Relatedness for Youth With Disabilities
Testing a Recreation Program Model

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Abstract

The purpose of this study was to test and assess the merits of a recreation program model designed to foster a sense of relatedness among youth with disabilities. This program model depicts the relationship between five program mechanisms (i.e., challenging experiences, peer role modeling, meaningful roles, learning new skills, meaningful roles, and informal social experiences with similar peers) and the program outcome relatedness. These program mechanisms were investigated in a camp and noncamp context for two samples: a sample of youth with disabilities ($n=109$) and a sample of youth with no self-identified disability ($n=100$). From these data, comparisons between camp and noncamp settings and between youth with and without disabilities were possible.

Keywords: relatedness; youth development; disability; program theory; summer camp
Despite the growing body of research connecting recreation programs to an array of positive youth development outcomes, the specific mechanisms by which these desired benefits occur remain elusive to many scholars and camp professionals. The disconnect between program factors and outcomes has led recreation professionals to rely on what is known as “black box” programming (Ewert, 1983; Baldwin, Persing & Magnuson, 2004; Sibthorp, Paisley, & Gookin, 2007). The black box contains all of the program elements that are associated with developing a recreation experience (e.g., recreation activities, staff competencies, staff rapport, and differences in program implementation). The connection between specific program processes and measurable outcomes gets lost in the “black box,” preventing researchers and programmers from explaining how and why participant outcomes are achieved. While the inner workings of the “black box” may never be fully illuminated, it has not been adequately investigated, leaving recreation professionals with the questions: How do recreation programs foster participant development? How does one intentionally design a recreation experience to foster specific participant outcomes?

One promising solution to this problem is to develop program-level theories of change that attempt to provide researchers and programmers with the “how to” explanation that is often missing from large-scale scientific theory. Program models visually depict the relationships between program mechanisms (e.g., camp activities, facilitation techniques, and staff rapport) and immediate participant outcomes (e.g., problem-solving skills, independence, and relatedness) and often serve as the first step in the development of program theory (Baldwin, 2000; Baldwin, Hutchinson, & Magnuson, 2004; Rogers, 2000). In essence, program theory maps out the required steps that programmers must do in order to achieve the desired outcome(s). Researchers can employ program models to theorize and test hypothesized relationships that are relevant to the program structure and population, which allows recreation professionals to develop theory-driven programs that are more likely to lead to desired participant outcomes (Baldwin et al., 2004). Program models that connect specific program elements to participant development will not only inform and advance best practices, but will also help illuminate the inner workings of the proverbial “black box” of programming.

This study serves as an initial step toward developing a program-specific theory of a recreation program that serves youth with disabilities by designing and testing a program model based on relatedness. Grounded within the positive youth development framework, this program model depicts the relationships between five mechanisms that may facilitate a sense of relatedness in youth with disabilities: challenging experiences, peer role modeling, learning new skills, taking meaningful roles, and engaging in informal social experiences. While these programming elements are essential for youth in general (Roth, Brooks-Gunn, Murray, & Foster, 1998), youth with disabilities typically have fewer opportunities to experience these processes in their daily lives (Bluebond-Langer, Perkel, & Goertzel, 1991; Groff & Kleiber, 2001).

Recreation programs that are specifically designed for youth with disabilities may possess unique processes that are not typically present in their daily experiences. Research suggests that youth with disabilities are less likely to engage in structured recreation activity (King, Petrenchik, Law, & Hurley, 2009) and participate in fewer social activities (Stevenson, Pharoah, & Stevenson, 1997). At home, many youth with disabilities have few playmates, friends, or confidants who share the characteristics of their unique identities (French-Gilson, Tusler, & Gill, 1997). These are experiences that many youth without disabilities may take for granted as they have
more opportunities to engage in challenging and social experiences with those who share similar characteristics than their peers who have disabilities (Goodwin & Staples, 2005). Since the passage of the Individuals with Disabilities Education Act (1975) and the Americans with Disabilities Act (1990), youth with disabilities have experienced more inclusion in both school and recreation settings. At the same time, many of these same youth have fewer opportunities to connect with those who also have a disability (Bullock, Mahon, & Welch, 1992). While the inclusion of youth with disabilities in mainstream programming is invaluable, youth with disabilities also need experiences that enable them to connect with each other.

Summer camp is one recreation context that can provide a uniquely fun and safe environment for youth with disabilities. At camp, youth with disabilities have the opportunity to share their stories, learn from one another, and begin to identify peers who have disabilities as role models, all of which may promote feelings of belonging (Hough & Browne, 2009; Gillard, 2009; Gillard & Watts, 2008). People with disabilities have used the term “coming home” (Gill, 1997) to describe what it feels like to be with others who share similar characteristics and experiences. The extent to which summer camp provides youth with disabilities experiences they do not get in noncamp settings (e.g., school, community recreation programs, and clubs) is largely undocumented. Therefore, the purpose of this study was twofold. The primary purpose was to examine the relationships between the five hypothesized camp mechanisms (i.e., challenging experiences, peer role modeling, learning new skills, taking meaningful roles, and informal social experiences with similar peers) and the two environmental contexts of camp and noncamp for both youth with and without disabilities. The secondary purpose is to empirically test and assess the merits of the proposed program model by investigating the relationships between the five camp mechanisms and relatedness.

**Conceptual Background**

**Relatedness**

Instilling a sense of relatedness among youth is a desired outcome for many recreation programs serving children with disabilities. Relatedness is generally concerned with an individual's overall feelings of “fit” within a group and is often associated with perceptions of being accepted, valued, and needed (Sargent, Williams, Hagerty, Lynch-Sauer, & Hoyle, 2002). Throughout the literature, the term relatedness has assumed multiple forms and names, including sense of belonging, membership, connectedness, and attachment. Despite variations in different conceptualizations of relatedness, most scholars seem to agree that all humans possess an innate psychological need or drive to form interpersonal relationships (Bowlby, 1969; Deci & Ryan, 2000, 2002; Maslow, 1954). The need for relatedness consists of two main features: the desire for close interpersonal relationships, and the desire to perceive these relationships as stable, caring, and long-term (Baumeister & Leary, 1995).

Close and meaningful relationships are a key ingredient of relatedness and are believed to develop progressively through a shared understanding about a common experience. According to Duck (1994), commonality of experience occurs when two people encounter the same event and then share with each other their feelings and thoughts about that particular experience. For youth with disabilities, the commonality of experience may be the disability itself and the various medical treatments they have encountered, or a variety of other events such as school, social engagements, and recreation activities. Commonality of experience fosters meaningful relationships through a process of self-disclosure where people create a mutuality of understanding and
realize that they share the same values and begin to develop a sense of respect and appreciation for one another (Duck). As stated earlier, youth must establish meaningful interpersonal relationships to satisfy the psychological need for relatedness.

**Relatedness Outcomes for Youth with Disabilities**

Research on relatedness for youth with disabilities suggests that opportunities to build connections with peers, adults, and communities are essential. Meaningful interpersonal relationships with peers and adults who share similar characteristics may provide youth with disabilities a sounding board for exploring and defining personal identities and values (Goodwin & Staples, 2005). The empowerment literature supports the importance of persons with disabilities coming together (Pensgaard & Sorensen, 2002) as identifying with similar peers can help youth with disabilities learn new advocacy skills (Heumann, 1993), discover positive role models (Bunch & Valeo, 2004), and develop a positive sense of identity that is apart from the concept of disability. Furthermore, belonging to a larger social group can help youth with disabilities combat oppression, foster a sense of value within oneself, and promote identity exploration and development (French-Gilson et al., 1997). Youth with disabilities need opportunities to interact with other youth who have disabilities and experience a sense of relatedness.

Many recreation and education programs that were historically only for youth without disabilities have transitioned into providing inclusion services where youth with and without disabilities engage in various activities together. Ideologically, inclusion aims to bring youth with and without disabilities together in a setting where everyone belongs and feels accepted (Stainback & Stainback, 1990). However, due to a variety of social (e.g., stigmatizing attitudes) and environmental barriers (e.g., lack of accessible facilities and equipment) that are still present within inclusive settings, many youth with disabilities continue to feel socially isolated and unaccepted (Goodwin, 2009). Relationships between youth with and without disabilities often require children with disabilities to conform to the culturally prescribed roles primarily defined by persons without disabilities (Cote & Levine, 2002). In attempting to gain social acceptance, children with disabilities try to appear, act, and behave as nondisabled (French-Gilson, et al., 1997; Watson et al., 2000). Because of this, many youth with disabilities begin to feel uncomfortable interacting with peers who have disabilities, begin to internalize stigmas associated with disability (Gill, 1997), and develop negative self-perceptions (Groff & Kleiber, 2001). Opportunities to develop positive relationships with similar peers ameliorate these problems by helping youth with disabilities experience relatedness and community.

**Relatedness and Camp for Youth with Disabilities**

Summer camps are an important recreational and educational opportunity for youth with disabilities. As a prevalent leisure context, camp programs exclusively for youth with disabilities provide the social space needed to establish meaningful relationships and develop a sense of belonging and community. At camp, children engage in a shared living experience that takes place in a novel environment, apart from family and friends, where they are faced with a variety of challenges and new activities (Fullerton, Brandon, & Arick, 2000). Camps provide positive outcomes, such as outdoor skills, social skills, and sense of belonging for youth with disabilities (e.g., Brannan, Arick, & Fullerton, 1996; Gillard, 2009; Rynders, Schleien, & Mustonen, 1990). The extent to which individuals feel a sense of relatedness is highly dependent on their environment (e.g., summer camp vs. school vs. home) and other contextual variables such as personal traits (Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989).
Scholars and practitioners credit a variety of program factors with fostering developmental outcomes. According to the youth development literature, structured and formal activities that provide youth opportunities to engage in challenging tasks, form social relationships, and develop a positive sense of self are linked to benefits associated with identity formation, social relationships, and self-affirmation (Eccles, Barber, Stone, & Hunt, 2003; Eccles & Templeton, 2002). Research in the summer camp industry has identified camp length and staff training as essential program factors that contribute to participant development (Henderson et al., 2006). Research has also connected opportunities for new experiences and overcoming fears to camper outcomes of teamwork, leadership, and self-esteem (Bialeschki, Henderson, Krenbiel, & Ewing, 2003). Recently, Gillard (2009) found that attending a camp for youth with HIV/AIDS may result in a variety of outcomes for participants, including sense of belonging. In this qualitative study, storytelling, personal interactions within activities, close social contact, and hearing others’ experiences were the camp mechanisms reported by participants to impact perceptions of belonging. Another qualitative study (Hough & Browne, 2009) found that camp achieved camper outcomes through a culmination of activities that occurred during two distinct times at camp: structured time and unstructured time. The study proposed in this article seeks to build on the findings of Gillard and Hough and Browne by empirically testing the relationship between the specific mechanisms of camp and camper perceptions of relatedness (see Figure 1). For purposes of this study, these mechanisms were referred to as the mechanisms of relatedness (MOR).

Figure 1 illustrates a literature-based program model that may provide the structure necessary to design recreation experiences that promote a sense of relatedness for youth with disabilities. In this study, programming mechanisms that may promote a sense of relatedness among youth with disabilities are split into two categories: structured time and unstructured time. Structured time is typically facilitator driven, goal oriented, skill-based, and encompasses all of the organized activities (e.g., sports, rock climbing, and teambuilding activities) youth typically experience in recreation programs. There is a growing body of literature supporting the need for more structured time as organized activities are seen as a potent context for development (Larson, 2000; Beauvais, 2001; Mahoney, Harris, & Eccles, 2006). During structured time, recreation programmers should help youth with disabilities engage in challenging experiences, engage in meaningful roles, engage in learning new skills, and engage as peer role models.
In comparison to structured time, the literature on unstructured time paints a conflicting picture. Unstructured time includes the moments during recreation programs that are not planned or formally facilitated and often includes free time and down time. According to some scholars, unstructured time has little developmental importance (Kleiber, Larson, & Csikszentmihalyi, 1986; Larson & Verma, 1999). However, research supporting unstructured time suggests that it is during these unplanned moments of a program that participants engage in intimate conversations and discuss meaningful life experiences (Hough & Browne, 2009). For youth with disabilities these unplanned moments provide a meaningful experience. During unstructured time, recreation programmers need to provide an informal social space that is conducive to promoting intimate conversations where youth share personal stories, express opinions, and discuss meaningful life experiences.

Challenging Experiences

According to the positive youth development framework, children need to engage in challenging experiences in order to grow into productive and thriving adults (Roth & Brooks-Gunn, 2003). Many youth with disabilities have fewer opportunities to engage with similar peers in challenging activities that are fun and social in nature because of the lack of quality support systems that encourage participation (King et al., 2009) as well as the overprotective nature of some parents (Groff & Kleiber, 2001). Challenging experiences, compared to other activities within recreation programs (e.g., individual activities like arts and crafts, and unstructured social time), require that youth with disabilities engage in group support processes that research has linked to the development of new communication and social skills (Eccles & Templeton, 2002). The ability to cultivate new social connections and expand peer networks is associated with learning these skills (Hansen, Larson, & Dworkin, 2003). Through various staff-facilitated challenging activities (e.g., sports, adventure activities, and challenge initiatives), youth with disabilities engage in a shared experience where they have to work together to problem-solve and achieve group goals. Challenging activities provide youth with disabilities a common experience separate from personal characteristics such as disability and chronic illness. Challenging recreation activities offer youth with disabilities a shared experience where they can develop a better understanding of their peers, create a mutual interest that triggers relationships, acknowledge similarities in personal values (Lee, McCormick, & Austin, 2001), and foster meaningful relationships (Duck, 1994), which are a cornerstone to relatedness (Baumeister & Leary, 1995).

Meaningful Roles

Recreation programs provide youth with disabilities opportunities to take on a variety of meaningful roles. Within this context, youth with disabilities engage in peer mentorship and leadership roles. Staff engage youth with disabilities in fun activities that require them to solve problems, make difficult decisions, set personal goals, and encourage their group members. Through such experiences, youth with disabilities learn that their personal opinions are valued (Taylor, Goodwin, & Groeneveld, 2007), and learn to be more self-determined in their actions (Wehmeyer, Agran, & Hughes, 1998). In recreation programs, youth with disabilities learn about teamwork and the ability to make decisions from a less egocentric perspective, which can foster feelings of trust, mutual respect, and solidarity (Battistich, Watson, Solomon, Schaps, & Solomon, 1991), all of which are associated with perceptions of relatedness.

Learning Opportunities

Recreation programs provide youth with a variety of interesting learning experiences that can help children with disabilities acquire new social and physical skills (Fullerton et al., 2000;
Gillard, & Watts, 2008), as well as gain more knowledge about topics that relate to disability (Bluebond-Langer et al., 1991; Hill & Sibthorp, 2006; Thurber & Malinowski, 2006). For example, youth can participate in educational activities where they can learn from their peers and experts how to navigate social and environmental barriers. These educational experiences help youth with disabilities become more self-aware and learn how to move beyond the perceived limitations associated with their disability (Gillard, 2009). Staff can facilitate learning activities that promote social interaction where youth with disabilities have to work as a team to engage in problem-solving processes.

**Peer Role Models**

As mentioned previously, many youth with disabilities do not have friends or role models who share their unique identities and experiences. Recreation programs can provide a fun and safe environment where youth with disabilities can identify with positive peer role models (Bedini, 1995). Staff who utilize other youth with disabilities as role models may find that their participants learn more effectively. Social cognitive theory supports the utilization of role models and suggests that people learn more efficiently when they have similar others to observe and emulate (Bandura, 1986). Through peer role modeling, youth with disabilities can utilize one another to learn how to effectively navigate their disability (Bluebond-Langer et al., 1991), while at the same time experience feelings of normalcy (Goodwin & Staples, 2005). Peer role models can promote perceptions of relatedness by engaging in discussions of values and providing a caring friendship (Walker & Freedman, 1996). Research investigating the use of role models has found that this program mechanism promoted social acceptance (Devine & Dawson, 2010) as well as increased a sense of connectedness (Karcher, Davis, & Powell, 2002).

**Informal Social Experiences with Similar Peers**

The youth development literature asserts that informal social opportunities are essential to the development of authentic peer and adult relationships (Grossman & Bulle, 2006). Informal social settings encourage youth to engage with each other and share personal stories, play interactive games, and simply “hang out” (Hough & Browne, 2009). Through these processes, youth with disabilities can share their feelings, talk about their experiences, discover common interests, and develop mutual understanding, which can foster feelings of belonging and relatedness (Gillard, 2009).

The literature-based program model presented in this article (see Figure 1) is an initial step toward developing a program theory of relatedness. Models such as this illustrate the mechanisms by which programs influence participant growth (Baldwin, 2000; Weiss, 2000) and can serve as a guide for staff to design recreation experiences that promote a sense of relatedness. In this model, the mechanisms thought to enhance campers’ perceptions of relatedness are challenging experiences, peer role modeling, learning new skills, meaningful roles, and informal social experiences with similar peers. While some research suggests that programmers can intentionally design recreation experiences to foster interpersonal relationships (Hill & Sibthorp, 2006) and a sense of interconnectedness among youth (Sibthorp, Paisley, & Hill, 2003), there appears to be a paucity of research investigating these outcomes.

**Aims and Hypotheses**

The main aim of this study was to examine the relationship between the five MOR variables (challenging experiences, learning opportunities, informal social opportunities with similar peers, meaningful roles, and peer role modeling) among two different populations: youth with disabilities and youth without disabilities. It was hypothesized that youth with disabilities would
experience greater increases in MOR variables than youth without disabilities (hypothesis 1). The secondary aim of this study was to empirically test and assess the merits of the proposed program model by investigating the relationships between the five MOR variables and relatedness. It was hypothesized that the scores on the MOR would positively and uniquely predict participant perceptions of relatedness (hypothesis 2).

**Methods**

**Setting**

This quasi-experimental study took place at two different resident summer camps: Camp A and Camp B. Summer camp provides a vital recreation experience for many youth. For this study, it was essential to find two camp settings that were similar in structure and yet served different youth populations. The camp for youth with disabilities (Camp A) is a nonprofit organization whose mission is to improve the quality of life for people with disabilities through recreation, education, and growth experiences. Located in the mountains of Utah, Camp A offers seasonal and year round programs including: a resident summer camp, travel trips, leisure education, an adult socialization program, winter sport activities, and various mini-camps. This study concentrated on the youth resident summer camp, which the American Camp Association has accredited. During the summer, youth with disabilities come to Camp A to participate in a 5-day resident camp experience that is designed specifically for their particular age group and disability type (e.g., a camp for children with physical disabilities, a camp children with neurofibromatosis, and a camp for children with developmental disabilities).

Camp B is located in the mountains of Utah and provides a resident summer camp program for youth (primarily without disabilities). Camp B’s programs are centered on the values of caring, honesty, respect, and responsibility. At Camp B, youth engage in a 5-day resident camp experience where they participate in a variety of traditional activities. Camp B has been offering quality camp experiences for youth for over 60 years, and has become widely known and respected within the state of Utah.

Camp A and Camp B are similar in size, structure, and offer youth a comparable camp experience. Both of these camps serve youth (ages ranging from 10 to 17) who reside in the greater mountain west region and provide a 5-day resident camp experience in the mountains of Utah. The MOR variables were represented in both camp settings. For example, both Camp A and Camp B offered myriad traditional camp activities (e.g., riding horses, swimming, arts and crafts, canoeing, and team-building activities) that challenged participants as well as promoted learning. Each camp provided an extensive staff training that not only focused on technical skills, but also taught techniques on how to foster positive camper-counselor relationships. Camp staff learned how to design developmentally appropriate camp experiences and to maximize camper participation in all camp activities. Staff members worked with campers to teach social skills and they provided ample unstructured time to offer campers the opportunity to practice these skills while they engaged in informal social experiences. Due to the comparable size, length, and program offerings, the researchers believed that Camp B was similar enough to Camp A to act as the comparison site for this study.

**Participants**

Participants in this study (n=204) were a convenience sample of youth with and without disabilities who attended a 5-day summer camp program at either Camp A (a camp for youth
with disabilities) or Camp B (a camp primarily for youth without disabilities). Both Camp A and Camp B primarily serve youth who are from the greater mountain west region and come from the lower socioeconomic to middle-class families. Youth who attended Camp B and self-identified as having a disability were not included in this study. Participants who attended Camp A represented a variety of disabilities and chronic illnesses including: spinal cord injury, developmental disabilities, cerebral palsy, spina bifida, and neurofibromatosis.

Youth with either chronic illnesses or disabilities were included in this study because both groups face similar social challenges that heighten the need for relatedness that many youth without disabilities do not experience. Compared to youth without disabilities, youth with chronic illnesses and youth with disabilities face more stigmatizing attitudes, prejudice, and social isolation (Groce, 2004). In addition to these social challenges, both groups of children have to cope with health care practices that view disability and chronic illness as deficiencies or abnormalities, which conflict with these youth's perceptions of self and can have profound effects on their social well-being. Thus, it was hypothesized that both youth with chronic illnesses and youth with disabilities could benefit from a specialized camp experience that emphasizes relatedness and the MOR variables. Despite the acknowledged difference in diagnoses, for purposes of this study, youth attending Camp A (youth who have spinal cord injuries, developmental disabilities, cerebral palsy, spina bifida, and neurofibromatosis) will be generally referred to as youth with disabilities.

In this study, all participants engaged in a camp experience that was tailored to their diagnostic grouping. For example, one camp session was designated specifically for youth with physical disabilities and another session was designated specifically for children with neurofibromatosis. This approach aligned well with the premise that there are inherent benefits to socializing with other youth who share a common disability or illness. While there was a camp specifically designed for youth with developmental disabilities, youth with profound to severe intellectual disabilities were not included in this study due to the measurement challenges that are associated with the combination of self-report instruments and impaired cognitive functioning.

**Design**

To test the first hypothesis, a doubly multivariate quasi-experimental design was employed. In this study, there were multiple dependent and independent variables. For the first hypothesis, the five MOR variables served as the dependent variables. Program type (youth with vs. youth without disabilities) and environmental context (camp vs. noncamp) served as the independent variables. The camp level of environmental context includes the time that study participants were attending their summer camp program. The noncamp level of environmental context describes all other environmental contexts (e.g., home, school, and youth clubs) that are not camp. To address the secondary aim, relatedness served as the dependent variable and the five MOR variables served as the independent variables. It was hypothesized that the MOR variables would be significantly and uniquely related to relatedness. The independent variables in this study were not manipulated.

**Measurement**

Two questionnaires were utilized in this study. The first instrument was the Mechanismsof Relatedness Scale (MORS). The MORS was developed for this study to measure the hypothesized dependent variables: challenging experiences, learning opportunities, informal social opportunities with similar peers, meaningful roles, and peer role models. To develop this scale, researchers followed the standard practices and procedures for developing scales based on classical test
theory (DeVellis, 2003). An initial item pool was generated resulting in 35 items (7 items for each domain). After expert review, 24 items were retained to measure 5 domains of the camp relatedness mechanisms: challenging experiences (5 items), learning opportunities (5 items), informal social opportunities (4 items), meaningful roles (5 items), and peer role modeling (5 items). These items were scored on a 4-point Likert-type scale anchored by 1 (never true) and 4 (always true). An example question from each domain follows: “During the past week, I played a game that was difficult for me” (Challenging Experiences), “During the past week, I learned a new skill” (Learning Opportunities), “During last week, I played with friends who are like me” (Informal social opportunities), “During the past week, I helped a friend solve a problem” (Meaningful Roles), and “During the past week, I saw kids who are like me being successful” (Positive Peer Role Models). A bench test was conducted with the pilot version of the MORS. This 24-item questionnaire was administered to 50 youth with disabilities and 50 youth without disabilities to assess the reliability and item performance of the proposed instrument.

The second questionnaire for this study was the Youth Relatedness Scale (YRS). The YRS (see D’Eloia & Sibthorp, 2012 for more information about this scale) was utilized to measure perceptions of camper relatedness and to test the viability of the relatedness programming model. The scale consisted of six items and utilized a 6-point scale anchored at False and True. Sample items include “There are kids my age who are important to me” and “Kids my age care about me.”

**Procedures**

Camp staff members were responsible for administering all questionnaires. Before data collection, all camp staff attended a training that lasted for approximately one hour. This training focused solely on data collection and did not instruct staff on how to be more effective at program provision. At the training, the researchers described the purpose of the study, provided copies of all questionnaires, and outlined the data collection procedures. Staff members were trained on how to administer the questionnaires and what they should do if any of the campers needed extra assistance with the scales due to their disability (e.g., campers with cognitive and developmental disabilities).

For the campers who needed assistance, staff members were instructed to administer the questionnaires verbally using a two-step process. The first step asked the staff to read the two extreme ends of the scale. For example, the MORS employed a 4-point scale, where the two opposing ends were False and True. In this step, the staff would ask the camper to decide whether each item was either Never True or Always True. Once the camper made his or her choice, the staff then implemented the second step of the process. For the second step, the staff asked the camper to think whether his or her choice was true all of the time or just some of the time. Finlay and Lyons (2001) support this process and suggest this technique will help people with cognitive disabilities to more accurately make quantitative judgments about their experiences.

In this study, participants were asked to complete both the MORS and the YRS upon arrival on the first day of camp. The first scale campers completed was the MORS. This scale measured the campers’ perceptions of the five MOR variables. Participants were asked to complete the MORS by answering each item in relation to their week prior to attending this camp (context = noncamp). Included with this scale was a brief demographic survey. Participants were asked their age, if they went to camp the prior week, and if they had a disability. Participants who attended camp (either the study camp or another self-identified camp) the week prior were excluded from this study. After completing the MORS, study participants were asked to take the YRS. This administration of the scale sought to measure precamp perceptions of relatedness. All measures were administered verbally to those campers who needed extra assistance.
In the morning on the last day of camp, all study participants were asked to complete both the MORS and the YRS for a second time. The second administration of the MORS was employed to assess camper perceptions on each of the five MOR variables during camp. Participants were asked to complete the measure by answering each item in relation to their week during camp. After completing the MORS, study participants were asked to take the YRS to measure postcamp perceptions of relatedness.

**Data Analysis**

This study employed two different analyses: a repeated measures multivariate analysis of variance (MANOVA), or doubly multivariate ANOVA, and a hierarchical regression analysis. The first hypothesis, that youth with disabilities would have higher posttest scores on the MORS than youth without disabilities, was tested for statistical significance using a repeated measures MANOVA. Of specific interest to this study was the environmental context (camp/noncamp) by program type (targeting youth with disabilities/without disabilities) interaction term. If camp is a better facilitator of the mechanisms of relatedness for youth with disabilities, then this interaction term should be significant.

The second hypothesis that scores on the MORS would positively and uniquely predict post-camp perceptions of relatedness, was tested for significance using hierarchical regression. Pretest scores on relatedness, program type, and the MORS were regressed on posttest scores of relatedness. The Independent variables (pretest relatedness, program type, and MOR variables) were entered as three blocks into the regression model with pretest scores on relatedness entered first, followed by program type, and then the five MOR variables.

**Results**

**Bench Test Results**

One hundred campers (50 campers from Camp A and 50 Campers from Camp B) participated in the bench test to refine the MORS. To determine which items in the MORS performed the best, item and scale level statistics were examined including item-to-total correlations, descriptive statistics, item variances, and alpha if removed statistics. Nine items were removed from the scale based on the items content relevance and the aforementioned statistical characteristics. The final version of instrument consists of 15 items with representation from each domain: challenging experiences (3 items), learning opportunities (3 items), social opportunities (3 items), meaningful roles (3 items), and peer role models (3 items). The internal structure of the subscales exhibited somewhat lower than expected levels of internal consistency. Given the subscale length (3 items per content domain), this is not entirely surprising. The Cronbach’s alpha for each of the subscales are as follows: challenging experiences ($\alpha=.63$), learning opportunities ($\alpha=.68$), informal social opportunities ($\alpha=.61$), meaningful roles ($\alpha=.74$), and peer role modeling ($\alpha=.70$).

**Study Results**

Two hundred nine participants (41% male, 59% female) from two camps completed questionnaires. The sample included 109 campers with disabilities from Camp A and 100 campers without disabilities from Camp B with ages ranging from 12 to 17. Participants in this study represented a variety of disabilities including developmental disabilities ($n=25$), cerebral palsy ($n=10$), neurofibromatosis ($n=46$), organ transplant ($n=14$), and physical disabilities ($n=9$).

Prior to analysis, all data were screened, cleaned, and assessed for fit between their distributions and the assumptions of multivariate analysis. Data were screened for missing cases. Less than 5% of the cases had missing values and inspection of these missing values revealed no
discernible pattern. Data were then screened for univariate and multivariate outliers for relatedness and the 5 MOR variables (challenging experiences, opportunities to learn, informal social opportunities with similar peers, meaningful roles, and peer role modeling). The variables were examined separately for the youth with disabilities and youth without disabilities. By using Mahalanobis distance with $p < .001$, five cases (one case within the campers with disabilities group and four cases within campers without disabilities group) were identified as multivariate outliers in their own groups. Because several of these cases had extreme $z$ scores ($Z > 3.90$) on relatedness, these cases were deleted leaving a viable sample size of 204 campers (108 campers with disabilities and 96 campers without disabilities).

A repeated measures multiple analysis of variance (MANOVA) was performed to analyze changes in the five MOR variables (see Table 1 descriptive statistics on MOR variables) with environmental context (i.e., pretest vs. post-test) as the within-subjects variable and program type (camp for youth with disabilities vs. camp for youth without disabilities) as the between-subjects variable. The environmental context by type interaction was significant ($\Lambda=.950$, $F_{(5, 192)}=2.02$, $p=.039$), and both main effects were significant. Environmental context ($\Lambda=.653$, $F_{(5, 192)}=20.37$, $p<.001$, $\eta^2=.347$) and program type ($\Lambda=.920$, $F_{(5, 192)}=3.35$, $p=.006$, $\eta^2=.080$) were significantly related to the five MOR variables. As a follow-up, ANOVA tests were conducted to determine which of the five MOR variables were most responsible for the significant MANOVA main effects. As can be seen in Table 2, ANOVA results indicated two significant environmental context by type interactions. Youth with disabilities experienced greater change from pretest to posttest on the peer role model ($p = .015$, $\eta^2=.024$, $M_{pre} = 3.14$, $M_{post} = 3.75$) and meaningful roles ($p = .042$, $\eta^2=.015$, $M_{pre} = 3.08$, $M_{post} = 3.57$) variable than youth without disabilities (peer role model $M_{pre} = 3.30$, $M_{post} = 3.66$; meaningful roles $M_{pre} = 3.35$, $M_{post} = 3.63$). In addition to the interaction, ANOVA results indicated that all of the MOR variables significantly differed for environmental context; they were significantly and universally higher in the camp setting for both groups ($p < .05$). Only one of the MOR variables (social opportunities) significantly differed for program type ($p=.04$, $\eta^2=.021$). Youth without disabilities experienced more informal social opportunities than youth with disabilities experienced.

Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Program type</th>
<th>M</th>
<th>SD</th>
<th>n</th>
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<td>0.72</td>
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<tr>
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<td>0.61</td>
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<td>Camp B</td>
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<td>0.91</td>
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<tr>
<td></td>
<td>Camp B</td>
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<td>0.97</td>
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<td>0.57</td>
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<td></td>
<td>Camp B</td>
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<tr>
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<tr>
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<td>Camp B</td>
<td>3.13</td>
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<tr>
<td>Posttest Meaningful Roles</td>
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<td>0.56</td>
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<td></td>
<td>Camp B</td>
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<tr>
<td></td>
<td>Camp B</td>
<td>3.66</td>
<td>0.52</td>
<td>96</td>
</tr>
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</table>
To test the second hypothesis, a hierarchical regression was conducted. The hierarchical regression analysis assessed the extent to which each of the MOR variables uniquely explained and predicted postcamp perceptions of relatedness above and beyond what both pretest scores of relatedness and program type explained. As can be seen in Table 3, the five MOR variables \( R^2 = .206, F(5, 195) = 15.867, p < .001 \) were significant predictors above and beyond what pretest scores of relatedness and program type predict of post camp perceptions of relatedness. These variables account for approximately 21 percent of the unique variance in post camp perceptions of relatedness. However, review of the regression coefficients and standardized beta weights specify that only two variables, social opportunities \( (B = .245, \beta = .187, t_{(195)} = 2.74, p = .007) \) and peer role models \( (B = .433, \beta = .267, t_{(195)} = 3.711, p < .001) \) significantly predicted the variance. The semi- partial correlations illustrate the magnitude of the unique variance the independent variables social opportunities and peer role models explain.

Table 3

Hierarchical Regression Analysis Predicting Postcamp Perceptions of Relatedness

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²Δ</th>
<th>B</th>
<th>β</th>
<th>Semi-Partial</th>
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<tbody>
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<td>Block 1 (Pretest of Relatedness)</td>
<td>.535</td>
<td>.286</td>
<td>.530</td>
<td>.535*</td>
<td>.436</td>
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<tr>
<td>Block 2 (Program type)</td>
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<td>.000</td>
<td>.529</td>
<td>.534</td>
<td>.061</td>
</tr>
<tr>
<td>Block 3 (MCRS Variables)</td>
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<td>.206</td>
<td>.245</td>
<td>.187*</td>
<td>.140</td>
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<td>Social Opportunities</td>
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<td>.267**</td>
<td>.020</td>
<td>.016</td>
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<tr>
<td>Peer Role Models</td>
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<td>.037</td>
<td>.027</td>
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<td>Challenging Experiences</td>
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</tr>
<tr>
<td>Learning Opportunities</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, ** p<.01
Discussion

Summary of Results

The first hypothesis that youth with disabilities would experience greater gains in MOR variables during camp than youth without disabilities was partially supported. However, the observed effect size estimates generally suggest that both youth with and without disabilities have similar perceptions about their experiences with the five mechanisms of relatedness (MOR). Campers with and without disabilities perceived that camp was more supportive of the five MOR variables (challenging experiences, informal social interactions, meaningful roles, learning experiences, and peer role modeling) than their noncamp environments. Based on the observed effect size estimates, the changes attributed to camp are much larger than those attributed to either program type (camps serving youth with disabilities vs. camps serving youth without disabilities) or context (camp/non-camp). Second, there was a significant difference between program type (Camp A vs. Camp B), which was largely explained by the youth with disabilities universally reporting fewer informal social opportunities than youth without disabilities.

The follow-up ANOVA tests revealed several significant findings. The interaction term (environmental context by program type) for the MOR variable peer role models was significant. This suggests that youth with disabilities, compared to youth without disabilities, experienced greater engagement with peer role models and more social opportunities at camp than at their noncamp environments. Findings also indicated that camp engaged all children (youth with and without disabilities) with each of the MOR variables more than their noncamp environments suggesting that summer camp is, in general, a positive experience for youth. Lastly, results of the ANOVA showed that youth without disabilities had more informal social opportunities than youth with disabilities.

The second hypothesis that scores on the MOR would positively and uniquely predict postcamp perceptions of relatedness was partially supported. Results of the hierarchical regression analysis suggest two important findings. First, the MOR variables had a significant relationship on youth perceptions of relatedness beyond the experience of camp alone (pretest). Second, two of the MOR variables primarily explained the variance in youth perceptions of relatedness: social opportunities and peer role models. These findings suggest that youth perceptions of relatedness may be effected by other variables not included in the MOR and that these variables may be different for youth with disabilities and youth without disabilities.

Implications for Practice

Summer camp is a recreation context that provides all youth a unique experience to foster positive relationships, learn new skills, and become thriving young adults. More specifically, youth in this study perceived camp as providing them with more engaging challenging experiences, learning experiences, informal social experiences, peer role modeling experiences, and meaningful roles than their time not at camp. This finding is consistent with other research suggesting that summer camp does provide youth with fun, safe, outdoor experiences that can achieve a wide range of outcomes such as identity development, social skills, thinking skills and spirituality (Thurber, Scanlin, Scheuler, & Henderson, 2007). Summer camp can and should be viewed as a viable and unique recreation environment that can promote positive youth development.

This study further dispels the myth that youth with disabilities do not experience a full range of benefits from recreation programs because of their participation limitations. Youth with disabilities are often portrayed in society as being incapable of having the same experiences as
youth who do not have a disability (McAvoy & Estes, 2001). The results of the present study indicated only small difference between the campers with and without disabilities and how they perceived the mechanisms and relatedness. These findings are consistent other research that states persons with disabilities can and do realize the same benefits as persons without disabilities when participating in outdoor programs (McAvoy, 2001; McAvoy, Holman, Goldenberg & Klenosky, 2006; McAvoy & Lais, 1999).

Research has increased our understanding of what types of benefits youth with and without disabilities achieve through participation in recreation programs, yet very little is known about the mechanisms of change that foster this growth. Program models that visually display the connections between program-level variables (e.g., counselor-camper relationship, activity type, and facilitation style) and participant outcomes (e.g., relatedness) serve as an initial step towards identifying the “how to” explanation that is often missing from macro-level theory (Baldwin, 2000; Baldwin, Hutchinson, & Magnuson, 2004). The program model presented in this study illustrates the connections between the program-level variables engaging challenging experiences, learning experiences, informal social experiences, peer role modeling experiences, and meaningful roles and the participant outcome variable relatedness. While this recreation program model was only partially supported by the results, this study serves as an initial step in designing a program-specific theory and illuminating the proverbial “black box”.

The results of this study highlight peer role modeling and social opportunities as important program mechanisms for youth with disabilities. Previous research supports this conclusion and suggests that through peer role modeling, youth with disabilities can learn new skills, develop a positive identity that incorporates their disabilities (Bluebond-Langer et al., 1991; Gliedman & Roth, 1980), promote feelings of normalcy (Goodwin & Staples, 2005), and foster perceptions of relatedness (Rhodes, 2004). Many youth with disabilities do not have role models who share their unique identities. Therefore, recreation programs might want to consider how they can facilitate peer role modeling for program participants who have disabilities.

In addition to engaging peer role models, the results of this study indicate that recreation programs should incorporate informal social opportunities as part of their programming repertoire. This conclusion is supported by other research that asserts youth with disabilities need to have contact with peers who have similar characteristics (Connors & Stalker, 2007) and that informal social opportunities are essential to the development of authentic peer and adult relationships (Grossman & Bulle, 2006). Unstructured social opportunities provide the context youth with disabilities need to share with each other their feelings, talk about their experiences, discover common interests, and develop a mutual understanding, all of which are essential to developing meaningful relationships (Duck, 1994) and a sense of belonging (Gillard, 2009).

**Limitations**

This study had several limitations. The scale that the researchers utilized to measure the mechanisms of relatedness was specifically designed for this study. While the scale was developed using the procedures suggested by DeVellis (2003) and was bench tested, the measurement tool did not go through the rigors of a traditional scale development pilot test and subscales were less reliable than ideal. The data collected indicated some interdependence between each of the five MOR domains. This suggests that for participants in this study, some of the mechanisms of camp relatedness were not seen as discrete.

This study relied solely on the use of self-report measures. Both of these scales were developed for youth; however, they were not specifically designed for youth with disabilities. For some
youth with disabilities, especially youth with cognitive disabilities, self-report measures can be problematic (Finlay & Lyons, 2001). This is especially true when questionnaires ask the respondent to make a judgment of frequency, degree, and time (Malik, Ashton-Shaeffer, & Kleiber, 1991; Moss et al. 1997). The present study did include youth with mild to moderate cognitive disabilities and the self-report instruments required participants to make judgments about their experiences at two different times (once focusing on the time before camp, and second focusing on the time at camp) on abstract ideas. The self-report measures may or may not have accurately captured their perceptions.

This study utilized a quasi-experimental design where the contexts of camp and noncamp were compared using two different camp programs. While the researchers believe these camp programs were similar in design and could be compared, the summer camp setting is complex and filled with a multitude of variables that can affect the way programs are delivered and participants achieve outcomes. Due to the nature of this study’s design, the researchers had no real control over the way the camp program was delivered making it hard to determine whether study participants truly received comparable experiences.

In addition to the potential differences in camp setting, the noncamp variable was not clearly defined. Noncamp could have represented the campers’ home, summer school, or a community recreation program. Therefore, the result that camp is different from noncamp should be interpreted broadly. Furthermore, the researchers operated from the assumption that the noncamp environment would be more supportive of the relatedness mechanisms for youth without disabilities than it was for youth with disabilities. This study did not fully support this assumption and indicates that both youth with and without disabilities may or may not experience these mechanisms in their noncamp environments.

Other complications with this study pertain to issues of generalizability. One of the primary aims of this study was to test an etiological program model of relatedness. One of the limitations to building and testing program-specific models is that the generalizability of the findings is limited and may only apply to programs similar in design (Baldwin, 2000; Baldwin et al., 2004; Sibthorp et al., 2007). The mechanisms tested in this program model do not include all of the potential predictors of change. This study did not include some important participant-level (e.g., past camp experience and type of disability) characteristics and course-level (e.g., staff-camper rapport and activity type) predictors. One important participant-level characteristics that was not addressed is type of disability. The counselor-participant relationship, for example, is a critical ingredient in the camp experience that could shape the way in which the MOR variables are facilitated.

Furthermore, this study utilized a convenience sample derived from two camps that included a wide range of disabilities including chronic illness. The extent to which these groups of youth are similar is not known. Therefore, the results of this study should be interpreted with caution. This type of sample makes generalizing to all youth with and without disabilities problematic.

Future Directions and Conclusions

The aim of this study was to better understand the mechanisms through which recreation programs foster perceptions of relatedness for youth with disabilities. For researchers and programmers to better understand how youth development occurs through recreation participation, further testing and evaluating of program models like the one proposed in this study is
needed. Future research should extend this model to similar programs and settings to further assess its merits. One comparison of interest for researchers and recreation professionals who work with youth who have disabilities could be to examine the differences between an inclusive recreation setting to a program that is specially designed for youth with disabilities. While both settings have merits, each may achieve different participant outcomes. More research is needed to explore these differences and the outcomes they achieve.

In this study, the model was tested using a quasi-experimental design where the findings were mostly correlational. As a result, cause and effect relationships were not determined. Future research should investigate the effects of recreation programs that are intentionally designed using the relatedness program model. In addition, future research should employ participant behavior documentation in conjunction with the self-report instruments to help further ascertain whether or not the mechanisms presented in the relatedness program model are actually present in the recreation program. This approach will assist researchers in determining whether or not youth perceptions of the program mechanisms are related to more objective criteria.

Future research may also want to incorporate qualitative methods such as participant observation and interviews to assess the youth experience. This approach may provide deeper insight into how recreation programs are perceived by youth with and without disabilities, and help illuminate some of the complex interactions that occur between program processes and youth development outcomes. Understanding how program processes achieve outcomes is essential to the intentional design and implementation of recreation programs.

In recent years, the recreation industry has made a considerable effort to align its practices with the positive youth development framework (Bialeschki, Henderson, & James, 2007; Henderson et al., 2006; Witt & Caldwell, 2005). A fundamental tenet of this framework is that society should view youth as assets where the focus is on their strengths and abilities rather than on their weaknesses and difficulties (Roth et al., 1998). While this shift in focus is paramount for youth with disabilities, the majority of research on youth with disabilities does not yet incorporate literature from the positive youth development framework. Youth with disabilities stand to benefit from recreation programs that integrate youth development processes into their programs. This study was an initial step towards bridging youth development processes and recreation practices for youth with disabilities.

References


McAvoy, L. (2001). Outdoors for everyone; opportunities that include people with disabilities. *Parks and Recreation, 36*(8), 24–32.


