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Occupational Nature of Social Participation for Adolescent Males with Learning Disorders

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Abstract

OBJECTIVE. This study explored the effects of community team sports on social participation and life habit development for males ages 12-17 with a documented learning disorder.

METHOD. A causal/comparative design compared two groups. A convenient sample of 24 participants completed Life Habits Questionnaire and Community Integration Questionnaire. Chi-square and T-test analysis were used.

RESULTS. Results indicated social integration (t=4.56, p=.00) for boys who played a community sport was significantly higher than boys who did not play a community sport. The number and performance level of life habits was also significantly higher for boys who played a community team sport (t=3.23, p=.00).

CONCLUSION. Community team sports positively influence both social participation and life habits associated with social responsibilities for adolescent boys with learning disorders. Occupational therapists should promote involvement in team sports as an adjunct to therapy or consider community team sport involvement as treatment improving social participation outcomes.

Key Words: learning disorder, social participation, habits

Everyone possesses the desire to live, work, and play in a manner that allows physical, intellectual and social expression. For the millions of adolescents with learning disorders, daily routines that support habit development are often absent or extremely challenging (Broekhoff, Ellis, & Tripps, 1986). Often times, learning disorders can limit cognitive, social and emotional functioning, and as a result, limit opportunities in the community that foster development. Clark (2007) and colleagues noted that without opportunity in a naturally occurring environment, skill development does not become routine or habitual, making most activities difficult and awkward. One example in the literature is that adolescents with known learning disorders frequently are excluded from social activities, hindering their ability to develop social skills and habits associated with social responsibility. In a self-report study of individuals with documented learning disorders, it was found that the most difficult and frustrating aspects of living with a disability was accessing community resources and activities and being included socially in the community environment (Abbott & Mcconkey, 2006). Therefore, methods and opportunities for social habit development in adolescents with learning disorders require investigation. It has been suggested that participation in team sports might facilitate the development of these social habits, providing those with learning disorders the ability to engage socially in the community and develop friendships (Solish, Perry, & Minnes, 2009). It has been speculated that by participating in team sports outside of the work and school environment, adolescents are expanding their range of meaningful activities in combination with enhanced social participation, therefore leading to a better quality of life; however, research in this area is limited (Broekhoff, Ellis, & Tripps, 1986).

Learning disorders are considered some of the most prevalent diagnoses in children and adolescents. Boyle et al. (2011) reported that learning disorders were common in the United States, and that boys had a higher prevalence compared with girls. The number of children with learning disorders (Autism, Attention Deficit Hyperactivity Disorder, and other Developmental Delays) has

increased, requiring more health and special education services (Boyle et al., 2011). In the United States it is reported that 1 child in every 110 children will be diagnosed with a learning disorder, and Rice (2009) reported that between 2002 and 2006 there was a 57% increase in learning disorder diagnoses. Baron-Cohen et al. (2011) also reported that classic Autism and Autism spectrum conditions are much more prevalent in males than females, with a 4:1 ratio. The increase in the number of children with learning disorders has expanded the caseloads and created time constraints for those providing related services, such as occupational therapy (Casares, Bradley, Jaffe, & Lee 2003; Morrison, Bickerstaff, & Taylor, 2010; Strong, Gibert, Cassidy, & Bennett, 1995). Secondary to these constraints, if different methods of treatment were found to be beneficial to habit development, especially social habits, these methods should be considered by occupational therapists and those providing related services. One such alternative is structured team sports in the community.

Sports are popular throughout the United States, for both those with and without learning disorders. Recreational sports are one of the few pieces of American culture that interest all ages, genders, backgrounds, cultures, etc. In a study conducted on disability sports and friendship, findings indicated that disability sports allowed individuals to better interact with a friend who provided them with social benefits (Martin & Smith, 2002). Pretty, Rapley, & Bramston (2002) stated that it is essential to promote practices that focus attention to the connectedness of people with learning disorders not just in the school environment but in the communities they call home. Special educators and those providing related services such as occupational, physical, and speech therapies should expand their areas of practice to extracurricular team sporting activities in order to help individuals with learning disorders achieve greater life satisfaction.

Allen (2006) measured activity and emotional levels of those with learning disorders before and after a sport program. It was found that prior to participation, most of those involved had low energy and poor self-esteem, and their preferred leisure activities were watching television and listening to the radio. After

a 12-week community program, study participants showed greater confidence, an ability to perform exercises, and increased life satisfaction. This study reported that participation in sporting events brings discernible benefits, even to people with profound and multiple learning disorders. Kleinert, Miracle, & Sheppard-Jones (2007) noted that there was a critical need for participation in school extracurricular and community recreation activities if students with moderate and severe intellectual disabilities are to have valued roles in their communities, sustained and rewarding friendships, and successful post school transitions. Team sports provide individuals with disabilities an avenue for physical activity and social participation, but further research is needed to support the hypothesis that sports also increase adolescent habit development, especially social habit development.

The purpose of this study was to explore the effects of structured team sports on social participation and life habit development for males ages 12-17 who have a documented learning disorder. For the purpose of this study social participation is defined as organized patterns of behavior that are characteristic and expected of an individual in a social system. These observable behaviors are dependent on social and communication skills and are required to engage in activities with family, friends and community (neighborhood, organizations, work, and school) (AOTA, 2008). Life habits are regular activities (eating meals, communicating with others, moving around) and social roles (going to school, engaging in social relationships, participating in recreational activities) that allow young people to survive and achieve their potential in society throughout their lives (Fougeyrollas, Noreau, & Lepage, 2004).

Specifically this study sought to determine if there was a difference in the level of social participation/integration for males ages 12-17 who have learning disorders and participate in a structured team sport compared to males ages 12-17 who have learning disorders and do not participate in a structured team sport. This study also sought to determine if there was a difference in the level of life habits for males ages 12-17 who have learning disorders and participate in a

structured team sport compared to males ages 12-17 who have learning disorders and do not participate in a structured team sport.

Methods

This study was a causal/comparative design in which two groups were compared to explore the influence of team sport involvement on social participation/integration and social habits for adolescent boys with learning disorders. Per University protocol, Institutional Review Board (IRB) approval and participant consent were obtained before the study began.

Participants and Settings

Twenty-four parents/guardians of males ages 12-17 who had a documented learning disorder participated in this study. Parents and children all resided in New Jersey communities. Participants were divided to form two groups of 12 participants. The first group was the sport group; the criteria for this group included having a male child who participated in one community team sport for at least one year in duration, was between the ages of 12-17, and had a diagnosed learning disorder. Descriptive statistics for group one are found in Table 1. The second group was the non-sport group; the criteria for this group included having a male child who was not involved in a community sport team, was between the ages of 12-17 and had a diagnosed learning disorder. Descriptive statistics for group included having a male child who was not involved in a community sport team, was between the ages of 12-17 and had a diagnosed learning disorder. Descriptive statistics for group two are found in Table 2.

Instruments

A participant intake form provided information that allowed both groups to be described and allowed for statistical analysis to explore similarities and differences between groups. The intake form included: age, diagnosis, grade level, involvement in a community sports and type of sport, parent perception of level of adolescent's functional skills, and family income. Parents rated their adolescent's functional skill level with everyday activities from dressing, bathing, navigating school,

playing sports, and participating in family activities on a scale of 1 to 5, with 1 being "has a difficult time" and 5 being "without any difficulty."

The Community Integration Questionnaire (CIQ) (Willer et al., 1993) is a 15-item selfadministered questionnaire that measures the extent to which an individual is an active participant in the home, at work, and in their community. The CIQ produces scores in three areas: home participation/integration, social participation/integration and productive participation/integration. The overall community participation/integration score is produced from summing the scores of each of the three areas measured by this instrument. A total score is calculated with a range of 0-29: home integration (0-10), social integration (0-12), and productive integration (0-7). For statistical purposes the total score or individual category scores can be used for analysis. Secondary to the focus of this study being on social participation only, the social participation/integration scores of the CIQ were used. The social participation/integration category of the CIQ measures activities done outside of the home, with whom the activities were done, and how many individuals the activities were done with. Finally, the social participation/integration category measures whether or not an individual has a close friend with whom they can confide. Data on the reliability and validity of the CIQ is extensive with results for internal consistency at .76 (p<.001) (Corrigan & Deming, 1995; Willer et al., 1993), test retest reliability with a span of 10 days resulted in a correlation of .91 (N= 116). Concurrent validity has resulted in strong correlations with the Craig Handicap Assessment and Reporting Technique (Sander et al., 1999).

The Assessment of Life Habits (Life - H) is a global non age-specific instrument for determining disruptions in the accomplishment of life habits in persons with disabilities (Fougeyrolas et al., 1998). Figueiredo et al. (2010) noted that the "Life-H provides an excellent opportunity to evaluate not only performance, but also the importance of the activity or social role, referred to as a life habit, for the individual" (pg. 706). The Life-H has 62 items distributed across 12 domains: six domains are

related to daily activities (nutrition, fitness, personal care, communication, housing and mobility) and six domains are related to social roles (responsibilities, interpersonal relationships, community life, education, employment, and leisure). These domains of the Life-H are consistent with those proposed by the Disability Creation Process model (Fougeyrollas et al., 1998) and the International Classification of Functioning and Disabilities of the World Health Organization (WHO, 2009). In a structured review of 18 studies associated with the reliability and validity of the Life-H, Figueiredo and colleagues (2010) found that the tool had strong reliability and validity and is able to detect change in children and adults with a reported disability. Test-retest reliability of the LIFE-H has been found to be strong (Poulin & Desrosiers, 2009).

Procedure and Data Analysis

This was a convenient sample consisting of twenty-four parents of adolescent males with a diagnosed learning disorder. Recruitment for group one (sport group) occurred through community recreational sport team coaches working in New Jersey communities. Recruitment for group two (non-sport group) occurred through local special education professionals and parents who were already involved in the study through word of mouth. Once a parent agreed to participate, the IRB consent form was reviewed and signed, and appointments were made to complete the study assessments. For all twenty-four participants, the researcher completed the intake form, CIQ, and LIFE-H. This required about an hour and a half; all assessments were reviewed for completion and accuracy and participants were made aware that they could contact the researcher for outcomes of the study.

To evaluate the homogeneity of the two groups, chi-square analysis was completed on categorical data (diagnosis, level of education, level of functioning and income) and t-test analysis was completed on continuous data (age). Descriptive analysis associated with the CIQ and LIFE-H for each group was completed.

To analyze the differences between group one (sport group) and group two (non-sport group), on level of social participation and performance level in life habits, t-test analysis was used. To further describe any noted difference in life habits between the two groups, the ADL and Social Role categories of the LIFE-H were analyzed. To complete statistical analysis of assessment scores SPSS + Version 17.0 software (SPS, Inc., Chicago) was used.

Results

For this study there were two identified groups; one group participated in community team sports (group 1) and one group did not (group 2). Each group consisted of 12 individuals, and for all twenty-four participants, a parent completed an intake form and two assessment instruments.

Group Homogeneity.

To determine whether extraneous variables were influencing differences between the groups, chisquare analysis was used on the following categorical variables: level of income (x^2 =4.14: df=3 p=.25), parents' perception of function (x^2 =4.24: df=3, p=.24), diagnosis (x^2 = 9.20: df= 9, p=.42), and grade level (x^2 =9.33: df=5, p=1.00). No significant differences between groups were noted in these variables; therefore the groups were similar as related to income, level of function, diagnosis, and grade level. Age (t= .87, p= .39) was also explored between the two groups using t-test analysis. No significant difference was noted between the groups for age; therefore these extraneous variables do not appear to be influencing social participation or life habits.

Group Differences.

The results indicated that social integration (*t*=4.56, *p*=.00), as measured by the CIQ, for group 1 (boys who played a community team sport, \bar{x} = 9.50) was significantly higher than group 2 (boys who did not play a community team sport, \bar{x} = 6.17). It appears that participation in structured team sports increases time spent in activities outside of the home and the friendly relations developed with other individuals.

As related to the number and performance level of life habits, group 1(boys who played a community team sport) was significantly different from group 2 (boys who did not play a community team sport) (t=3.23, p=.00). Those males who participated in a community team sport seemed to perform life habits at a higher level and performed more life habits than those males who did not. *Life-H Category Group Differences*.

The Life-H total score is summed from the results of 2 domains that can be further broken down into six categories that define habits associated with activities of daily living and six categories that define habits associated with social roles. When the two groups were compared in these categories, it was clear that involvement in a team sport influenced adolescents' ability to perform social roles more so than ability to perform activities of daily living. The descriptive data of the 12 Life-H categories can be found in tables 3 and 4 for each participant group. Communication habits, an area of daily activities, was significantly different between the two groups (t=2.45, p=.02), with those adolescents participating in community sport teams reporting a higher ability to perform these habits. Community Life habits (t=5.93, p=.00), education habits (t=2.37, p=.03), employment habits (t=4.11, p=.00), and recreation habits (t=3.50, p=.00) were also significantly different between the groups. These habits from the Life-H make up four of the six categories of social roles. For each of these categories, the group of adolescent males who played in a community team sport reported higher performance with less needed assistance in these life habits than those adolescent males who did not participate in a sport.

Discussion

It is clear from this study that those adolescent boys with a learning disorder, who also participated in community team sports appeared to have higher performance skills for those life habits associated with social participation, integration and roles. This finding is important to related services such as occupational therapy in that it provides either an adjunct to support traditional treatment methods or a community-based role for therapists to increase social participation and social habits for adolescent males with learning disorders. The findings of this study add to the limited literature associated with alternative treatment methods for occupational therapy within special education.

In considering the outcomes of this study it is important to restate the homogeneity of the participants in multiple variables with the difference between the two being participation in a community team sport or not. An interesting finding from the CIQ results was that both groups continue to report difficulty in finding a best friend to confide in. This finding continues to point to the need for focused intervention and the complexity of such a relationship for adolescents who have diagnoses such as Autism, Asperger's and Attention Deficit Disorder. Parents reported that their children were consistently in social groups but had difficulty forming a strong relationship with any one child in the group.

The results of the CIQ demonstrate that those adolescent males who participate in a community team sport seem to shop outside the house, are involved in leisure activities such as going to the movies with others, and visit friends or family outside of the home at a higher frequency than adolescent males who do not participate in a community team sport.

The CIQ results support the findings of the Life-H in that as the sport group participants are being exposed to situations outside of the home more, they have a greater opportunity to practice social life skills and therefore record higher scores on the Life-H social responsibility habit categories. When the 12 categories of Life Habits are divided into the two subsets of activities: 6 activities of daily living and 6 activities involving social skills and roles, the activities of daily living results showed a very low variance in comparison to the social skills and roles category. This difference might be attributed to community team sport involvement because of the demand to use social skills and roles appropriately in this setting. Those life habit categories that showed significant differences between group 1 and group 2 included communication, community life, education, employment, and

recreation. Communication was composed of 21 different habits, and questions targeted themes of oral and sign communication, written communication, and telecommunication. Results on community life were reflective of 2 life habits, which questioned the adolescent's involvement in community groups and activities. Education consisted of 14 applicable life habits, and information was collected with questions such as how the adolescent physically maneuvered in the school environment and how well the adolescent did on homework, tests and quizzes. Employment was measured with 3 life habits, focusing on an adolescent's jobs and volunteer work. Recreation consisted of 24 applicable habits, which revolved around the types of activities the adolescent liked to participate in and with whom. As noted from the findings of this study, involvement on a community sport team seems to facilitate higher performance and involvement in more related social habits for those who do play on a community sport team compared to those who do not.

Limitations

Because this was a descriptive study, no conclusive statements can be made about the actual effect of team sports on adolescent boys with learning disorders. This study did demonstrate significant differences between the two groups on critical variables, and therefore warrants continued research on this topic. Although homogeneity of groups was reported as in any study, measuring all possible extraneous variables is difficult and therefore this area also requires more research.

Conclusion

This study sought to explore the influence of community team sport involvement on social participation and life habits for adolescent boys with learning disorders. In exploring these homogenous groups, it appears that community team sports positively influence both social participation and life habits associated with social responsibilities for adolescent boys with learning disorders. Occupational therapists providing services for children with learning disorders find themselves with time constraints and higher expectations from both communities and families that

these children be socially successful. Therefore the findings of this study that provide effective intervention strategies are important. Special education providers should promote involvement in team sports as an adjunct to therapy services or consider community team sport involvement as a treatment service. If service providers can treat adolescents with learning disorders in a naturally occurring environment outside of the classroom, such as community or recreational team sports, the fostering of relationship development might improve social participation and life habits for this population.

As noted earlier, community team sports are a valued occupation for many individuals for whom being on a team provides a social role. It appears from this study that this role also fosters the development of critical social habits. Occupational therapists should promote involvement in team sports as an adjunct to therapy or consider community team sport involvement as treatment improving social participation outcomes.

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Variable	Mean	Range
Age, yrs.	14.08	12-17
Grade Level	8.03	6^{th} -11 th
Functionality (scale 1-5)	3.50	2-5
Number of yrs. participating in team sport	5.75	1-10
	n	%
Type of Sport		
Ice Hockey	3	25.0
Soccer	3	25.0
Basketball	1	8.3
More than one sport	5	41.7
Diagnosis		
Autism	2	16.7
Intellectual Disability	1	8.3
Multiple Diagnoses	2	16.7
Asperger's Syndrome	2	16.7
Specific Learning Disability	1	8.3
PDD-NOS	3	25.0
ADD	1	8.3
Income		
\$31,000-60,000	2	16.7
\$61,000-90,000	2	16.7
\$91,000-120,000	3	25.0
Above \$120,000	5	41.6

Table 1. Group 1 (Sport Group) Participant Characteristics (n=12)

Note. PDD-NOS = Pervasive Developmental Disorder-Not Otherwise Specified, ADD= Attention Deficit Disorder, Multiple Diagnoses= participant reported that adolescent had more than 1 diagnosis

Variable	Mean	Range
Age, yrs.	13.50	12-16
Grade Level	7.75	6 th -11 th
Functionality (scale 1-5)	3.25	2-5
	n	%
Diagnosis		
Autism	3	25.0
Intellectual Disability	1	8.3
Multiple Diagnoses	2	16.7
Asperger's Syndrome	2	16.7
Language Disability	1	8.3
Developmental Delays	2	16.7
Cerebral Palsy	1	8.3
Income		
\$61,000-90,000	2	16.7
\$91,000-120,000	1	8.3
Above \$120,000	9	75.0

 Table 2. Group 2 (Non-Sport Group) Participant Characteristics (n=12)

Note. Multiple Diagnoses= participant reported that adolescent had more than 1 diagnosis

Life Habits Categories	Mean	Range
Nutrition Habits	7.39	4.50-9.00
Fitness Habits	8.10	6.60-8.80
Personal Care Habits	6.82	4.20-8.60
Communication Habits	6.43	5.10-8.10
Housing Habits	8.07	7.00-9.00
Mobility Habits	7.07	5.60-9.00
Responsibilities Habits	6.56	4.70-8.30
Interpersonal Relationship Habits	7.43	5.30-9.00
Community Life Habits	8.67	5.00-9.00
Education Habits	7.40	6.10-8.90
Employment Habits	4.93	4.00-7.70
Recreation Habits	7.22	5.60-8.50
Total Habits	7.97	6.70-9.40

Table 3. LIFE-H Weighted Habit Scores for Group 1 (Sport Group)

Note. n=12

Life Habits Categories	Mean	Range
Nutrition Habits	6.29	3.90-8.90
Fitness Habits	7.80	4.70-10.00
Personal Care Habits	7.31	3.40-9.30
Communication Habits	5.41	3.00-7.40
Housing Habits	7.50	5.50-9.20
Mobility Habits	6.93	5.30-8.30
Responsibilities Habits	5.73	2.60-7.80
Interpersonal Relationship Habits	6.45	3.70-8.50
Community Life Habits	4.15	.00-10.00
Education Habits	6.15	3.60-8.50
Employment Habits	1.84	.00-7.20
Recreation Habits	5.70	3.20-7.00
Total Habits	6.44	4.10-8.90

 Table 4.
 LIFE-H Weighted Habit Scores for Group 2 (Non-Sport Group)

Note. n=12