals with ASD but also accept them as peers and equal. The most notable realization of these participants was their opinions on inclusion. The more contact they had with their buddy with ASD, the more knowledge they gained about value of having those interactions. These students feel the need to advocate for inclusion based on the first hand experiences that they have had. Communities and schools can use this information to recognize that in order to create an accepting culture their first needs to be genuine contact whether that be through peers-support recreational activities in the community, like Moonlight Basketball, or other programs at the school site. All of these students gained community service hours needed for a graduation requirement, scholarships, or honor society memberships, but most importantly they gained peer acceptance. If school changed their community service requirements to mandate selecting programs where students can gain a new understanding of others, they would be able to begin a culture shift toward acceptance and inclusion.

### **Characteristics of Moonlight Basketball**

Lastly, the researcher investigated the answer to the question “What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?” The researcher examined the relationship between qualities and characteristics of the program reported by the recreational activity directors and parent/neurotypical peer reported perceptions of the recreational activity in order to find common beneficial aspects of the program. Qualities and characteristics of the recreational activity, Moonlight Basketball, was

hypothesized to be associated with increased positive perceptions as reported by parents of individuals with ASD and their neurological peers.

A common thread amongst those involved was the welcoming and inclusive environment felt at Moonlight Basketball. Robert and Erika were motivated to start the program out of a genuine love and care for individuals with disabilities. Their personal motivation for starting the program created a foundation for an inclusive and welcoming environment. The culture formed within the program has impact those involved differently. Parents have found a place where they are comfortable and able to find a support system amongst the other parents. Players are able to be themselves with in a non-threatening environment and enjoy playing a sport. The inclusive environment has also extended itself into how the games are run. For example, the gym is sensory friendly, with no buzzers, and participation of all players is prioritized over the flow of the game.

Another commonly discussed characteristic was the use of neurotypical peers as supports (buddy). These neurotypical supports serve a double purpose. They provide the parents with a chance to enjoy being a spectator at their child's sporting event and also serve as peer models. Over the course of the seasons, players are working with the same peer support adding even more consistency to the program.

Many parents also discussed the normalcy of the program. The Moonlight Basketball program strives itself to be as close to a traditional program as possible, however with an enormous amount of flexibility in order to meet the needs of all players. The players have a consistent team, coaches, buddies, and uniforms. The data collected from parents shows that they enjoy being able to engage in what is viewed as a typical parent involvement, watching a sporting event. The children's involvement in a sports activity has provided the parents with a

sense of pride and in some cases even prompted other family member involvement. This sense of normalcy can provide parents with a time where they can celebrate what their child is capable of accomplishing and families with a typical childhood experience.

### **Conclusion**

Overall the purpose of this study is to explore the impact of participating in peer supported recreational activities on both the individuals with ASD and the neurotypical peers providing support. The study also hopes to examine what characteristics make a peer supported recreational activity effective. The data will be presented in the form of quotes transcribed from the audio recorded interviews from neurotypical peers who support a peer with ASD, parents of individuals with ASD, and program directors of Moonlight Basketball. The data was analyzed by separating quotes into common themes. Neurotypical peers quotes were divided into the following themes social interactions, impacts on personality, peer interactions, and program characteristics. Parent's quotes were divided into the following themes social skills, friendship quality, and program characteristics. Program Directors quotes were categorized by program characteristics.

Overall there was a lack of data to support the hypothesis that Moonlight Basketball improves individuals with ASD's social skills in the areas of cooperation, empathy, and communication. However there was some data to support a possible connection between gross motor movement and emotion regulation. There was a lack of evidence to support the hypothesis that involvement in Moonlight Basketball increases friendship quality. The development of traditional friendships outside of programs and school seems to be an area of need for individuals with ASD and their families.

Overall there was a large amount of data to support a connection between a neurotypical buddy's involvement in Moonlight Basketball and their peer acceptance. There was data to support an increase in understanding, likeness to interact, willingness to be an advocate, and desire for inclusion in the school setting.

After synthesizing the common threads the main effective characteristics were the inclusive environment, peer supported format, and normalcy of the program. The environment was welcoming and sensory friendly many families felt included and understood. The neurotypical peer supports provided a peer model that many individuals with ASD may not have access to in other settings. The normalcy of the program allowed parents to engage in a traditional sporting event with teams, uniforms, team photos, team parts, and most of all being able to be their child's fan.

As the next chapter will discuss the social implications of the Moonlight Basketball program the researcher felt it was necessary to inquire about what the parents of children with ASD would like to share with members of society. During the interview, parents of individuals with Autism Spectrum Disorder were asked if they had any messages they would like to give to their children's neurotypical peers or to the parents of neurotypical children they interact with in the community. Many parents thought long about what they would say, but all messages provided an insight into their experiences. Tracy stated:

Yeah I think just there's a sensitivity to each individual that you really can't, you just can't pass assumptions. Yeah you can't just lump everybody into the same box of crayons you know. I think it just depends on the situation, but in that community I think people are becoming more and more educated on the idea of Autism and how it affects everybody and they really do need to really understand that it is not, it's a neurological

issue, and it's not something to be afraid of and it's not wrong and it's not bad. You know it just takes a little bit of patience and understanding, and really listening to what they're saying.

Meanwhile, Jared had a message that was direct and reflected what he encounters in public settings, "When he squeals don't stare." Rebecca stated:

Of course you can imagine when we were younger we got a lot of looks because people just thought he was out of control. I don't know. I guess if they have a question do you feel free to come up and ask instead of just making a judgment or pulling your child away. You know you think there's a problem especially if he's demonstrating any like vocal outburst or something like that and it concerned you. I've always told typical parents that what our Autistic children do their children do ours just do it a whole lot more. So it's more recognizable but in earnest it's very similar to what they have experienced themselves so maybe just to try and engage people instead of making the judgment.

When asked to provide a message to his peers Paul made a recognized the exceptional people his son has encountered, but hoped for change amongst others:

To his peers I would say as a society at large we are self-absorbed with all of our technology and all of our distractions. It's those few exceptional people. That will take the time to look forward and see a need. If I have to say something to the rest of them why don't you try and be a little bit more like people, like [volunteers at Moonlight Basketball]. No matter how distracted they are and how they fit in with their neurotypical peers, they also have that component of empathy and compassion and understanding.

Instead of just shaking their head and walking away and you know and ‘oh that kid's stupid.’ They are by and large grossly uneducated as far special needs.

Jared, again provided a direct statement, “All I would say is that he's a lot smarter than you think he is.” However, his statement is all encompassing of the viewpoint of many parents. Individuals with ASD and other disabilities at times may be disregarded in today’s society due to misinformation or lack of education. However, programs like Moonlight Basketball have the opportunity to educate neurotypical peers and them to be advocates for change. The following chapter will provide a recap of the interpretations of the impact of peer-supported inclusive recreational activities. The chapter will also explore the societal implications of programs like Moonlight Basketball and provide directions for further research in the area of creating inclusive communities through recreational activity programs.

## Chapter Five: Thesis Recommendations

Many individuals with ASD are less involved in recreational activities than their neurotypical peers. When involvement does occur, individuals with ASD are normally only physically integrated as opposed to socially integrated. Research has also show that most recreational activities are adult or parent supported rather than peer supported. This study focused on peer supported recreational activities with the hopes of helping fill the void in research that exists in the area of peer supported involvements of individuals with ASD. This study set out to explore the impact of participation in peer supported recreational activities on individuals with ASD and their neurotypical peers involved. The study also hoped to explore what characteristics make a peer supported recreational activity effective. Specifically the study attempted to answer the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?

This research study used qualitative data gained through interviews of the two program directors of Moonlight Basketball, four parents of individuals with ASD who participate in Moonlight Basketball, and four neurotypical peers who support individuals with ASD in Moonlight Basketball. The program directors were asked information about the qualities of their peer supported program. Parents were interviewed about their children's social skills, friendships,

and impact of being involved in a peers supported program. Lastly, peers were asked about their social interactions, peer interactions, and impact of being involved in a peer supported program.

The interview responses were analyzed by locating common themes articulated by directors, parents, and peers. This chapter will provide in depth information about the interpretations of data collected from this research study, the lessons learned by the researcher, and the societal implications. This final chapter will also provide the reader with a description of the limitations of this research and further research directions.

### **Interpretations**

There was a lack of data to support the hypothesis that Moonlight Basketball improves individuals with ASD's social skills in the areas of cooperation, empathy, and communication. However there was some data to support a possible connection between gross motor movement and emotion regulation. There was a lack of evidence to support the hypothesis that involvement in Moonlight Basketball increases friendship quality. The development of traditional friendships outside of programs and school seems to be an area of need for individuals with ASD and their families. Overall there was a large amount of data to support a connection between a neurotypical buddy's involvement in Moonlight Basketball and their peer acceptance. There was data to support an increase in understanding, likeness to interact, willingness to be an advocate, and desire for inclusion in the school setting. After synthesizing the common threads the main effective characteristics were the inclusive environment, peer supported format, and normalcy of the program. The environment was welcoming and sensory friendly many families felt included and understood. The neurotypical peer supports provided a peer model that many individuals with ASD may not have access to in other settings. The normalcy of the program allowed parents

to engage in a traditional sporting event with teams, uniforms, team photos, team parts, and most of all being able to be their child's fan.

Together this data shows that although there are benefits to the individuals with ASD in terms of pure enjoyment, the program may be providing more impactful benefits to the two other groups involved, parents and neurotypical peers. Even though some of these impacts may have been unintentional, it is very clear that parents and especially neurotypical peer supports are gaining more than anticipated for being involved in this program.

### **Societal Implications**

This program can serve as a model for other communities as a stepping stone to create a more inclusive community. This program has a high return rate for its neurotypical peer supporters and players with ASD and other disabilities. Throughout the data collection it was clear that those interviewed, neurotypical peers and parents, would return or recommend joining the program. The high return rate may be due to some of the characteristics and benefits discussed. Other communities should explore ways to use the information gathered from this case study to develop or improve their local inclusive recreational activities. One stand out piece of information gathered should be analyzed deeply. Paul's son was able to become apart of a team at his high school by using the skills and confidence he acquired from Moonlight Basketball. Although this might not be feasible for all individuals with ASD, I think it should be noted that this is a hope for many of the parents in the ASD community. Rebecca, for example, discussed hoping that one day her son's school would be open to including him in sports programs. Through my research on peer supported recreational activities, it seems they are not reliably available for families. Of the four parents I interviewed only two were local while the other two would have to drive anywhere between 30 and an hour depending on traffic to attend

Moonlight Basketball. The support systems gained by the parents and the profound impact on the neurotypical peers are seem to be two of the major unexpected benefits of the program.

However, one should not look over the joy it bring the players to be apart of a team and feel included.

Many parents of individuals with ASD question if their child can be successful and if they will benefit from recreational activities. Even more neurotypical peers questions if they have the ability to interact with individuals with ASD. However through this case study it was evident that individuals with ASD are able to participate in recreation activities and no difference was see based on the child's communication ability. This research also shed light on the myth that neurotypical peers are not able to communicate with individuals with ASD. Every neurotypical peer interviewed described a transformation they underwent, even in just one season. This newfound understanding may be the biggest unforeseen benefit of the program. The neurotypical peers in the program will hopefully take what they have learned in Moonlight Basketball and apply it in their schools. Eventually these peers will reach adulthood where their impact may extend their school and reach their community as they become more accepting members of the community. By empowering neurotypical peers to be advocates for those with ASD and other disabilities simply through the game of basketball, it may create a lasting social impact as they will one day raise, mentor, and guide the new generations.

### **Limitations of Research**

Despite the careful preparation that went into this research study, I am aware of its limitations. First, the sample size of this study was kept small due to time constraints. The participants included two program directors, four parents, and four neurotypical peers. Although the sample size was appropriate for a qualitative study, the results found in this research cannot

be generalized to the perspectives of the larger population. Instead, they should only be viewed as a snapshot perspective of these individuals within the Moonlight Basketball program. Second, response bias may have had an impact on the responses of the participants. The participants may have been engaging in social desirability by responding to questions in a manner they believed would be viewed as favorable by the interviewer. Lastly, I was apart of the Moonlight Basketball program for 3 seasons as a buddy and 2 seasons as a coach. Although I objectively wrote this thesis, I know this may have added unintentional bias to my research. For example there may have been unforeseen body language or changes in tone of voice that may have swayed the responses of participants.

### **Future Research Directions**

Further research is still needed in the area of peer supported, inclusive recreational activities to fully grasp the significant benefits that were seen in the Moonlight Basketball program. This study highlights the need for better understanding of the complex dynamics surrounding children with ASD's social experiences, which may pave the way for improved strategies for inclusion of children with ASD in meaningful recreational activities and related interventions. Future research should attempt to expand this research in order to produce more meaningful results. Future researchers should increase the sample size by looking into a variety of peer supported programs and include individuals that represent the diversity of the Autism Spectrum. They may even consider comparing the differences in responses between peer supported and adult supported programs. As this research only focused on qualitative data, future researchers should consider using surveys in order provide more quantitative data and coded observations in order to triangulate the results.

### Summary

Children with ASD experience difficulties in social interactions, communication, and engage in restricted, repetitive behaviors or interest (Harstad et al., 2014; Neal & Hattier, 2012). These symptoms may hinder a child's ability to develop and maintain quality friendships. Children with ASD have a harder time making friends compared to their neurotypical peers, these hindrances may be stemming from core social-cognitive difficulties and ASD symptoms. Recreational activities may provide an important social context for children to develop these social skills and friendships. Current research has found that recreational activities have influenced neurotypical children's personal and social skills, including self-perceptions, positive social behaviors, feelings and attitudes (Durlak et al., 2010). Neurotypical peers may find it difficult to interact with and include peers with ASD due to many of the symptoms of ASD. Research has found that various peer training programs can create more inclusive environments and promote more social initiation from children with ASD (Owen-DeSchryver et al., 2008).

As these programs are not readily available for all, families with children with ASD seek out additional social opportunities, in the form of peer supported recreational activities that might facilitate connections. Many neurotypical peers do not have access to or would not be interested in peer training programs, however may be drawn to participating in a less structured recreational activities environment where peer acceptance can also be developed. The purpose of this study was to explore the impact of participation in peer supported recreational activities on individuals with ASD, and their neurotypical peers. The study also hoped to explore what characteristics make a peer supported recreational activity effective.

Specifically the study tried to answer the following questions: (1) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their

social skills? (2) How do individuals with ASD's involvement in recreational activities with neurotypical peers as support impact their friendship quality? (3) How does neurotypical individuals' involvement in recreational activities supporting their peers with ASD impact their peer acceptance? (4) What qualities and characteristics does a peer supported recreational activity need in order to be beneficial to those involved?

The current study used a peer supported recreational activity, Moonlight Basketball, as the focus for attempting to answer the research questions. Interviews were conducted with program directors of Moonlight Basketball, parents of individuals with ASD who are involved in Moonlight Basketball, and neurotypical peers who support peers with ASD in Moonlight Basketball. Interview transcripts were coded for common themes within each population group. The responses from the neurotypical peers were divided into the following themes social interactions, impacts on personality, peer interactions, and program characteristics. The responses from the parents were divided into the following themes social skills, friendship quality, and program characteristics. The responses from the program directions were categorized by program characteristics.

Overall the data analyzed showed that the greatest impact seemed to be the unforeseen transformation of the neurotypical peer volunteers in the program. These neurotypical peers' time in the program create transformations in their perspectives as well as their actions. If experiences of these four individuals mirrors that of others in the program, the program may be having a great impact on the community than anticipated. These neurotypical peers are taking all of the new understanding they've gained and applying it to their interactions in the school and local community. If this program continues to grow and enrich the lives of parents and

individuals with ASD, there is a chance it will also continue to help develop accepting neurotypical advocates.

Although the study was cautiously planned and executed, there were still limitations through the process. The limitations include small sample size, possibility of response bias, lack of causation or correlation, and possibility of researcher bias. Future research should attempt to expand this research in order to produce more meaningful results by increasing the sample size, comparing different programs, and including various sources of data.

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### Appendix A: Letter of Support



December 19, 2016

To whom it may concern,

We are writing to show our support for Jocelyn Frierson's proposed research project, The Social Impact of Participation in Peer Supported Recreational Activities on Individuals with ASD and their Typically Developing Peers. We believe Jocelyn's proposed research project will greatly benefit the Autism community, current research, and future inclusive recreational programs. We founded and are the current directors of the [redacted] a special needs basketball program. Our program was created as an inclusive program designed for children ages 5-22 with a variety of disabilities (including Autism, Down Syndrome and other physical and mental disabilities) to learn and enjoy the game of basketball in a fun, non-competitive environment. We have known Jocelyn for 13 years. Of those 13 years, she spent 5 participating in our program as a volunteer buddy (2009-2012) and coach (2015-Present).

We are pleased to offer our support by providing enrollment information of our volunteers and parents, which may include contact information and number of seasons participated. We eagerly anticipate collaborating on this research project.

If you have any questions please feel free to contact us



12/19/16

Date



12/19/16

Date

## Appendix B: Interview Questions - Program Directors

### Interview Questions

*Program Directors of Moonlight Basketball.* The researcher will ask the following questions to gather data for research question 4. However, the interview will be fluid and other questions may arise due to the nature of an interview.

1. Tell me about the program?
2. What was your motivation for starting the program?
3. How do you believe this program impacts, individuals with ASD, their parents, and the neurotypical volunteers? In the areas of social skills, friendship quality, parent support, and peer acceptance
4. How is this program similar to other programs?
5. How is this program different than other programs?
6. What characteristics makes your program unique?
7. What goals or visions do you have for the future of this program?

### **Appendix C: Interview Questions - Parents of Individuals with ASD**

#### **Interview Questions**

*Parents of Individuals with ASD who participate in Moonlight Basketball.* The researcher will ask the following questions to gather data for research question 1, 2, and 4. However, the interview will be fluid and other questions may arise due to the nature of an interview.

1. Tell me about your child? How old are they? Are they male or female?
2. Does your child have any other diagnosis other than ASD?
3. How many seasons has your child spent in [Moonlight Basketball]?
4. During the season how often does your child attend?
5. How interested is your child in participating in [Moonlight Basketball]?
6. What is the impact [Moonlight Basketball]? has had on the quality of his/her friendships?
  - How many close friends does your child have (non-relatives)?
  - How many of your child's friends were gained from his/her involvement in [Moonlight Basketball]?
  - Do most of your child's friends have ASD, another disability, or are they neurotypical peers?
  - How much time a week does your child spends with his/her friends outside of school?
  - What activities does your child engage in with his/her friends?
7. What is the impact [Moonlight Basketball] has had on the quality of his/her social skills in the following areas? cooperation with other peers (working together with peers), empathy (putting themselves in other's shoes), engagement in social interactions

(wanting to be involved in socializing), communication abilities (able to have reciprocal conversations), emotion regulation (self- regulating emotional situations)

8. How has [Moonlight Basketball] impacted your life? Have you made connections with other parents through [Moonlight Basketball]?
9. Do you plan on returning to the program? Why?
10. Is your child involved in any other similar programs? What makes those programs similar to [Moonlight Basketball]? What makes [Moonlight Basketball] different than those programs?

## Appendix D: Interview Questions - Neurotypical Peers

### Interview Questions

**Neurotypical Peers who Support Individuals with ASD in Moonlight Basketball.** The researcher will ask the following questions to gather data for research question 3 and 4. However, the interview will be fluid and other questions may arise due to the nature of an interview.

1. Tell me about yourself? How old are you? What grade are you in?
2. How many seasons have you volunteered with [Moonlight Basketball]?
3. What have been some of the successes you've had in your time volunteering?
4. What have been some of the struggles you've had in your time volunteering?
5. How do you communicate with your buddy?
6. How does your buddy communicate with you?
7. How has volunteering impacted your personality?
8. How has volunteering impacted how you treat others with or without disabilities?
9. How has volunteering with [Moonlight Basketball] changed you in the following areas (Higher, About the same, Lower)? Your patience when interacting with individuals with disabilities is? Your self-confidence in interacting with individuals with disabilities is? Your understanding of individuals with disabilities?
10. How likely are you do the following (Not likely, Somewhat likely, Very likely)?
  - Interact with students with ASD or other disabilities?
  - Include students with ASD or other disabilities in events and activities at your school?
  - Bully students with ASD or other disabilities?

- Stand up for a student with ASD or other disabilities if other peers or bullying him/her?

11. Do you think you will return next season and why?