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Teaching Leisure Skills to Developmental Disabled Children and Facilitating Interaction with Typically Developing Peers through Playing Hockey

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Abstract

Children with disabilities often require specialized instruction to relate socially with peers. A match in interest with typically developing peers could increase interaction, specifically in participation in a recreational activity. The first goal of this study was to provide individuals with Autism and other developmental disabilities the opportunity to participate in the game of ice hockey. Next, we integrated the players with typically developing peers while playing hockey. A secondary goal of this study was to incorporate a service-learning component with college students with an interest in hockey. We hypothesized that the hockey experience would have a positive effect on the lives of the participants and their parents. This was measured by parent/child surveys completed each week. The participants all had a disability on the autism spectrum. For two of the participants, data was taken on their interaction with therapists and their typically developing peers. Our outcomes suggest that developmentally disabled children can engage in hockey with typically developing peers in a recreational setting such as hockey in a functional and meaningful manner. Specifically the game of ice hockey provided leisure awareness within a recreational activity and increased the opportunity for interaction with typically developing peers.

Keywords: Ice Hockey, Autism, Leisure Skills, Subjective Evaluation, ASD

1. Introduction

Children with disabilities often require direct intervention to connect socially with their peer, and frequently lack the social skills to interact with those around them (1). Typically, the only relationships that individuals with disabilities have are with family members, other individuals with disabilities, and paid staff (2). One important criterion for community leisure participation by young people is engaging in activities with friends (3). Relationships with people beyond the immediate family are essential because it forms the basis for social contact and increases the opportunity for social integration (2). Without effective social skills, students are less likely to be accepted by their peers and leisure participation can be almost non-existent (4). Consequently children with limited social skills are more likely to demonstrate problem behavior that reflects negative attitudes by teachers and their peers (2). Although children with high-functioning autism display impairments in social skills, they appear to have a desire for social involvement and recognize when it is lacking (5). Interventions delivered in an outpatient setting can be quite effective in enhancing the acquisition of social skills for children with autism but still fall short of teaching these children to competently perform these skills in the natural environment (5). Children with autism can acquire certain social skills, but they may lack the ability to consistently discern appropriate times to put this knowledge into practice. Deficits in social skills can result in fewer social exchanges with peers, fewer successful initiated contacts with friends, and relatively fewer opportunities for community inclusion (6).

Individuals that have little or no exposure to typically developing peers have fewer opportunities to develop social relationships and friendships with nondisabled children of their same age (4). Through leisure education individuals can develop skills that facilitate their participation in social groups (7). Leisure activities that include typically developing peers can provide children with disabilities the opportunity to build friendships. Social skills are often taught to give children with disabilities the tools needed to interact with their peers. Research has demonstrated that children with developmental disabilities can be taught to play games (with modified rules) with typically developing peers (8).

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Studies have shown that after receiving training in leisure skills with peers using computer assisted leisure education, children with disabilities improved their social skills (6). Inclusive recreation and leisure activities can be a key component for increasing the quality of life of children with developmental disabilities (2). Additional research has revealed that parents of children with disabilities see the benefits of recreational activities on their child with developmental disabilities (9). Parents have shared that recreationally activities gave their child a chance to feel more connected to the community. In studies where developmentally disabled children learned a skill such as bowling they were able to generalize playing the games with their typically developing peers (3). Recreational activities done with both developmentally impaired and typical developing peers has shown to have a positive impact on all involved.

Although interaction between typical developing peers and individuals with developmental disabilities is beneficial, it is equally as important for the people working with their children. It is common for people a community to have little or no contact with students with developmental disabilities (10). Often the first time an individual is involved in a service learning practicum with children with developmental disabilities they don't know how to interact with the children. Lack of exposure many times leaves those individuals feeling unqualified (10). The benefits of service learning are a reduction of negative stereotypes and an increase in tolerance for diversity, finding reward in helping others, increased ability to work with others, increased leadership skills, increased feeling of being connected to a community and an increased connection to the college experience through closer ties to students and faculty (11). Service learning can help students develop empathy for parents of children with disabilities, as well as help them begin to understand the nature of the parent-professional partnerships (12). Many students come to the realization that their own attitudes, beliefs, and practices play a critical role in the success of those that they are working with. It gives students an opportunity to make the connection between what they have learned in the classroom and the real world (13). Furthermore it shares the responsibility for student learning with teachers, the students themselves and the community. The students, in collaboration, are able to develop a plan with community partners or serving community members (people with disabilities). Classroom only instruction lacks the reflective learning that transfers to real world settings. Service learning enhances applied learning and also adds value to the quality of learning beyond what is possible within the classroom.

A second benefit of our program in specialized hockey is that it offered college students that play hockey a chance to give children with disabilities the opportunity to participate in hockey. Service learning students working with special needs children should have the understanding that many of these children have not had the opportunity to play sports with their typically developing peers (14). Many are faced with disappointment after trying a few sports that they had a difficult time playing and often times quit. Some find other programs especially for developmentally disabled. Many of

them turn to Special Olympics, which is a wonderful place to turn. However, if the love is ice hockey, Special Olympics doesn't offer this sport. These are the athletes for whom US specialized hockey was created. Those that are working with children with disabilities must be prepared to become a student of the disability, must have a knowledge of the game of hockey, and the ability to adapt traditional coaching methods to special needs athletes.

We hypothesized that a match in interest with typically developing peers could increase interaction, specifically in participation in a recreational activity. The goal of this study was to provide individuals with Autism and other developmental disabilities the opportunity to participate in the game of hockey as well as eventually be integrated with typically developing peers while playing hockey. The secondary goal of this study was to incorporate a service-learning component with college students with an interest in hockey. Specifically we hypothesized that the hockey experience could have a positive affect on the lives of the participants and their parents.

2. Methods

2.1 Participants and Setting

The participants of this study were eleven children ranging in age of seven to eighteen years old. All had been previously diagnosed with autism spectrum disorder by a developmental pediatrician or a licensed psychologist. They all attended a local elementary, middle, or high school in the Inland Northwest. Four were in a specialized classroom for children with developmental impairment that required a special education teacher and two instructional assistants. The other children were enrolled in a mainstreamed classroom with typically developing peers and received instruction for part of the day in a resource room. The university service-learning participants were six hockey players from the Gonzaga Hockey Club that demonstrated and taught each of the participants to play hockey. The number of players available per practice ranged from four to six. Two parents of the participants also aided the hockey club with facilitating each of the practices.

Separate research was conducted with two participants that were in the self-contained classroom. These two participants were James and Jill. James was a 14 year-old boy with autism. He had severe social and communication deficits. In the past he had a difficult time interacting with his peers in a social setting. He was in an autism behavioral learning environment (ABLE) classroom and had very few opportunities to interact with his typically developing peers. Jill was an 18 year-old girl with autism. She had severe behaviors that ranged from kicking, hitting and pulling hair to self-injurious behavior of hitting her head with both hands to hitting her leg. She preferred to be by herself and had difficulty interacting with adults or her typically developing peers. She was a twin sister who also has autism.

The setting was an ice arena located in a large urban city in the Pacific Northwest. The building housed the local youth hockey association as well as the figure skating association. There were two rinks in this facility and this project took place on rink two. The rink was surrounded by 3-foot wall with about three feet of thick clear glass above it. The clear

glass part only surrounded about half the rink. The lighting was bright and it was a relatively noisy setting.

3. Materials

Materials used for this project were purchased by a grant received by the Gonzaga specialized hockey team from various sources. A helmet with a cage (face mask), elbow pads, gloves, shine pads, skates, and a stick were provided for each of the players as well as purchased ice time for each session. Parents were required to provide a one hundred dollar deposit that was returned to them at the end of the season. Each participant was a member USA hockey association as part of this project, and the 30 dollars fee was waived the first year of participation.

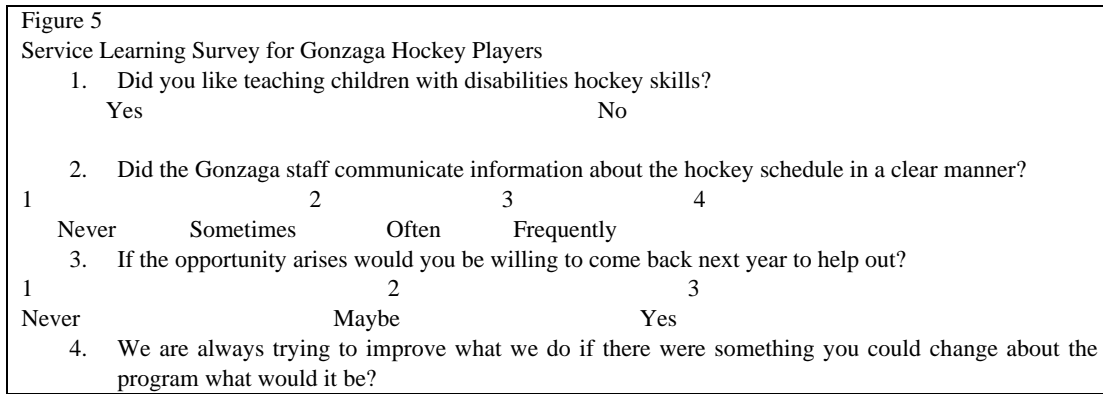
4. Data Collection

Satisfaction with the hockey program was measured via a survey, developed for this investigation that was given to each family each week. This survey included questions for the participant his or her parents and his or her teacher. The participant was asked to answer three questions at the end of each practice (Figure 1). These questions included how the participant liked practice that day, if he or she wanted to come back the next week, and how much he or she liked hockey that week. The researchers also asked the open-ended question of how the researchers could improve the practices. The parents were also asked to take home an interaction log (Figure 2). This asked the question of how

much their child discussed hockey each day through the week. Each day had the choice of once per hour, at least once in the morning or afternoon, rarely or never. Parents were also be asked to give the child’s teacher a survey to indicate if the child discussed hockey at school throughout the week (Figure 3). This survey had the same questions asked of the parents in part B of the survey. The survey also included questions specifically for the parents about the program (Figure 4). It asked how disruptive the hockey was to their schedule, if their child expressed any problems with hockey, the overall interaction with the therapists, if they would recommend the program to friends, their satisfaction with the program and the benefit of the program for their child. The last survey was given to the Gonzaga hockey players one time on the last day of practice (Figure 5). It asked how they liked teaching children with disabilities, if given the opportunity would they come back to help the following year and did the Gonzaga staff communicate information about the hockey schedule in a clear manner. Data was taken on a six-second-interval data collection sheet for James and Jill’s interaction with peers and therapists. Interaction for James was recorded with a plus and interaction for Jill was recorded with an O on the data sheet. Data on interaction was marked during each six-second time frame. All sessions were video taped and scored after the sessions were completed. An interobserver took reliability separately. Agreements were divided by agreements plus disagreement to determine reliability.

<p>Figure 1 Student Questions: Please ask your child the following questions:</p>			
1) Was Practice	Fun	OK	Terrible
2) Do you want to come back next week	YES	NO	
3) How much do you like hockey this week.	A lot	It is OK	I hate it
<p>Figure 2 Parent Interaction Log: Please fill out every day this week</p>			
<p>Saturday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never
<p>Sunday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never
<p>Monday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never
<p>Tuesday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never
<p>Wednesday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never
<p>Thursday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never
<p>Friday: How much did your child discuss hockey today.</p>			
At least once per hour	At least once on the morning	Rarely	Never

And once in the afternoon				
Figure 3				
Teacher Interaction Log: Please fill out every day this week				
Monday: How much did _____ discuss hockey today.				
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never	
Tuesday: How much did _____ discuss hockey today.				
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never	
Wednesday: How much did _____ discuss hockey today.				
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never	
Thursday: How much did _____ discuss hockey today.				
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never	
Friday: How much did _____ discuss hockey today.				
At least once per hour	At least once on the morning And once in the afternoon	Rarely	Never	
Figure 4				
Parent Satisfaction Survey				
Name: _____ Dates of Service: _____				
Address: _____				
Phone: _____				
1) On a scale from 1 to 5, would you say that your child benefited from therapy?				
1	2	3	4	5
no	little benefit	normal benefit	somewhat improved	beyond my expectations
Comments:				
2) On a scale from 1 to 5, how disruptive was the program on your child's schedule?				
1	2	3	4	5
very	little	as expected	somewhat	very
Comments:				
3) Would you recommend a program like ours to your friends?				
yes/no				
Comments:				
4) Overall, how would you rate your interactions with our therapist(s).				
1	2	3		
unprofessional	typical	very professional		
Comments:				
5) Have you been satisfied with the program.				
1	2	3		
very dissatisfied	satisfied	very satisfied		
Comments:				
6) Has your child expressed any problems with his/her involvement to you?				
Yes/No				
Comments:				
7) We are always trying to get better. Do you have any ideas regarding how to improve our services.				



5. Research Design

The design of the first part of the study was a descriptive evaluation across surveys. The aim was to investigate whether or not hockey could have a positive impact on the lives of individuals with developmental disabilities and established that service learning college athletes could successfully teach children with disabilities how to play hockey. To ensure an accurate measure of positive impact, parents of the participant were requested to facilitate filling out the child survey immediately after practice all sessions were videotaped. The second part of the study was evaluated using a single subject design (15) that examined James and Jill's interaction with therapists.

6. Procedure

Participants were involved in a weekly 60-minute practice in which the Gonzaga hockey club participated as therapists. They taught the participants the basic skills of hockey. A typical practice consisted of the participants entering the ice for 20 minutes of practicing puck handling and shooting into one of the nets placed at each end of the full sheet of ice. Therapists aided participants at each of the nets. Participants were then taught different drills for an average of 10 minutes to improve hockey skills. These drills consisted of skating the circles, skating and dropping to their knees, skating backwards and using weight resistance by pulling a partner, all to improve skating and mobility skills. At this point the therapists moved the hockey nets to one side of the ice for a 30-minute scrimmage. Therapists facilitated the scrimmages and demonstrated where each participant needed to position themselves as well as where they needed to shoot the puck. In the last part of the study typically developing peers were brought in for four sessions one of which a full sheet of ice was employed. This was done to enhance interaction. These players were from a peewee B travel team. They were teamed up with the participants and games were played.

On an individual basis, therapist and peer interaction was measured with James and Jill. For baseline no requests to interact with therapists was required. If James and Jill were asked to interact and they refused they were allowed to move away from the person requesting the interaction and either skate alone or step off the ice. Interaction was defined as the participant staying within the same area with peers and therapists for at least 5 seconds. They had to stand in a position in which they were facing the direction of the rink

and individuals playing hockey. If James went over to the side of the ice he was given the choice of break or hockey. If he chose break he was allowed to leave the rink for two minutes then the choice of break or hockey was offered again. If he chose break again he could have another two-minute break and if he chose hockey he went back on the ice. A timer was set for Jill and when she went to the side of the ice a therapist outside of the rink would show how much longer she had to stay on the ice. However if Jill requested a break she was allowed to leave the ice for a two-minute break. Also Jill was allowed to skate back and forth on the ice with no therapist interaction for the first ten-minutes of practice.

There were six conditions conducted with James and Jill. The first condition was with one trained therapist on the ice with James and Jill. The trained therapist was defined as a hockey player that had training with developmentally disabled individuals and had a good knowledge of the game of hockey. The trained therapists would teach James and Jill simple hockey skills described earlier and facilitate their interaction with peers during scrimmages. The second condition was with two trained therapists on the ice with James and Jill. In this condition both therapists would do the same as the one therapist did in condition one. The third condition was with no trained therapists. The untrained therapists were defined as a hockey player with little or no experience working with children with developmental disabilities but had a good understanding of the game of hockey. In this condition no trained therapist were on the ice with James and Jill. The fourth condition was with typically developing peers. In this condition the peewee B team performed drills and scrimmaged with the specialized hockey team. No trained therapists were on the ice with the team. The fifth condition was with typically developing peers and two trained therapists facilitating interaction. The sixth and last condition was with typical peers and with one trained therapist facilitating interaction with James and Jill.

7. Interobserver Agreement

Was taken for 37% of the sessions. The number of correct and incorrect responses was used to compare the observer's agreements and disagreements to determine reliability. Reliability for James Jill ranged from 90% to 100% with a mean of 98%.

8. Service learning survey results

For the three surveys returned by the college students at the end of the sessions indicated “yes” to liking to teach children with disabilities. Only one answered the question of “Did the Gonzaga staff communicate information about the hockey schedule in a clear manner?” That answer indicated that the staff did frequently communicate information. There were no answers for never, sometimes or often. For the question of, “If the opportunity arised would you be willing to come back next year to help?” all answered yes. There were no answers for maybe or never. One of the college students commented that he would like more college students to attend practices and one students commented that he would like the team to have more practices.

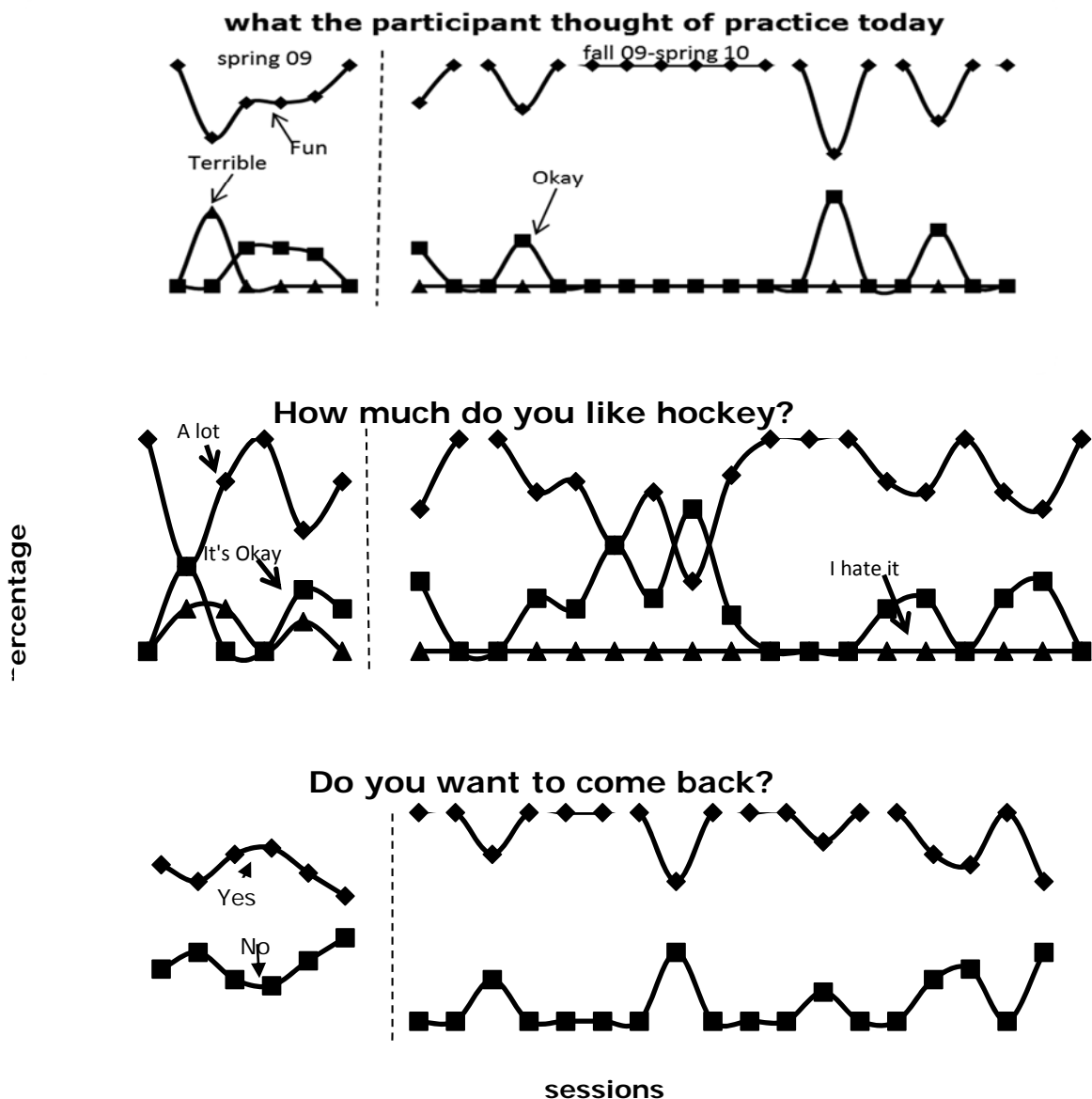
9. Results

The results for the survey given to parents were taken over 25 sessions from the spring of 2009 to spring of 2010. The response to surveys ranged from 2 to 7 completed surveys each week with an average return per week of five. Parents of the participants were asked to fill out the child survey, the parent interaction log and the parent satisfaction log on a

regular bases. The teacher interaction log was only filled out by 4 of the 10 participants for a total 11 completed out of the 25 sessions. Because of the low response rate for participants for the teacher interaction log, it was not be used in this study.

10. Child Survey

Responses ranged from 2 to 7 responses with the average response of five. The first question of what the participant thought of practice that day the response “it was fun” ranged from 60 to 100 % for each session with a mean of 96% (See Figure 6). The response “okay” ranged from 0 to 40% with a mean of 6% and no participant chose the response “terrible”. The second question “do you want to come back next week”, the response of yes ranged from 67 to 100% with a mean of 95% and the response of no ranged from 0 to 33% with a mean of 5%. The third and last child question “did the participant like hockey that week” the response “liked it a lot” ranged from 33 to 100% with a mean of 80%. The response “it was okay” ranged from 0 to 67% with a mean of 20% and no participant chose the response “it was terrible”.



11. Parent interaction log

Results ranged from 2 to 7 responses with an average of five. It was decided that the daily responses for the parent interaction log should be grouped into three groups. These groups were Saturday, start of the week (Sunday, Monday, Tuesday,) and end of the week (Wednesday, Thursday, Friday). Additionally the choices of how frequently participants talked about hockey each day were grouped into two groups. These groups were frequently (at least once per hour, once in the morning, once per afternoon) and rarely (rarely, never). The results reflect these groups.

The results for frequently talked about hockey on Saturday ranged from 0 to 100% with a mean of 59% (Figure 7). The response of rarely talked about hockey ranged from 0 to 100% with a mean of 41%. The results of frequently talked about hockey at the beginning of the week ranged from zero to seventy-five % with a mean of 34% (Figure 7). The response of rarely ranged from 0 to 100% with a mean of 66%. Lastly the response of how much the participant talked about hockey at the end of the week ranged from 0 to 95% with a mean of 61%.

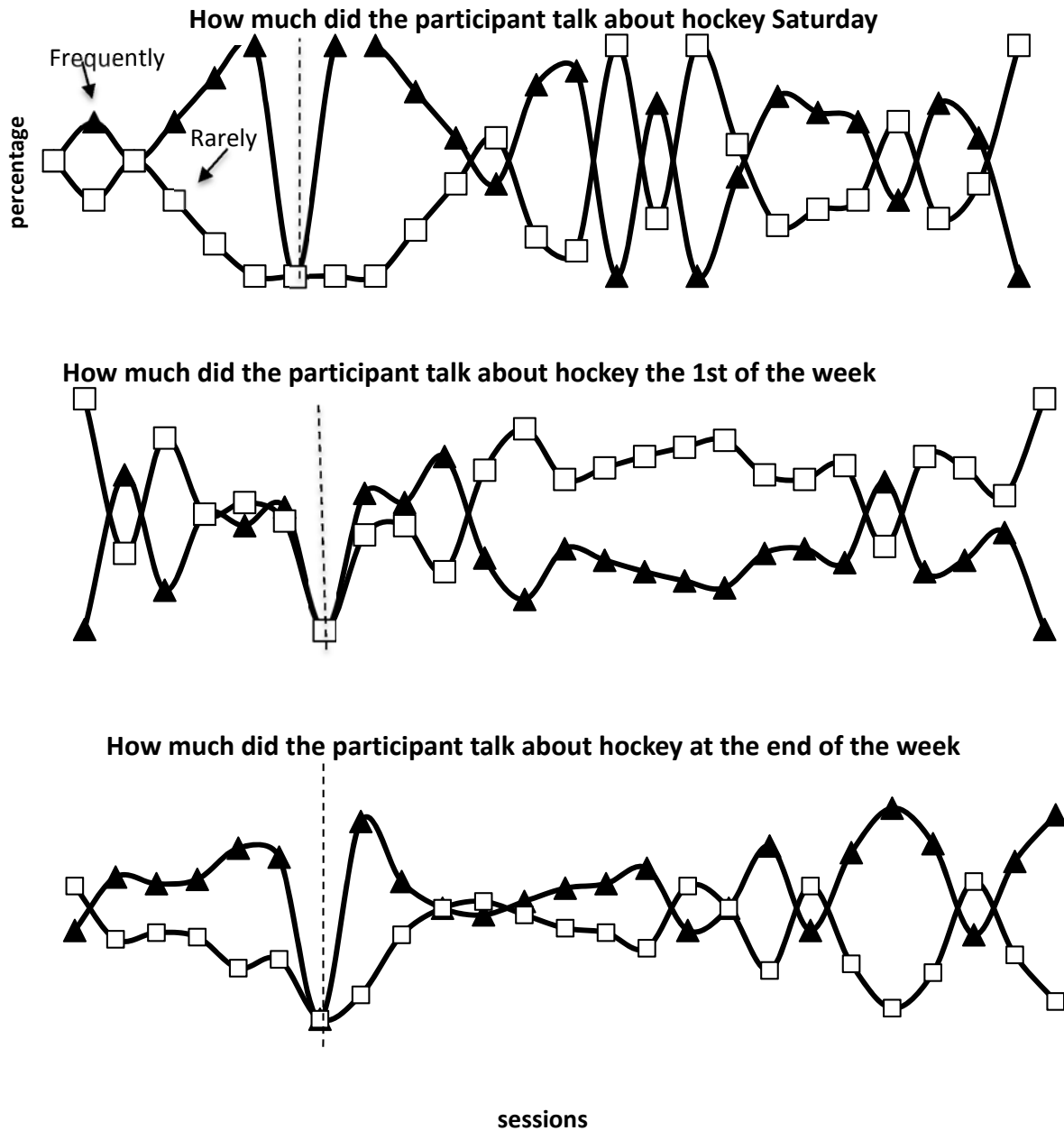


Fig 7.

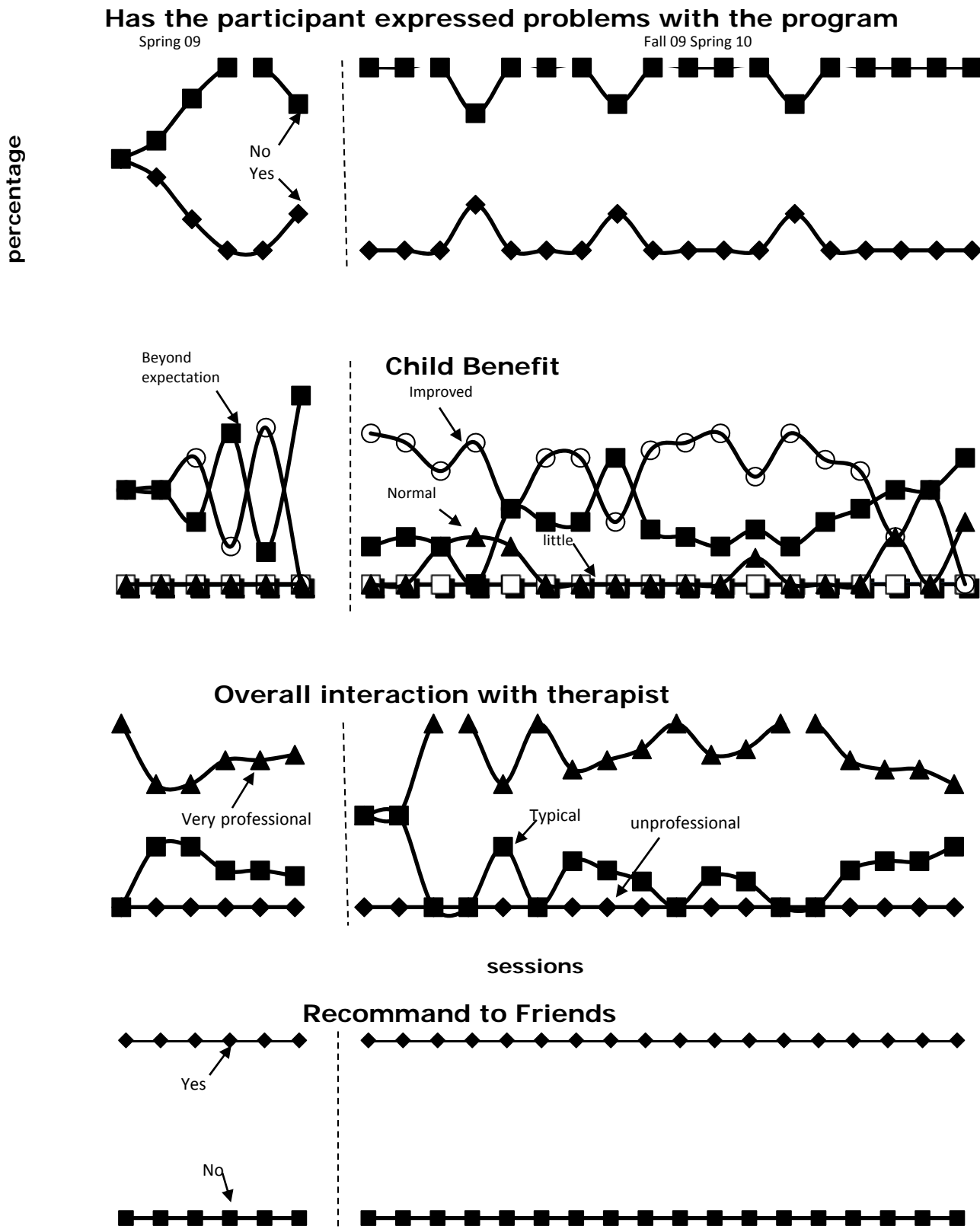
12. Parent satisfaction survey

Established that each child expressed no problems for an average of 85% of the time with a range of 50 to 100% (Figure 8). The limited expressed problems were because the child didn't want to leave school or because they had a difficult time interacting with another participant. Further

results showed that the benefit of hockey on the participants went beyond their expectations an average of 27% with a range of 0 to 67% (Figure 8). Parents responded that the benefit of hockey was somewhat improved for an average of 66% with a range of 33 to 80% and the response of normal benefit averaged 6% with a range of 0 to 25%. No parents

reported that their child received little or no benefit from the hockey program. Parents overall interaction with therapists was reported as very professional an average of 67% with a range of 50 to 100%. They reported interaction as typical an average of thirty-three % with a range of 0 to 50%. No parents reported that the therapists were unprofessional. In

all the surveys parents said yes to the question of recommending the program to friend. The results of the parent satisfaction question for very satisfied ranged from 50 to 100% with a mean of 89% (Figure 8). The response of satisfied ranged from 0 to 50% with a mean of 11%. There were no responses for dissatisfied.



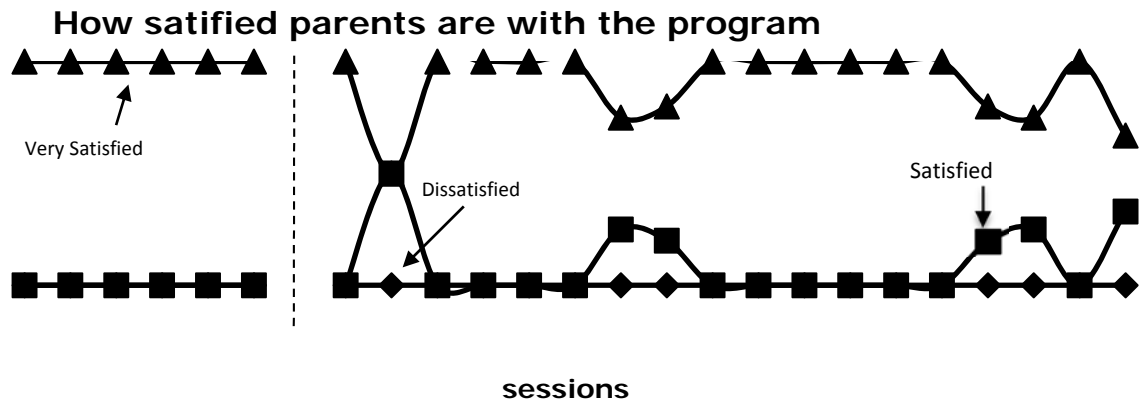
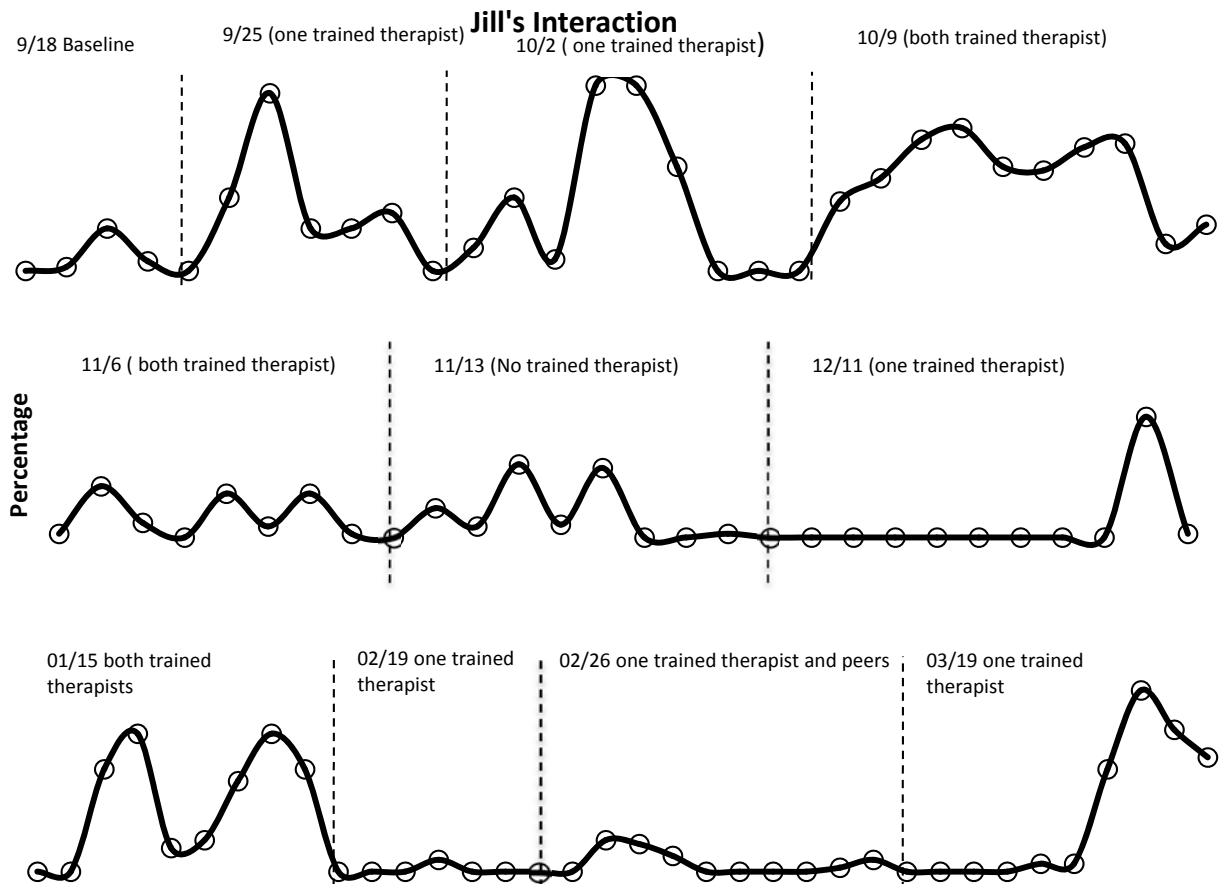


Fig 8.

13. James

Interaction for the four baseline sessions ranged from 0 to 12% with a mean of 5 % (Figure 9). Interaction was conducted for 126 sessions. There were thirty-seven sessions conducted for condition one (one trained therapist). Interaction in those sessions ranged from 0 to 90 % with a mean of 21 %. There was also thirty-seven sessions conducted for condition two (both trained therapist). Interaction for this condition ranged from 0 to 84% with a mean of 26%. Condition three (no trained therapists) was conducted over seventeen sessions. Interaction ranged from

zero to 64% with a mean of 12%. There were six sessions conducted for condition four (peers and no trained therapists) and interaction ranged from 0 to 28% with a mean of just 7%. Seven sessions were conducted fifth condition (peers and two trained therapist). Interaction ranged from 2 to 68% with a mean of 35%. There were ten sessions conducted for condition six (peers and one trained therapist). Interaction ranged from 0 to 28% with a mean of 11%. When two therapists were at the sessions there was a remarkable increase in interaction. Specifically when he was able to have one on one with a therapist and interact.



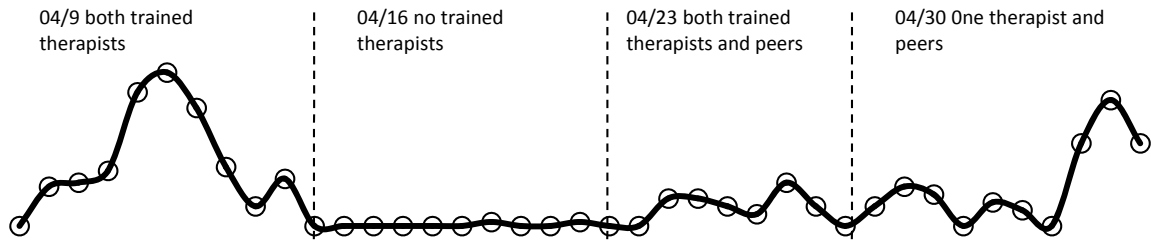


Fig 9.

14. Jill's

Interaction for the four baseline sessions, ranged from 0 to 22% with a mean of 7 % (See Figure 10). Interaction with service learning college students ranged from 0 to 96 % with a mean of 19% over 130 sessions. Interaction for condition one was taken for thirty-seven sessions. Interaction ranged from 0 to 96% with a mean of 23%. The second condition was also taken for thirty-seven sessions. Interaction for this condition ranged from 0 to 78 % with a mean of 34%. The

third condition was conducted over seventeen sessions. Interaction ranged from 0 to 40 % with a mean of 7 %. Jill did not participate in condition four. The fifth condition (peers and one therapist) was conducted over twenty sessions. Interaction ranged from 0 to 64% with a mean of 13%. The sixth and last condition was conducted over seven sessions. Interaction ranged from zero to 22% with a mean of 11%. When both therapists were at the sessions there was a considerable increase in interaction.

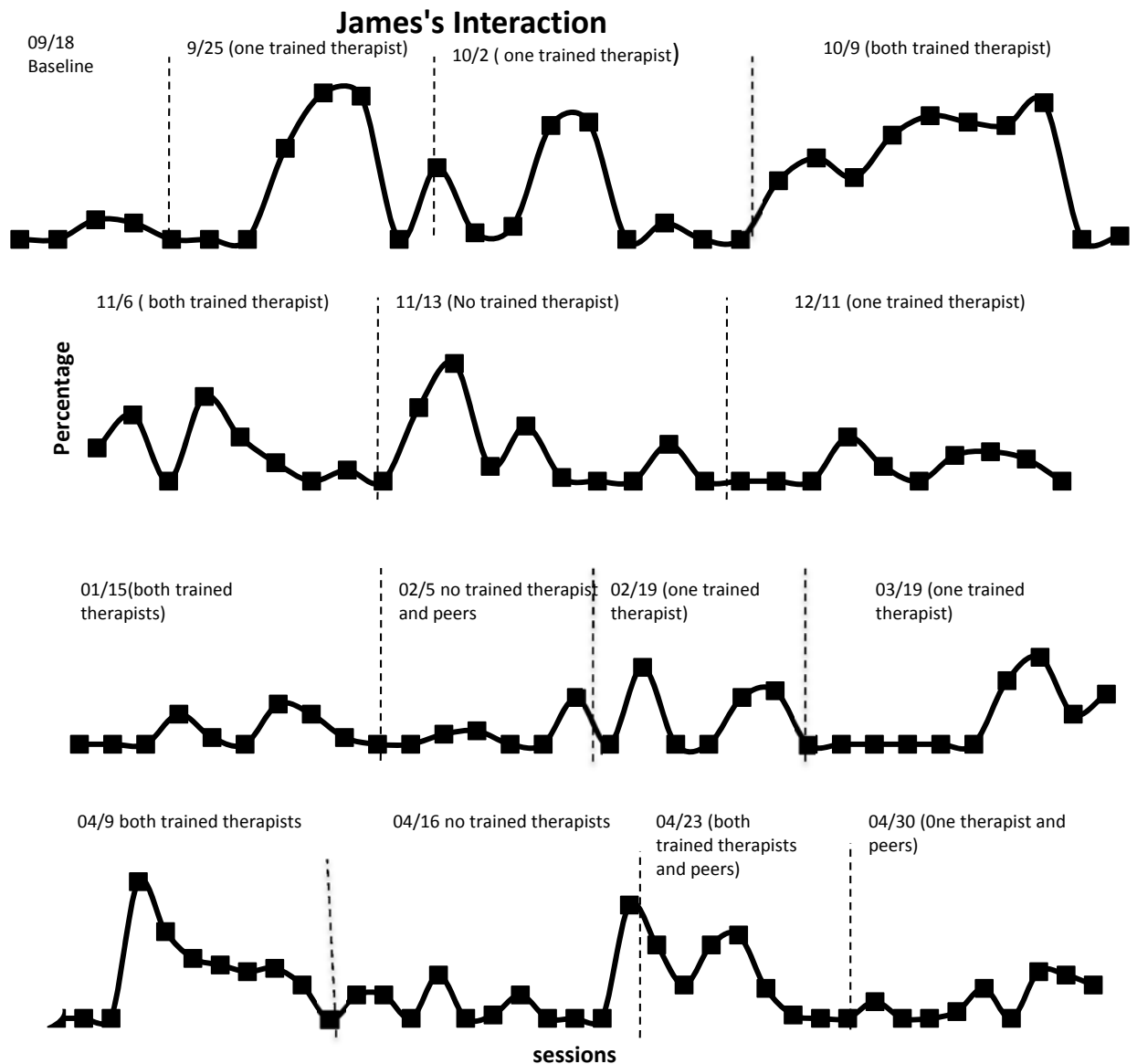


Fig 10.

15. Anecdotal Parent reports

Written at the bottom of the survey demonstrated how much the participant liked hockey. Often parents remarked that their son or daughter loved hockey and that they looked forward to it each week. One parents responded that hockey had enabled her son to participate in a sport he would have never been able to do. She said it gave her child the opportunity to play hockey instead of being on the sidelines. Another parent said that the Gonzaga hockey program had been a wonderful addition to her son's life because there were few group sports in which he was able to participate. The hockey program provided a fun place to learn new skills while socializing with peers and adults. All parents were incredibly grateful for a program like this one.

16. Discussion

This study provided individuals with autism the opportunity to learn to play the game of hockey as well as integrate with their typically developing peers in the leisure setting of hockey. This study also incorporated a service-learning component with college students with an interest in hockey.

Some strengths of this study were the fact that it allowed the participants the chance to interact socially with each other and typically developing peers in a leisure setting that normally they would have a difficult time being put in. Specifically it gave them the ability to learn how to play the game of hockey. It had a positive impact on each of the participants according to parent report. Many parents reported at the practices that this was the only place that their child could feel a part of an activity that they would normally not be able to participate in. Additionally, this study gave college students the opportunity to teach and facilitate the learning of hockey by the participants.

Unfortunately we had only minimal impact on James and Jill's interaction with the therapists and their peers. However there was a noticeable increase in interaction with peers when the number of peers decreased from twelve to three. If therapist interacted with James and Jill there involvement in drills and games increased. However, during this study therapists did not always interact with James and Jill when the opportunity presented itself. For example Jill would hit the puck whenever she saw it and if a therapist happened to be with her she would engage in passing the puck to them for two minutes. Secondly during scrimmages James was allowed to disengage in the game and look outside the rink. If a therapist had interacted with him and facilitated interaction with other team players he would have been more engaged in.

There are some limitations to this study that should be discussed. To strengthen the validity of this study more participants with varying disabilities need to participate. Another limit included not being able to gain access to the ice rink at a time that would be convenient for parents. Also there was no control over parents returning surveys consistently. Therefore the surveys were returned inconsistently throughout the study.

More research needs to be completed developmentally disabled children interacting with their typically developing peers in a leisure setting such as hockey. This study described the need for more sports programs that include

children with developmental disabilities and their typically developing peers. Additionally any new study should include training for typically developing peers as well as service-learning college students in how to interact with developmentally disabled individuals in the leisure setting.

17. References

1. Van Naarden Braun K, Yeargin-Allsopp M, Lollar D. Factors associated with leisure activity among young adults with developmental disabilities. *Research in Developmental Disabilities* 2006; 27:567-583.
2. Modell S, Rider R, Menchetti B. An exploration of the influence of educational placement on the community recreation and leisure patterns of children with developmental disabilities. *Perceptual and Motor Skills* 1997; 85:695-704.
3. Vandercook T. Leisure instruction outcomes: Criterion performance, positive interactions, and acceptance by typical high school peers. *Journal of Special Education* 1991; 25:320-39.
4. Geisthardt C, Brotherson M, Cook C. Friendships of children with disabilities in the home environment. *Education & Training in Mental Retardation & Developmental Disabilities* 2002; 37:235-252.
5. Barry T, Klinger L, Lee J, Palardy N, Gilmore T, Bodin S. Examining the effectiveness of an outpatient clinic-based social skills group for high-functioning children with autism. *Journal of Autism and Developmental Disorders* 2003; 33:685-701.
6. Cory L, Dattilo J, Williams, R. Effects of a leisure education program on social knowledge and skills of youth with cognitive disabilities. *Therapeutic Recreation Journal* 2006; 40:144-164.
7. Hoge G, Dattilo J. Effects of a leisure education program on youth with mental retardation. *Education and Training in Mental Retardation and Developmental Disabilities* 1999; 34:20-34.
8. Arntzen E, Halstadro A, Halstadro M. Training play behavior in a 5-year-old boy with developmental disabilities. *Journal of Applied Behavior Analysis* 2003; 36:367-370.
9. Mactavish J, Schleien S. Playing together growing together: Parents' perspectives on the benefits of family recreation in families that include children with a developmental disability. *Therapeutic Recreation Journal* 1998; 32:207-230.
10. Jobling A, Moni K. 'I never imagined I'd have to teach these children': Providing authentic learning experiences for secondary pre-service teachers in teaching students with special needs. *Asia-Pacific Journal of Teacher Education* 2004; 32:5-22.
11. Kronick R. Service learning and the university student. *College Student Journal* 2007; 41:296-304.
12. Novak J, Murray M, Scheuermann A, Curran E. Enhancing the preparation of special educators through service learning: Evidence from two pre-service courses.

- International Journal of Special Education 2009; 24:32-44.
13. Mpofu E. Service-learning effects on the academic learning of rehabilitation services students. *Michigan Journal of Community Service Learning* 2007; 14:46-52.
 14. Tucker TE. *Ice hockey programs for special athletes*. Denver, CO: University of Denver Youth Hockey Association 2001, 43-56.
 15. Kazdin AE. *Single-case research designs: methods for clinical and applied settings*. Second Edition. New York, NY: Oxford University Press, 2011.