therapeutic recreation: Revisiting the issue of means and ends. In C. Sylvester (Ed.), *Philosophy of therapeutic recreation; Ideas and issues* (Vol. 2; pp. 92–105). Alexandria, VA.: National Recreation & Park Association.

Sylvester, C., Voelkl, J. E., & Ellis, G. D. (2001). *Therapeutic recreation programming: Theory and practice.* State College, PA: Venture.

Titze S., & Owen, N. (2005). Prospective study of individual, social, and environmental predictors of physical activity: Women's leisure running. *Psychology of Sport and Exercise, 6*(3), 363–376.

Ulrich, R. S., Dimberg, U., & Driver, B. L. (1991). Psychophysiological indicators of leisure benefits. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), *Benefits of leisure* (pp. 73– 89). State College, PA: Venture.

Wankel, L. M. (1993). The importance of enjoyment to adherence and psychological benefits from physical activity. *International Journal of Sport Psychology, 24,* 151–169.

Wininger, S. R., & Pargman, D. (2003). Assessment of factors associated with exercise enjoyment, *Journal of Music Therapy, 40*(1), 57–73.

Zeiss, A., Lewinsohn, P., & Munoz, R. (1979). Nonspecific improvement effects in depression using interpersonal skills training, pleasant activity schedules, or cognitive training. *Journal of Consulting and Clinical Psychology, 47*(3), 427–439.

THERAPEUTIC RECREATION JOURNAL Vol. 40, No. 4, 241-254, 2006

Social Competence: Evaluation of an Outpatient Recreation Therapy Treatment Program for Children with Behavioral Disorders

Erin Rothwell, Jennifer Piatt, and Kelly Mattingly

The purpose of this article is to present the results from an evaluation of a recreation therapy component of an outpatient treatment program for children with behavioral disorders. The development of social competencies during childhood is vital for the developmental outcomes that affect success later in life. Social skills, an indicator of social competence are those behaviors within a given situation that predict social outcomes for children (Gresham, 1986). The lack of social skills contribute to participants being referred to this program after several disciplinary problems at school and home such as extreme aggressiveness or withdrawal, hyperactivity, or poor reality testing. The program allows an interdisciplinary approach that involves psychiatry, social work, recreation therapy, and other supportive disciplines. The recreation therapy component of this program teaches 'formal' social skills classes, but social skills are reinforced throughout the entire program. The evaluation was the project for a recreation therapy practicum at this facility.

Erin Rothwell, Ph.D., TRS, CTRS, CRSS is a Assistant Research Professor at the University of Utah College of Nursing and her research interests are in group development, social competency and community-based research. She completed her recreation therapy practicum during the Fall of 2002 at the University of Utah Neuropsychiatric Institute and continues to practice as a Recreation Therapist. Jennifer Piatt, Ph.D., CTRS is a Assistant Professor at California State University-Sacramento. She has worked in the mental health field for 8 years and has been a practicing Certified Therapeutic Recreation Specialist for 9 years. Kelly Mattingly, TRS, CTRS graduated from the University of Utah with a bachelor's degree in Leisure Studies, emphasis in Therapeutic Recreation. She has worked in child psychiatry for 16 years and currently working as in Education Counseling. She lives in Salt Lake City, Utah with her husband and two children.

KEY WORDS: *social competence, recreation therapy, children, outpatient, behavioral disorders, social skills*

According to the U.S. Surgeon General Report, one in 10 children under the age of 18 will experience a significant mental health problem during their school years, but only one in five of those who need treatment will receive appropriate mental health services (United States Public Health Services [PHS], 2000). Untreated mental illnesses and mental health problems in youth are especially problematic because they affect the developmental process. Adding an unstable environment (i.e. neglect, abuse, poverty) to this situation only exacerbates problems with mental health and appropriate behavior, including thoughts and emotions (PHS, 2000).

Children who experience mental illness, poverty, parental substance abuse, and violence often lack necessary social skills for learning effectively in the classroom (Rose, 1996). Mash and Barkely (1996) have also noted that children with conduct disorders, delinquency, depression, and anxiety frequently exhibit social skill deficits. Thus, social competence, and more specifically, social skills are one potential area of intervention when addressing mental health concerns or environmental instability among children (Cartwright-Hatton, Tschemitz, & Gomersall, 2005; Hops, 1983). A potential means of addressing social skills within the mental health environment is through recreation therapy.

Recreation therapy aims to develop, maintain, and facilitate expressions of appropriate leisure lifestyles for individuals with social, mental, emotional, or physical limitations (National Therapeutic Recreation Society, 1994; Peterson & Gunn, 1984; Peterson & Stumbo, 2000; Stumbo & Peterson, 2004). The Leisure Ability Model provides definition and direction for the delivery of recreation therapy services (Peterson & Gunn, 1984; Peterson & Stumbo, 2000; Stumbo & Peterson, 2004). The model takes into account the biological and/or psychological factors as well as the social context that many other treatments in the mental health field have neglected (Long, 2004). Through the functional intervention, leisure education, and recreation participation components of the Leisure Ability Model, recreation therapy professionals may be able to improve social skills in youth. Therefore, the purpose of this study was to evaluate the effectiveness of an out-patient recreation therapy program designed to enhance social skills of children with behavior disorders. The program is conceptually grounded in the Leisure Ability Model, and evidence of such effectiveness would also indirectly support the assertion that this model can be used to effectively design practical interventions.

Literature Review

Mental Illness and Social Skill Acquisition

Mental illness usually first shows signs during childhood rather than when an individual enters adulthood (Giaconia, et al., 1994; Lauria-Horner, Kitcher, & Brooks, 2004). This te[redacted]for early onset is disturbing due to th[redacted]l impact of mental illness on hu[redacted]ment. When considering that appr[redacted] 10 million, or 20%, of children in the [redacted]ted States have some form of mental illness (PHS, 2002), the need to identify mechanisms for minimizing this developmental impact seems obvious. More concerning are research findings that indicate, one in 10 children experience mental illness severe enough to cause some level of impairment affecting normal development and functioning (Burns, et al., 1995; Shaffer, et al., 1996). This impairment is often in the area of social competency, which is illustrated by the fact that the primary referral for children to school-based mental health services is often based on a teacher's judgment of the child's social competency (Gresham & Noell, 1996).

The development of social competencies during childhood is vital for developmental outcomes that affect success later in life (Foster & Ritchey, 1979; Lockwood, Kitzmann, & Cohen, 2001). Children with behavioral disorders frequently display problematic behaviors that affect social competencies in peer relationships (Farmer & Hollowell, 1994; Steinberg & Knitzer, 1992) and academic success (Lockwood, et al., 2001; Walker & Hops, 1976). Inadequate social competence during childhood is related to juvenile delinquency (Foster & Ritchey; Loeber, 1985; Roff, Sells, & Golden, 1972; PHS, 2000) and the development of antisocial behavior patterns (Dodge, Cole, & Brakke, 1982). Social competence has also been considered important in psychiatric diagnosis, treatment, and adjustment of psychiatric patients to community life (Gresham, 1986), and mental health problems (Cowen, Pederson, Babigan, Izzo, & Trost, 1973).

A sub-domain of social competence is social skills (Gresham, 1986; Gresham & Reschly, 1987). Social competence can be viewed as an evaluative term based on a judgment that a person has performed a task adequately; and social skills are specific identifiable behaviors that an individual exhibits to perform competently on a task (Greshem; Hops, 1983). Social skills are considered "those behaviors which, within a give situation, predict important social outcomes for children" (Greshem, p. 150). Outcomes include peer acceptance, significant other's judgment, and behaviors that consistently correlate with peer acceptance and significant others' judgment; therefore, social skills can be considered an essential component of social competence (Hops).

The level of social skills of a child with a mental illness plays a major role in the formation of adaptive behavior (de Bildt, et al., 2005). Children with mental health issues, specifically emotional and behavioral disorders, often display negative behaviors such as aggression and disruptions that have a direct impact on the relationships they form with peers early on (Coleman, 1992; Erdley & Asher, 1999; Farmer & Hollowell, 1994; Kauffman, 1993; Rosenberg, Wilson, Maheady, & Sindelar, 1992). This also makes them at greater risk of being rejected by peers in various social situations and developing chronic behavior problems (Erderly & Asher). These are serious concerns to the developmental process, as children who experience peer rejection are more apt to have problems with school transitions (i.e. elementary to junior high, etc.), experience long-term adjustment difficulties, and are more likely to drop out of school (Erdley & Asher; Lockwood, et al., 2001).

Recreation Therapy

Recreation therapy is an intervention that can address social competency, and especially social skills in children with the diagnosis of a mental illness. The primary purpose of recreation therapy is to "restore, remediate or rehabilitate in order to improve functioning and independence as well as reduce or eliminate the effects of illness or disability" (American Therapeutic Recreation Association, 1987). By increasing social skills through recreation therapy, the negative effects of a mental illness (i.e. poor peer relationships) may be reduced. Additionally, one of the main components of recreation therapy or leisure activity often involves some form of social interactions with others; therefore the development of social competency is vital for recreation therapy (Stumbo, 1995).

The Leisure Ability Model, one of the delivery service models in recreation therapy, is an appropriate delivery point for social skill development in practice. The Leisure Ability Model consists of three components (functional intervention, leisure education, recreation participation). The functional intervention phase addresses physical, cognitive, emotional as well as social functioning abilities of the individual (Peterson & Stumbo, 2000; Stumbo & Peterson, 2004). Services provided during this component help decrease limitations (i.e. poor social skills) that may

hinder one's ability to learn leisure-related awareness, knowledge, skills, abilities, and involvement (Stumbo & Peterson).

The second component of the model is leisure education, which includes leisure awareness, social skills, leisure skill development, and leisure resources. One of the major content areas of leisure education is the teaching of social interaction skills, which is concerned with promoting effective social skills in various leisure environments (Peterson & Gunn, 1984; Sylvester, Voelkel, & Ellis, 2001; Stumbo & Peterson, 2004). Individuals with disabilities often have inadequate social skills that can create barriers to full leisure participation (Stumbo & Peterson). Lastly, the recreation participation component allows the participants to practice their newly learned social skills in leisure activities.

Social Skills Effectiveness and Recreation Therapy

Social interactions during the leisure experience are often more important than the activity itself (Iso-Ahola, 1980; Peterson & Gunn, 1984; Stumbo, 1995). When individuals do not have the appropriate social interaction skills, the leisure experience is not as rewarding as it could be. The social acceptance of others during recreation participation may determine if the leisure experience is meaningful for the individuals with a disability (Sylvester, et al., 2001). Leisure experiences provided in clinical settings help transfer social skills learned during recreation therapy interventions to daily interactions within the community.

Social skills are an essential prerequisite to an appropriate leisure lifestyle (Peterson & Gunn, 1984; Sneegas, 1989; Stumbo, 1995; Stumbo & Peterson, 2004), and, therefore should be included as a goal in recreation therapy services. For a goal in social competency to be met, children must be aware of what skills are appropriate in various social situations. One factor that contributes to the development of adjusting to various situations through-out life is identifying personal goals for social interactions that lead to social competence (Erdley & Asher, 1999). For example, a personal goal for social interactions could be to take turns going first or to share their supplies for the activity. Creating appropriate social interactions in childhood that can be referred back to with other children who displayed positive behaviors can help prevent further developmental problems because children with negative social behaviors tend to affiliate with other children who display these behaviors (Erdley & Asher; Farmer & Hollowell, 1994). When children become older, the priorities of the social goals they have set become more difficult to change; therefore, it is important to intervene with children at younger ages, rather than when they enter adolescence (Mize & Ladd, 1990; Erdley & Asher). Individuals who demonstrate social competency have the ability and knowledge to respond appropriately in a variety of situations (Sylvester, et al., 2001).

Recreation therapy facilitates and teaches positive social skills essential for these leisure experiences (Sneegras, 1989) to occur among children with behavior disorders. Sneegras states social interactions with others are as important as the leisure experience itself. Yet, adolescents are among many of the populations receiving therapeutic recreation services display a deficit in social skills (Austin, Sneegras). If an individual cannot socialize with peers, family members, and others the leisure experience cannot be experienced to the fullest. On the other hand, when an individual is exhibiting acceptable social behaviors individuals are able to engage in conversations, problem solve, support others, and attend and listen to what is going on around them (Austin, 2004; Stein & Cutler, 1998).

Social skills training is often identified as one of the key components of a therapeutic recreation program (Austin, 2004; Bullock & Mahon, 2001; Sylvester, et al., 2001), and especially a component of leisure education (Dattilo, 2000). During social skills training the therapist utilizes various facilitation techniques with participants to emphasize appropriate social interactions. These include, but are not limited to: demonstration of the skill, discussion, and active participation both within and outside of the group. Dattilo indicates role playing in various leisure situations can help reinforce appropriate interactions. Social skills training supports the Leisure Ability Model in that the aim of social skills training is directed toward improvement in social functioning (Austin; Duck, 1998) and working towards the individual being as independent as possible in various social environments.

Sneegas (1989) and Austin (2001) have identified specific steps to follow for social skill training to be effective in therapeutic recreation settings. This includes: assessment of the problem area; task analysis of the behavioral components necessary to achieve the social skill; introduction to the social skill as a rationale for the learning of the social skill are given to the client; demonstration and modeling of specific social behaviors; practice and rehearsal of the new behavior; provision of feedback and reinforcement of the behavior; and generalization to a variety of situations (Sneegas). When examining each of these steps, one can relate each of them back to the therapeutic recreation process implemented in programs.

Therapeutic recreation and social skills training has been largely discussed as a facilitation technique in therapeutic recreation (Austin, 2004; Stumbo & Peterson, 2004), yet little research has been conducted in this area. More specifically, social competency has been seen as a goal of therapeutic recreation for years (Austin). Providing social skills effectiveness in therapeutic recreation environments allows individuals to gain new skills reinforcing one's social competency (Austin). This includes individuals being accepted, valued, and included in community settings (Dattilo, 2000).

It is critical that services for children with mental illness, specifically behavior disorders, are developed in a manner that attempts to stop or reverse the negative impact of such conditions on the developmental process. Specifically, maintenance and enhancement of social competence should be a primary targeted outcome. Recreation therapy services have an inherent potential for achieving such outcomes due to the fact that social skills are a basic component of leisure skills and behaviors. This connection is illustrated by the Leisure Abilities Model, which also proposes that social skills be a primary aspect of recreation therapy services. Based on this rationale, a program for enhancing social skills in children with behavior disorders was developed and later evaluated. It was hypothesized that children who participated in at least 10 days of the treatment program would experience significant increases in overall social competence, as well as in interpersonal, self-management, and academic sub-domains of social competence. The evaluation process was implemented and is presented here because it allows for information to be collected and analyzed to generate knowledge concerning ethics, efficiency or equity of a product (Sylvester, et al., 2001). This applied approach to understanding phenomenon allows for issues of both practice and research to be addressed.

Methods

Participant Information

Participants for this study were children ages 5–12 years with a mental illness diagnosis and behavioral disorders currently receiving outpatient treatment services. Criteria for inclusion in the study included: a current medical diagnosis of mental illness, age 5 to 12 years, and completion of the 2-week treatment. Participants who did not complete the 2-week treatment were excluded from the study. The average age of the participants was 10 years old and 7 out of the 15 participants were females. Although there were over 30 potential participants, only 15 participants qualified for the study from February 2003 to October 2003.

Instrumentation

The School Social Behavior Scales (SSBS) designed by Merrell (2001) were used for this evaluation. The SSBS is comprised of two scales: Social Competence and Antisocial Behavior. These two concepts, social competence and antisocial behavior, are not dichotomous, but are related. Although these concepts are linked (i.e. poor social competency more likely to engage in antisocial behaviors), the nature of the relationship is unknown, thus, they are measured in two different scales. These scales use a five-point Likert-type scale ranging form 1 (never) to 5 (frequently). This scale was tested with over 800 participants in kindergarten through high school and had a Chronbach's alpha reliability of .94.

The Social Competency scale includes 32 positively worded questions divided into three subscales (interpersonal skills, self-management skills, and academic skills). Interpersonal skills consists of 14 items that measure social skills needed for establishing positive relationships with and gaining acceptance among peers (i.e. "invites other students to participate in activities"). Self-management includes ten items that measure social skills related to self-restraint, cooperation, and compliance to school rules and expectations (i.e. "responds appropriately when corrected by teacher"). The third scale is academic skills and consists of eight items that measure competent performance and engagement of academic tasks (i.e. "completes individual seatwork without being prompted").

The Antisocial Behavior Scale includes 33 items divided into three subscales (hostile-irritable, antisocial-aggressive, disruptive-demanding). Hostile-Irritable consists of 14 items that describe behaviors considered to be self-centered, irritating, and annoying and likely to lead to rejection of peers (i.e. "will not share with other students"). Antisocial-Aggressive consists of 10 behavioral descriptors that relate to violation of school rules and harm or threats to others (i.e. "takes things that are not hers/his"). Disruptive-Demanding includes nine items that reflect ongoing school activity and place inappropriate demands on others (i.e. "is overly demanding of teacher's attention").

The participants also completed a "workbook" that asked how they would respond to various social situations. Using the workbook allowed documentation of participants' perspectives on how they would behave and/or respond to familiar social situations. This allowed the recreation therapist to assess each participant's progress and to also discuss the workbooks with the participants. Table 1 is the list of questions from the workbook. The workbook was not given on the first day of treatment because the participants had to learn a significant amount of rules, meet several people, and adjust to their new setting, thus, time did not allow. These open-ended questions were used in addition to the standardized survey to either confirm or disconfirm the results of the questionnaire with another level of data. There were approximately 13 questions and it took about 10–15 minutes to complete.

Setting

The outpatient treatment program in this study utilized an interdisciplinary approach. Th[redacted]ded a child psychiatrist, psychologi[redacted]worker, educational specialist, rec[redacted]pist, and psychiatric technician. The[redacted]t focused on helping the children to d[redacted]p adaptive coping skills, stronger interpersonal/social relationships, increased self-esteem, greater autonomy, and educational progress. The treatment team formally met once a week to discuss each of the participants, but there were continuous informal discussions that occurred. Also, if there were issues that arose such as outbursts, progress in an area of concern, withdrawal, or mood changes, more informal discussions occurred within the treatment team. This program placed a tremendous amount of effort on communication among the treatment team because of its importance for helping each participant.

Table 1.

Workbook Questions

1. What would you do if you were watching T.V. and someone grabbed the remote and changed the channel?
2. If I don't win at something, I usually . . . .
3. Name three ways to be a good friend.
4. When I am angry, I usually . . . .
5. The best way to make a new friend is to . . . .
6. Being a good friend means . . . .
7. Circle the best ideas for handling your anger (Scream and yell, Talk to someone, Throw a tantrum, Run away, Take a break, Go for a walk).
8. Someone pushes you in line at the drinking fountain. You handle it by . . . .
9. Name three ways to handle your anger.
10. Name three things you look for in a friend . . . .
11. What would you do if you and a friend both wanted to play a different game?
12. You come home from school and find your little brother in your stuff. You say to him . . . .
13. Is it OK to be angry? Why or why not?

The participants were referred to this program by community mental health organizations after severe disruptions in the school and/or home settings. Some of the behaviors addressed in this program included extreme aggressiveness or withdrawal, hyperactivity, short attention spans, soiling clothes, defiance of authority, mood swings, learning disability, problematic family and peer relationships, and poor reality testing. The length of the program was approximately 14 to 21 days, but attendance fluctuated significantly. Participants were often moved back to their living setting once parents believed they had learned basic social skills to deal with their social environment or were moved to inpatient services. When the participants were enrolled, they were removed from their present school and temporarily enrolled in the accredited school associated with the hospital.

The participants enrolled in the program were kept in one group throughout the day (8:00 am to 5:00 pm), except for individual meetings with the child's therapists. The group size can range from 1 participant to 10 participants. A psychiatric technician performed the daily maintenance of the milieu such as safety concerns during unstructured play time and transportation of participants to and from treatment sessions, and was the only individual that remained with the participants throughout the day. The participants attended school in the morning and, after lunch, participated in recreation therapy, physical activity, and social work groups. Recreation therapy was the only program the participants attended everyday.

Data Collection Procedures

Data collection of the evaluation included both quantitative and qualitative methods to assess change in the participants' social competence during their treatment. Emphasis in this evaluation was placed on the quantitative component because of the extensive testing of the instrument. The purpose of adding a qualitative component (open-ended workbook) was to either confirm, or disconfirm the results of the scales, and to obtain a different level of data (Tashakkori & Teddlie, 2003). After completion of one day of the program, the psychiatric technician completed the SSBS for each participant, and also completed the SSBS on the participant's final day of treatment. The

after their last recreation therapy session.

Treatment

The recreation therapy program in this study had three main areas of focus: social skills, leisure education, and self-esteem. Self-esteem was also addressed with the social worker, but social skills and leisure education were only formally addressed through the recreation therapy program. The participants attended the recreation therapy program once a day for 1 hour. During their entire length of stay, the participants attended at least one leisure education session and one self-esteem session, but attended a minimum of six social skills sessions.

The type of activities the recreation therapy component focused on were typical social experiences that occurred in the participants' daily lives. The recreation therapist asked the participants what type of social experiences they engaged in at home and school, and responses included games, physical activities, creative outlets, and sharing. One example of a social skills lesson included a common board game that is played by the participants with their friends. Participants engaged in the activity, but were given prompts every turn about their behavior such as "Nice job waiting patiently for your turn," or "Now, we know you have to start over, but that is not playing friendly when you pout or cry. What is a better way to handle this?" Another example was when the participants shared stories through art projects about happy experiences they had with others at school as well as bad experiences. Each of the experiences was talked about and ways the participants had power to make the situation better.

Data Analysis and Results

The data were collected over a 9-month period starting in February 2003 and ending in October 2003. The data were scored accordingly to the directions of the SBSS manual and entered into SPSS. The alpha was set at <.10 recreation therapy program with a limited sample size. A one-way multivariate analysis of variance (MANOVA) was implemented based on the use of the multiple dependent variables. This procedure controls for the inflation of Alpha that occurs when multiple univariate tests are conducted. It determines the significance of differences between the pre- and post-test using each subscale and the overall scales as the different dependent variables (pretest-posttest single group design). Table 2 outlines the descriptive statistics from the analysis, which appear to support the research hypothesis. MANCOVA results confirmed support for the hypothesis by revealing significant Omnibus F ($\Lambda = .45$, F (6, 23.0) = 4.7, $p < .01$, multivariate $\eta^2 = .55$; Pillai's Trace = .55, F(6, 23.0) = 4.7, $p < .01$, multivariate $\eta^2 = .55$). In addition, significant improvements from pretest to posttest were found for the subscale Interpersonal Skills ($F = 7.26$, $p < .01$) and the overall Social Competency Scale ($F = 3.37$, $p = .08$). All other univariate comparisons were nonsignificant at the .10 level. Table 3 outlines the results from the MANOVA.

After the last recreation therapy session, participants completed the "workbook" comprised of open-ended questions about how the participants would respond to various social situations. The data obtained from the "workbook" were coded into one of two categories (appropriate social responses and inappropriate responses). The data was coded by one of the researchers. Another researcher reviewed the coding and indicated agreement or disagreement with the coding of each of the responses. There was no disagreement by the second researcher.

Most of the answers appeared to support the positive results (89%) of the Social Competency Scale. For example, the participants indicated that being a friend means "sharing, being nice, helping, no fighting, and telling the truth." Another example was the responses for the question about appropriate ways to handle not winning included, "say that it is okay, be happy, maybe next time, play again, and say good job." Yet, there were also examples of inappropriate responses that included "yelling, fighting, screaming, blow-up, make my face red hot, and slam my door."

Descriptive Statistics of the Results from the School Social Behavior Scales (N = 15)

	Pre-Test		Post-Test		Difference Between Tests
	Mean	S.D.	Mean	S.D.	
Social Competence Scale	99.93	14.90	110.27	15.92	10.33*
Subscales:					
Interpersonal Skills	39.93	6.52	46.47	6.76	6.54**
Self-Management Skills	33.07	7.03	34.60	6.36	1.53
Academic Skills	26.93	4.27	29.20	4.35	2.27
Antisocial Behavior Scale	63.93	21.55	72.93	18.61	9.00
Subscales:					
Hostile-Irritable	29.53	11.55	34.40	9.63	4.87
Antisocial-Aggressive	15.93	5.93	18.47	5.61	2.53
Demanding-Disruptive	18.47	5.53	20.07	4.92	1.60

*$p < .10$ (two-tailed)
**$p < .05$ (two-tailed)

Upon further analysis of the descriptiv analysis of qualitative data, a sub-categor emerged from the appropriate responses cat gory. There appears to be "rehearsed" r sponses (21%) by the participants in the a

Table 3.
Multivariate Analysis of variance for School Social Behavior Scales (N = 15)

	SS	df	F	p
Social Competence Scale	800.83	1	3.37	.077
Subscales:				
Interpersonal Skills	320.13	1	7.26	.012
Self-Management Skills	17.63	1	.39	.536
Academic Skills	38.53	1	2.08	.161
Antisocial Behavior Scale				
Subscales:				
Hostile-Irritable	177.63	1	1.57	.220
Antisocial-Aggressive	48.13	1	1.45	.239
Demanding-Disruptive	19.20	1	.70	.409

*p < .10 (two-tailed)

propriate response category. For example, when an 8-year old is asked how she/he would respond if someone was not being nice or not playing fairly, it does not seem completely reasonable for her/him to say "self-break." This type of terminology is used frequently in the recreation therapy sessions and in the milieu by adults, and tends not to be typical phrases used by elementary aged children. Some of the other rehearsed responses to questions from the workbook (i.e. getting pushed in line, or a sibling going in their room without asking) included "problem-solve," "compromise," "cooperate," and "take a self-break."

Discussion

The overall consensus was that the recreation therapy program had a positive impact on the social skills of the participants. The general direction of mean score changes from pretest to posttest supported this assertion with all social skills subscales and the overall test score showing improvement. This was supported by the significance of the Social Competency Scale ($p = .07$) and the Interpersonal Subscale of the Social Competency Scale ($p < .01$), as well as the high percentage of appropriate responses in the "workbooks."

On all three subscales of the Social Competence Scale there were increases in social skills, but the least amount of improvement observed was in Self-Management Skills. The participants rarely were given the opportunity to manage themselves due to the structure of the program and therefore, this area was not readily addressed. Academic skills showed the second highest gain in improvement and the highest amount of improvement by the participants was in Interpersonal Skills. This was expected since the program heavily addresses social skills which are needed to help make the transition back into their own school/home environment.

The results were also supported by the responses of the participants in the "workbooks.' The "workbooks" asked open-ended questions about how the participants would react in certain social situations that are common in both participant's home and school environment (i.e. What would you do if you find your brother/sister in your room playing without asking?). Approximately 89% of the responses were coded as appropriate responses rather than inappropriate responses. Yet, within the appropriate response category, a sub-category appeared to be "rehearsed" responses by the participants (21%). For example, when a six year old says she/he would "compromise" when asked how they would respond if a friend wanted to go first in the game, it does not indicate understanding. Although this word is used and demonstrated in the program, it makes it difficult to interpret what is actually learned. She/he may be responding by how she/he has been told to respond without knowing how to act. More concrete examples such as "let her/him go first this time and you can go first next" instead of "compromise" may want to be employed to increase the potential for understanding by the participants.

All three subscales on the Antisocial Behavior Scale had non-significant increases. Observed increases in antisocial behavior scores were unexpected, but may be associated with the intensive therapy environment and the as[redacted]d psychosocial processes. Also, im[redacted]ts in social skills do not necessarily [redacted]reases in antisocial behavior. For[redacted]essing social skills can help de[redacted]social behavior, but the relationship bet[redacted]n these two concepts is complex and antisocial behavior may need to be addressed directly in conjunction with social skill development.

There are several possible explanations for the observed increase on the Antisocial Behavior Scale. This program is an intense experience for children this age and forces them to socially interact with others all day long. This can be a tiring experience and may increase the occurrence of these behaviors. Additionally, the pre-test was completed on the end of the participant's first day in which they still may have been on their best behavior because the environment was still novel. Conducting the pre-test after a couple of days in the program may have given a more realistic score. Furthermore, many of the children do not want to leave the program, and try to misbehave at the end of their treatment in hopes of staying. The program is only 2 weeks, which is a relatively short amount of time and every issue can not be addressed within this time period. Lastly, there are other issues occurring in a child's life that influences her/his behavior that are outside the scope of this evaluation.

Social skills development through recreation therapy is a necessary component for helping children with mental illness. Recreation therapy takes into account the social context of treatment that other mental health treatments do not address (Long, 2004). With social skills recognized as one of the most important aspects of the leisure experience as well as long-term developmental concerns of children with mental illness, this is an influential area for recreation therapy. All three components of the Leisure Ability Model addressed social skills (Stumbo & Peterson, 2004), and social skills directly related to social peer acceptance, which is a necessary component for child development and for long-term behaviors and relationships. Therefore, recreation therapy programs that address social skill development may be one of the most important interventions for children with mental disorders.

In addition, the recreation therapy sessions were enjoyed by the participants throughout their treatment. Enjoyable leisure experiences for children with other peers are important in the development of social goals that affect later social competence. By using a format that is familiar and fun to the participants, and activities they would like share with friends, can be a readily recognized goal and increase understanding of why they are receiving treatment. In recreation therapy, participants enjoyed similar activities before their treatment and using them during their treatment may help them to better understand behaviors they were engaging in beforehand as acceptable or non-acceptable. Thus, contributing to their social development, and therefore, may have a greater potential for influence. Also, during this difficult time (treatment), activities they perceive as fun may encourage the participants to be more attentive as well as serve as an outlet. The recreation therapy component allows participants to learn and practice appropriate social skills that are applicable to the participants' own lives. This will hopefully help facilitate the transfer from the recreation therapy setting to their own lives.

Limitations

The small number of participants is a severe limitation to this study. In particular, concerns for statistical power and generalizability are associated with the current sample. The length of stay necessary for eligibility contributed to the small sample size, and the nature of the program made it impossible to randomly select or assign participants for the program. Another limitation of this study is the recreation therapy program teaches the "formal" social skills classes, but social skills are reinforced throughout the entire program. It is impossible to isolate the impact of the recreation therapy program alone on social skills or competencies; however, it is also the case that recreation therapy served a significant role in the delivery of the social skills training and other agencies could implement a similar approach. In addition, as with any evaluation program, the measurements may show change, but the strength of this change, and how long any changes may last is unknown. Two weeks is a relatively short period of time for an intervention and this is an area of functioning that needs more sophisticated and in-depth methods of evaluation to fully explain the cause of these changes. Utilization of a larger sample, randomization, additional comparison groups isolating various aspects of the program, and further documentation of potential extraneous factors are recommended for future studies in this area.

Implications and Recommendations

Through this evaluation, improvements of social skills were supported. This was observed by the significant increase of mean changes scores on the subscale Interpersonal Skills and the overall Social Competency Scale. As such, the first implication of these findings is that it appears that interpersonal skills can be enhanced through recreation therapy modalities and that recreation therapy professionals, with the guidance of the LAM, can work with the treatment team to develop and deliver such a program throughout the milleu. The recreation therapy program may also want to foster more emphasis on teaching formal self-management skills. Although there were gains in this area, they were not significant. The development of self- management skills appear to compliment and enhance any gains in social skills and can help foster a better transition when the participants leave the program.

Another implication was derived from the "workbooks" that were completed by the participants. Some of the responses appeared to be verbatim responses from the recreation therapist such as "compromise," "problem solve" and "take a self-break." Although their meaning was not assessed, for a child less than 10 years to be utilizing this language appears unorthodox. The recreation therapist may want to use concrete examples that will enhance that understanding for a wider range of cognitive abilities. Also, using terminology that other children this age would not normally use may hinder peer acceptance and their transition back to their old school environment.

Several recommendations can come from this evaluation. First, this evaluation could serve as a baseline for future research studies. There is a need for the standardization of such programs through the development of treatment protocols that identify specific content and mechanisms for consistent delivery of such programs. A standardized mechanism for delivery of practices can further develop recreation therapy as a means for social skill development among children with mental illness and/or behavioral disorders. The steps outlined in the recreation therapy literature for social skill training may be an appropriate start for this protocol (Austin, 2004; Sneegas, 1989). Additionally, although this program is grounded in the Leisure Ability Model, interventions specifically designed using the Leisure Ability Model for developing a protocol for social skills interventions would be beneficial. Lastly, with significant amount of emphasis on social skill effectiveness within recreation therapy, more research is needed to better understand the potential impact of recreation therapy on the development of social competency for children with behavioral disorders.

References

American Therapeutic Recreation Association. (1987). Definition, mission & vision statement. Retrieved on September 22, 2005 from http://www.atra-tr.org/definition.htm.

Austin, D. R. (2004). *Therapeutic recreation: Process and techniques (5th Ed).* Sagamore Publications: Champaign, IL.

Bullock, C. C., & Mahon, M. J. (2001). *Introduction to recreation services for people with disabilities* (2nd Ed.). Sagamore Publications: Champaign.

Burns, B. J., Costello, E. J., Angold, A., Tweed, D., Stangl, D., Farmer, E. M. Z., & Erkanli, A. (1995). Watch: Children's Mental Health Service Across Service Sectors. *Health Affair, 14*(3), 147–159.

Cartwright-Hatton, S., Tschernitz, N., & Gomersall, H. (2003). Social anxiety in children: social skills deficit, or cognitive distortion? *Behaviour Research and Therapy, 43,* 131–141.

Coleman, M. C. (1992). *Behavior disorders: Theory and practice.* Boston: Allyn & Bacon.

Cowen, E. L., Pederson, A., Babigan, H., Izzo, L. D., & Trost, M. A. (1973). Long-term follow-up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology, 41,* 438–446.

Dattilo, J. (2000). *Facilitation techniques in therapeutic recreation.* State College, PA: Venture Publishing.

de Bildt, A., Serra, M., Luteijn, E., Kraijer, D., Sutema, S., & Minderaa, R. (2005). Social skills in children with intellectual disabilities with and without autism. *Journal of Intellectual Disability Research, 49*(5), 317–328.

Dodge, K., Cole, J., & Brakke, N. (1982). Behavior patterns of socially rejected and neglected adolescents: The roles of social approach and aggression. *Journal of Abnormal Child Psychology, 10,* 389–410.

Duck, S. (1998). *Human relationships* (3rd ed.). London: SAGE Publications.

Erdley, C. A., & Asher, S. R. (1999). A social goals perspective on children's social competence. *Journal of Emotional and Behavioral Disorders, 7*(3), 156–167.

Farmer, T. W., & Hollowell, J. H. (1994). Social networks in mainstream classrooms: Social affiliations and behavioral characteristics of students with EBD. *Journal of Emotional and Behavioral Disorders, 2*(3), 143–156.

Foster, S. L., & Ritchey, W. L. (1979). Issues in the assessment of social competence in children. *Journal of Applied Behavior Analysis, 12,* 625–638.

Giaconia, R. M., Reinherz, H. Z., Silverman, A. B., Pakiz, B., Frost, A. K., Cohen, E. (1994). Ages of onset of psychiatric disorders in a community population of older adolescents. *Journal of American Academic Child Adolescent Psychiatry, 33,* 701–716.

Gresham, F. M. (1986). Conceptual issues in the assessment of social competence in children. In P. Strain, M. Guralnick, & H. Walker (Eds.), *Children's social behavior: Development, assessment and modification* (pp. 143–179). New York: Academic.

Gresham, F. M., & Reschly, D. J. (1987). Dimensions of social competence: Method factors in the assessment of adaptive behavior, social skills, and peer acceptance. *Journal of School Psychology, 25,* 367–381.

Gresham, F. M., & Noell, G. H. (1996). Teachers as judges of social competence: A conditional probability analysis. *School psychology review, 25*(1), 108–117.

Hops. H. (1983). Children's social competence and skill: Current research practices and future directions. *Behavior Therapy, 14,* 3–18.

Iso-Ahola, S. E. (1980). *The social psychology of leisure and recreation.* Dubuque, IA: Wm. C. Brown Company.

Kauffman, J. M. (1993). *Characteristics of emotional and behavioral disorders of children andn youth.* New York: Macmillan.

Lauria-Horner, B. A., Kutcher, S., & Brooks, S. J. (2004). The feasibility of a mental health curriculum in elementary school. *Canada Journal of Psychiatry, 49*(3), 208–211.

Lockwood, R. L., Kitzmann, K. M., & Cohen, R. (2001). The impact of sibling warmth and conflict on children's social competence with peers. *Child Study Journal, 31*(1), 47–69.

Loeber, R. (1985). Patterns of development of antisocial child behavior. Annals of Child Development, 2, 77–116.

Long, N. (2004). *Are we doing enough for children?* Sage Publications: United States.

Mash, E. J. & Barkley, R., ed. (1996). *Child Psychopathology.* New York: Guliford Press.

Merrell, K. (2001). School social behavior scales: Test manual. *Assessment-Intervention Resources.*

Mize, J., & Ladd, G. W. (1990). A cognitive-social learning approach to social skill training with low-status preschool children. *Developmental Psychology, 26,* 388–397.

National Therapeutic Recreation Society. (1994). Definitions of recreation therapy. Retrieved on May 4, 2006 from http://www.recreationtherapy.com/define.htm.

Peterson, C. A., & Gunn, S. L. (1984). *Therapeutic recreation program design: Principles and procedures.* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Peterson, C. A., & Stumbo, N. J. (2000). *Therapeutic recreation program design: Principles and procedures.* (3rd Ed). Needlam Heights, MA: Allyn & Bacon.

Roff, M., Sells, S. B., & Golden, M. M. (1972) *Social adjustment and personality development in children.* Minneapolis: University of Minnesota Press.

Rose, D. A. (1996). The effects of a social skills incentive program on the behavior of students in the regular classroom and in special area classes. *Dissertation Abstracts International Section A: Humanities & Social Sciences, 57*(3-A), 1019.

Rosenberg, M. S., Wilson, R., Maheady, L., &

Sindelar, P. T. (1992). *Educating students with behavior disorders.* Boston: Allyn & Bacon

Shaffer, D., Fisher, P., Dulcan, M. K., Davies, M., Piacentini, J., Schwab-Stone, M. E. et. al. (1996). The NIMH diagnostic interview schedule for children. Version 2.3 (DISC-2.3): description, acceptability, prevalence rates, and performance in the MECA study. *Journal of American Academic Child Adolescent Psychiatry, 35,* 865–77.

Sneegas, J. J. (1989). Social skills: An integral component of leisure participation and therapeutic recreation services. *Therapeutic Recreation Journal,* 23(2), 30–40.

Steinberg, Z., & Knitzer, J. (1992). Classrooms for emotionally and behaviorally disturbed students: Facing the challenge. *Behavioral Disorders, 17,* 145–156.

Stumbo, N. J. (1995). Social skills instruction through commercially available resources. *Therapeutic Recreation Journal, 24*(1), 30–55.

Stumbo, N. J., & Peterson, C. A. (1998). The Leisure Ability Model. *Therapeutic Recreation Journal,* 32(2), 82–96

Stumbo, N. J., & Peterson, C. A. (2004). Therapeutic recreation program design: Principles and procedures. (4th Ed.). San Francisco, CA: Pearson Education Publications.

Sylvester, C., Voelke, J., & Ellis, G. D. (2001). *Therapeutic recreation programming: Theory and practice.* State College, PA: Venture Publications.

Tashakkori, A., & Teddlie, C. (Eds). (2003). *Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage Publications.

United States Public Health Service. (2000). *Report of the surgeon general's conference on children's mental health: A national action agenda.* Washington D.C.: Department of Health and Human Services.

United States Public Health Service. (2002). *Report of the surgeon general's conference on children's mental health: A national action agenda.* Washington, D.C.: Department of Health and Human Services.

Walker, H. M., & Hops, H. (1976). Use of normative peer data as a standard forevaluating classroom treatment effects. *Journal of Applied Behavior Analysis, 9,* 159–168.

THERAPEUTIC RECREATION JOURNAL Vol. 40, No. 4, 255-268, 2006

The Use of Virtual Reality with Children with Cerebral Palsy: A Pilot Randomized Trial

Denise Reid and Kent Campbell

This paper reports on a pilot randomized controlled study on the use of virtual reality (VR) for examining rehabilitation outcomes in children with cerebral palsy. The objectives of the study were to see if changes in the quality of upper-extremity movement and in self-perceived self-efficacy and self concept could be found as a result of VR intervention. There were 19 experimental and 12 control subjects. The main outcome tools for the study were the Harter Self-Perception Profile for Children (SPPC), the Canadian Occupational Performance Measure (COPM), and the Quality of Upper Extremity Test (QUEST). The results were all non-significant with the exception of the Harter's social acceptance subscale ($p = .02$). These results need to be interpreted with caution, as there was considerable drop out with the control group and variability in the participants. These results do not suggest that VR is more effective than regular OT or PT intervention for children with cerebral palsy. These findings will be discussed to suggest that VR remains a viable rehabilitation tool and further research needs to be done where strategies for control group retention are devised as well as its use in recreation therapy.

KEY WORDS: *Cerebral palsy, virtual reality, rehabilitation, outcomes*

In this pilot study we sought to apply the emerging technology of virtual reality (VR) to the field of pediatric rehabilitation. The primary question that was addressed was:

Dr. Denise Reid is professor in the Department of Occupational Therapy, University of Toronto, 500 University Ave., Toronto, Ontario. M5G 1V7. d.reid@utoronto.ca. Kent Campbell works at the Bloorview MacMillan Rehabilitation Centre, 350 Rumsey Road, Toronto, Ontario M4G 1R8. kcampbell@bloorviewmacmillan.on.ca