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I am submitting herewith a dissertation written by Janelle Nimer entitled "An evaluation of the outcomes of children with multiple disabilities who attended Camp Koinonia in 2009." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Social Work.

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An Evaluation of the Outcomes of Children with Multiple Disabilities who Attended
Camp Koinonia in 2009

A Dissertation Presented for
the Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Janelle Nimer
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Dedication

I would like to dedicate this document to the many human and animal relationships that have supported me throughout this adventure. This dissertation is dedicated to my loving partner, Bryan Foster. It was you who encouraged me to pursue doctoral education when I had my doubts. Your support never wavered through this challenging process. I feel that this accomplishment is as much yours as it is mine. For this, and everything else, I love you, and once again—you were right!

I would like to dedicate this document my therapy dogs Val and Annabelle, who supported and comforted me at times when no one else could. May you continue to bring comfort and joy to me and to those in need for many more years to come.

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Abstract

One of the largest populations with whom social workers work are individuals with disabilities. Due to the increase of children with disabilities, it is important to evaluate the programs in which the children participate. Camp Koinonia is a program at the University of Tennessee that works with children with multiple disabilities for one week a year. The purpose of this study was to conduct a program evaluation on Camp Koinonia in 2009 ($n = 109$). This study assessed age, (continuous variable, $n = 109$) gender (male, $n = 61$; female $n = 48$), category of disability (cognitive, $n = 50$; physical, $n = 59$) and type of disability (cerebral palsy, $n = 17$; down syndrome, $n = 21$; autism spectrum disorder, $n = 18$; and mental retardation, $n = 22$). This study compared the previously mentioned variables to physical, cognitive, and emotional outcomes as measured by an altered version of the Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R).

The results of reliability analysis found that each subscale of physical ($\alpha = .71$), cognitive ($\alpha = .80$), and emotional ($\alpha = .83$) outcomes of the FACTR-R were reliable. A multiple groups confirmatory factor analysis was conducted on the FACTR-R which found that this measurement tool was a good tool to use. The results of this study found that the children with physical disabilities had statistically significant improvements with their physical outcomes. Specifically, the children with cerebral palsy had statistically significant improvements in physical outcomes. There were also statistically significant improvements in children with autism spectrum disorders and emotional outcomes. A discussion of limitations and recommendations for future research is presented.

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Chapter 1

Introduction

A critical role for social workers is to work with vulnerable populations and to advocate for their rights (Weber, 2005). The policy statement on disabilities of the National Association of Social Workers (NASW) (1999) states, “people with disabilities have been ostracized within their own societies and therefore have been subjected to pervasive discrimination and oppression” (p. 270). Much of the disability-related work thus far has followed the medical model, focusing on illness and what a person could not do. In the United States, people with disabilities are treated within the medical model framework of diagnosis and treatment, which views people with disabilities as “passive, dependent, and deficient” (NASW, p. 272).

The goal from the perspective of the medical model is the “cure and eradication of difference” (Fries, 1997, p.6). Fries opposed the use of the medical model, suggesting that a social definition model of disabilities is more appropriate in the United States. The social definition model highlights the limitations society places on people with disabilities and focuses on changing the society, not people with disabilities (Fries, 1997). Fine and Asch (1988) suggested that people with disabilities should be the subject, not the object of a study and that research should be framed from the life experiences of people with disabilities.

Social workers are frequently active participants in therapeutic recreation, camp therapy, wilderness adventure, and outdoor education programs. These therapeutic options are offered through both governmental and nongovernmental organizations as

interventions with marginalized groups, such as children with multiple disabilities (Gilbert, 1998). Despite the high rate of utilization of these types of interventions by social workers, there is little in the social work literature that has considered the justification for using nature as a context for treatment (Neill & Heubeck, 1998; Witman, 1993). The positive aspects of these programs are often assumed, though little debate has occurred on how, or if, these programs improve physical, cognitive, and emotional outcomes (Ungar, Dumond, & McDonald, 2005).

This study explored the physical, cognitive, and emotional outcomes of differently disabled populations of youth who attended a therapeutic camp. It used a correlational analysis on a post-test only evaluation design focusing on camper's physical, cognitive, and emotional outcomes after they attended a therapeutic camp. The statement of need, purpose of the study, objectives, literature review, methodology, analysis of data, and findings will be reviewed in this report.

Statement of Need

Gross and Hahn (2004) identified the need for treatment programs for people with disabilities, and recommended that physical, cognitive, and emotional outcomes of these programs be properly assessed. According to the 2008 U.S. Census Bureau (p.4), "both the number and percentage of people with any disability was higher in 2005 (54.4 million, or 18.75) than in 2002 (51.2 million, or 18.1%). The number and percentage of people with a severe disability was also higher in 2005 (35.0 million, or 18.7%) than in 2002 (32.5 million, or 11.5%)." Children with disabilities under the age of 15 also

increased from 6 million in 2002 to 8.8 million in 2005 (U.S. Census Bureau, 2008).

Treatment options and the focus of treatment vary for children with disabilities.

Longmore (2003) reported that the most rapid rate of growth in the incidence of disability is occurring in younger age groups. He also indicated that people from lower socioeconomic groups and people from racial minority groups had higher frequencies of disabilities. Due to this increase in children's disabilities, it is imperative to have services and programs in place that empower children and assess their functional abilities.

Social work and therapeutic recreation can easily work together because they have a connection as therapeutic recreation focuses on vulnerable populations (i.e. children with multiple disabilities). Analysts agree that therapeutic camping programs are effective social work interventions and that they can and should be developed more fully (Breton, 1990; Kelk, 1994). However, little research has been done in both social work and therapeutic recreation in the area of evaluating the outcomes of camp programs for participants with disabilities. With the increasing pressure for professionals to document their programs, evaluation plays a critical role in program design (Witman, 1994). The fields of social work and therapeutic recreation are responding to this focus on documentation of effectiveness. In addition, the degree of relationship between high quality programming and client benefit has not been established. For programs that serve persons with multiple disabilities, it may be more difficult to offer quality programming that meets the participants' needs than for programs concerned with a single disability. A person's disability is confounded by multiple disabling conditions requiring more complex provision of the program, and greater need for accurate outcomes evaluation of

the program. Using a program evaluation design on Camp Koinonia, this study looked at the impact of the intervention of a therapeutic camp on physical, cognitive, and emotional abilities of children with multiple disabilities, and evaluate whether the campers' outcomes vary by the types of disabilities present.

Camp Koinonia is a week-long residential therapeutic camp for children who have multiple disabilities. This evaluation was needed to determine if Camp Koinonia is producing expected outcomes for individuals with multiple disabilities. The descriptive information and the inferential findings gathered from this study will be used to evaluate the need for any changes in Camp Koinonia. These results can be generalized to social work and recreation programs for persons with multiple disabilities, as well as give feedback for program planning at Camp Koinonia.

Purpose of Study

According to Posavac and Carey (1997), the primary purpose of program evaluation is to contribute to the provision of quality of services to people in need. Therefore, the purpose of this study was to evaluate the outcomes of children with multiple disabilities at the 2009 Camp Koinonia. This purpose was accomplished through the examination of the relationship between camper demographics, diagnoses, and outcomes as measured by an altered version of the Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R) (Appendix A). The altered version was changed so each of the counselors would be able to understand and complete the measurement more effectively. The FACTR-R measures physical, cognitive, and emotional outcomes of the campers.

A secondary purpose to this study was to evaluate the reliability of the FACTR-R scale. This purpose was accomplished by conducting reliability estimates of each question and subscale. Once this was completed, a multi-group confirmatory factor analysis was also completed on each question and subscale.

Objectives

Research Questions

1. Is there a relationship between campers' demographics (i.e. age, gender) and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?
2. Is there a relationship between campers' types of disability (e.g. cognitive or physical) and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?
3. Is there a relationship between campers' primary diagnoses (i.e. autism spectrum disorder, mental retardation, cerebral palsy, down syndrome) and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

Discussion

In summary, this study analyzed data pertaining to the provision of physical, cognitive, and emotional outcomes to persons with disabilities through Camp Koinonia, a University of Tennessee program held each spring. This section introduced the topic of this study, identified the research program, and discussed the need for the study.

The rest of the study is organized into the following sections: the literature review, which presents a review of the literature related to evaluation of therapeutic camping programs with children with disabilities, the research methodology section which will discuss the design, and the data analyses which was used to interpret the results. The final section includes the results of the data analysis and the conclusion of the study.

Chapter 2

Literature Review

Introduction

This section will present the history, the theories, and a review of the research literature relevant to the present study of evaluating programming effectiveness for persons with disabilities involved with therapeutic camping. This section will begin by focusing on the beginnings of the organized camping programs and the growth of camping programs for persons with disabilities based on a combined theory of custodial-welfare, scientific-medical model, and a humanistic educational model. Discussion will include a critique of the research on camping programs for persons with disabilities.

History

The organized camping movement began in the late 1800s as a social movement that has continued to grow (Rodney & Ford, 1971). The goals of these camps for youth have undergone several changes in focus and at different times have emphasized work ethic, physical fitness, character growth, environmental education, and recreation (Sessoms & Henderson, 1994). The American Camping Association defines organized camping as, “A sustained experience which provides a creative, educational opportunity in group living in the out-of-doors. It utilizes trained leadership and the resource of natural surroundings to contribute to each camper’s mental, physical, social, and spiritual growth” (American Camping Association, 1990, p.3).

Kennedy, Austin, and Smith (1989) report the provision of camping programs for large numbers of persons with disabilities began in the 1930s. During the 1960s most camps for persons with disabilities started paralleling the goals of camps for the general population. However, opportunities to attend camping programs were still limited. In the 1970s, it was estimated that only about 10% of children with disabling conditions had the opportunity to experience camping (Hillman & Appel, 1978). Since the implementation of the Americans with Disabilities Act (ADA) in 1990, more camps are believed to be responding to the needs of persons with disabilities (Sessoms & Henderson, 1994). Bedini, Bialeschki, and Henderson, (1992) stated that camping programs cannot deny individuals with disabilities participation or offering unequal participation. Scanlin (1992) also describes the implementation of ADA in camping programs. As many as 5.3 million children have the opportunity to attend organized camping experiences each summer (Sessoms & Henderson, 1994). However, children with disabling conditions continue to have fewer comparable camping opportunities.

Sessoms and Henderson (1994) describe camping programs by organization and administration classification that includes day camps, short-term residence camps, long-term residence camps, or trip camping. Additionally, camp programs can be classified by function or program emphasis, such as special interest (e.g. gymnastics, music), special needs (persons with disabilities or terminally ill), or general-purpose camps. Camping programs designed for persons with disabilities can focus on provision of services for a population of persons with a particular disability (such as for persons with cerebral palsy or spina bifida) or for persons with multiple disabilities.

Camping and therapy also have a long history. Mishna, Michalski, and Cummings stated in 2001 that camp might become the therapist's most valuable tool to assess and change functioning for individuals with disabilities. Specialized camps, like Camp Koinonia, offered controlled experiences, creative learning opportunities, real living situations, and excitement without the client resorting to antisocial behavior (Morse, 1998). Such camps also provide social workers an opportunity to observe clients for a continuous period of time.

Theoretical Perspective

Literature on the application of theory to camp therapy research has increased exponentially in the last twenty years (King, Stokols, Talen, Brassington, & Killingsworth, 2002). The focus has been on modifying intrapersonal processes (e.g., self-efficacy, perceptions), but recently interest has diverted to other approaches that address relationships between the individual, micro-environment (e.g., social supports), and macro-environment issues (e.g., public policy) (Ayvazoglu, Oh, & Kozub, 2006; King et al., 2002). What follows is a reflection on theoretical applications to therapeutic recreation from macro-level practice and micro-level practice.

Reiter (2000) identified several theoretical models related to rehabilitation for people with disabilities that can be adapted to therapeutic recreation and social work. Reiter's theoretical models were the custodial-welfare model, scientific-medical model, humanistic educational model, and a combined model.

The custodial-welfare model pertains to the dependency of individuals with disabilities have upon others and society having the responsibility of taking care of these

individuals (Reiter, 2000). Some children with disabilities who participate in camp therapy may be totally dependent upon someone else; therefore, some camp settings would not provide their basic care.

The scientific-medical model involves the individual being seen as one who is sick and needs treatment to reach an optimal level of functioning. From this theoretical framework, the individual is viewed as a diagnostic label and a treatment plan is developed to help the individual based upon the label (Reiter, 2000). This theory does not work in a camp setting because a treatment plan is not developed and followed. Camp therapy does not focus on the illness and what a person cannot do. The goal of camp is to focus on what each participant can do.

The humanistic-educational model views the individual with respect because the person is human. In humanistic education, the whole person, not just the intellect, is engaged in the growth and development that are the signs of real learning. The emotions, the social being, the mind, and the skills needed for a career direction are all focuses of humanistic education (Reiter, 2000). Camp therapy could relate to this model in that each participant is treated as a unique human being with special abilities.

The combined model is a mixture of the three previous models and is parallel to Maslow's (1970) hierarchy of need: (a) survival, (b) security, (c) belonging, (d) self-worth, and (e) self-actualization. From this combined model, individuals with disabilities have a right to receive adequate care for their survival, be informed about their disability, have input into their care and therapy, have services available to meet their needs, and have the right for "autonomy and self-actualization" (Reiter, 2000, p. 14).

To some, camp therapy may be seen as a service to take care of individuals with disabilities. To others, camp therapy may be seen as a treatment option. Optimally, each person who happens to have a disability is treated as unique, having human rights, and should be encouraged to become who he or she wants to become. People with disabilities can have rational thoughts and self-control. More programs and services are needed that provide the opportunity for vulnerable populations to grow, develop, have their needs met, and increase their self-esteem (Reiter, 2000). The aforementioned combined theoretical model is the proposed macro-level perspective theory to support camp therapy as an intervention for children with disabilities.

The strengths perspective was also applied to camp at the micro level, even though the strengths perspective is not an official theory (Saleebey, 2002). From this perspective, people have strengths and are resilient. The strengths perspective focuses on what a person can do rather than what one cannot achieve. The perspective also points to the importance of believing that people can grow and make changes in their lives (Saleebey, 2002). People with disabilities do have strengths and the potential for positive change in their lives. I intend to show through this study that camp therapy is an intervention that can increase positive outcomes in children with multiple disabilities.

Camp Programs

Over the past several decades, there has been phenomenal growth in the number and a variety of therapeutic camp programs offered to youth (Kelk, 1994; Schwartz, 1960). In addition to regular vacation summer camps, camping programs are used increasingly with specific populations who have special medical, physical, or mental

health needs or who are considered to be at risk (Byers, 1979; Kelk, 1994; Langdon & Kelk, 1994). These populations enjoy camping experiences through camps established for individuals either with disabilities or through integration into regular camps (Blake, 1996; Michalski, Mishna, Worthington, & Cummings, 2003). The literature recognizes that camp therapy programs offer participants valuable opportunities to grow and develop, as youths experience a range of psychological, social, emotional, and physical benefits (Byers, 1979; Kelk, 1994; Schwarz, 1960). The advantages consist of a return to nature and a break from life in the city, increased self-worth, improved relationships with both peers and adults, greater ability to take on responsibility, and better coordination and physical skills (Byers, 1979; Kelk, 1994; Levitt, 1994; Schwartz, 1960; Shasby, Heuchert, & Gansneder, 1984). The following discussion encompasses each research study's purpose, description, sample size, research design, measures, statistical tests, outcomes, and limitations.

Sexter (1972).

Sexter (1972) conducted one of the first studies on camp programs for children who are mentally retarded. The purpose of this study was to determine the effects of integrated and segregated residential camp settings on adjustment of children who were diagnosed as having mental retardation and the attitudes of children without any diagnosis. A pre-test/post-test design was used with 72 children who were diagnosed as having mental retardation and on 234 children without a diagnosis. This study used a questionnaire that measured camper adjustment.

The researcher used t-tests for independent groups to compare the post-test adjustment scores of the segregated and integrated groups of campers who were mentally retarded. They also used a two-way ANOVA with repeated measures to analyze the scores in order to determine attitudes of children without a diagnosis toward the disabled children (Sexter, 1972).

Sexter (1972) found no significant differences in adjustment between the children with disabilities in the segregated setting and the children with disabilities in the integrated setting. They also found that attitudes of non-disabled children in the segregated camp remained the same toward the disabled children. There were statistically significant positive changes in attitudes of normal children and staff in the integrated camp toward disabled children. Therefore, this was the first study that showed that non-disabled and disabled children have better attitudes toward each other after participating in an integrated camp.

This study had numerous threats to statistical conclusion validity, specifically the threat of type 1 error, and poor reliability of measure. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Rickard, Serum, and Forehand (1975).

Rickard, Serum, and Forehand (1975) conducted a study examining a therapeutic summer camp program for children who are emotionally disturbed and their group problem-solving skills as a tactic for solving interpersonal conflicts. This study compared campers who were diagnosed as emotionally disturbed in two camp settings: a recreation

camp and a therapeutic camp. The experimental group included 21 boys at the therapeutic camp and 30 boys at the recreation camp. The researchers administered the questionnaire midway through and at the conclusion of each camp. The researchers for this study created the questionnaire to assess problem-solving skills of the campers' interpersonal conflicts. The data analysis consisted of means and standard deviations. According to the researchers, the campers from the recreation camp chose punishment as a consequence significantly more frequently than the discussion alternative. The campers from the therapeutic camp chose the discussion alternative significantly more frequently. The main findings of this study showed that as compared to children from the recreation camp the campers exposed to the problem solving training tended to choose the problem-solving alternative (Rickard et al., 1975).

This study had numerous threats to statistical conclusion validity, specifically the small sample size, increased risk of type 1 error, poor reliability of measure, and used descriptive statistics. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Hung and Thelander (1978).

Hung and Thelander (1978) conducted a study to determine the effectiveness of a training program in a three-week residential camp setting on the self help skills, language skills, generalization of language from training to non-training settings and reduction of undesirable behaviors for autistic children. There were 15 autistic boys and three autistic girls for a total of 18 in the experimental group. The camp program consisted of four

structured classes each day. The authors did not provide any detailed descriptions about data collection methods or instruments. Therefore, this study had numerous threats to statistical conclusion validity. The researcher did state that counselors filled out reports every night on the children's self help progress and results of all training trials. This study reported significance by listing percentages. Specifically, 79% of the training programs given to the children (unclear as to how this was calculated) produced improvement of 15% or greater. Every child improved 15% or more in at least one area of treatment during camp. A couple of limitations of this study were the lack of description of study design, data collection methods, and instruments were given (Hung & Thelander, 1978).

The statistical conclusion validity was limited by small sample size, increased risk of type 1 error, the reliability of measures, and the reliability of treatment implementation. Considering the researcher did not describe the measure used in this study, there is no evidence for reliability.

Oakley (1980).

Oakley (1980) conducted a study to determine the differential effects of a summer camp experience on two groups of people who are mentally handicapped. The two groups included those who live in an institutional setting and those who live in a community. This study divided subjects into 2 experimental groups and 1 control group. The experimental groups included 15 subjects from each of the two settings who attended camp, for a total of 30 campers. The control group consisted of 8 subjects from each of the two settings who did not attend the camp, for a total of 16 individuals. The research

design included a pre-test, post-test, and follow-up using the Camp Lotsafun Evaluation Form. The data analysis for this study included an ANOVA to test for differences. This study found a statistically significant improvement in self-care but no significance in social interactions. Results should be viewed with caution, as a Repeated Measures ANOVA would have been a more appropriate choice for this design (Oakley, 1980).

This study had numerous threats to statistical conclusion validity, specifically the threat of small sample size, increased threat of type 1 error, poor reliability of measure, and poor reliability of treatment implementation. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Pohl (1981).

Pohl (1981) conducted a study to determine the extent to which a residential camp environment and home environment affects the social and independent functioning behaviors of mentally retarded children. This study did a single subject design on three severely mentally retarded boys. The subjects were observed at home and at a therapeutic camp. According to the researcher, each child had an individualized treatment plan designed to improve self-care, social, and educational skills. The research design took place in two phases, one at home and one at camp. The trained observers used the same scale for both environments focusing on the child, their behavior, and their environment. Observations were transformed into derived scores that consisted of means and standard deviations. The data analysis of this study showed that the camp experience

improved the subjects' basic skills, especially in the areas of personal hygiene and eating (Pohl, 1981).

This study had numerous threats to statistical conclusion validity, specifically the small sample size, increased threat of type 1 error, poor reliability of measure, poor reliability of treatment implementation, and use of descriptive statistics. Numerous threats to reliability are also present because the instrument used was unique to the study with no support regarding reliability and validity.

Freeman, Anderson, Kairey, and Hunt (1982).

Freeman, Anderson, Kairey, and Hunt (1982) conducted a study to evaluate the effectiveness of a two week therapeutic day camping experience in facilitating change in children with adjustment or behavioral problems. This study was administered to each of the 42 children who participated in the study; three goal attainment scales both pre- and post-camp separately to the children, parents, and counselors. These scales specified individualized behavioral goals for problem areas relating to self, family, children and group, which could be realistically attainable within two weeks. The researchers used standardized t-tests to do the data analysis. The post-camp scale showed that the children, parents, and counselor groups each perceived the children as achieving positive change in regard to specific goals (Freeman et. al., 1982).

The statistical conclusion validity was limited by a potential threat of type 1 error, the reliability of measures, and the reliability of treatment implementation. The measure used in this study was unique to the study with no support regarding reliability and validity therefore there is no evidence for reliability.

Casali (1983).

Casali (1983) conducted a study to help the counselors at Camp Koinonia establish physical contact with their campers at camp. During the week-long residential camp, the counselors were responsible for all of the camper's physical, emotional, psychological, and social needs. This study first involved the design of a therapeutic massage training program for the counselors to administer to their multi-handicapped campers. This study had 10 counselor-camper pairs in the experimental group and 9 counselor-camper pairs in the control group.

Casali (1983) used a single subject design, with pre-, mid-, and post-test observation, the treatment was given three times during the course of the week. The researcher used a behavioral observation instrument specifically designed for this study. This instrument was designed to record the duration and frequency of intentional physical contact between counselor-camper pairs. The researcher used MANOVA, ANOVA, and a Duncan's test for statistical analyses of the behavioral measure. The researcher also used a series of graphs to look at the frequency and duration of events for each counselor-camper pair. Results were described for both qualitative and quantitative data. The researcher stated that there were no significant differences between the experimental and control groups. An important trend that the researcher reported was that there was more contact from pre to post-test measurement periods by the experimental group.

A major limitation to this study was the inability to control all of the extraneous variables that were present at Camp Koinonia during the implementation of the study. Another limitation was the time constraints in which a proper baseline could not be

established. A third limitation was that the researcher did not take into account any variability among subjects due to differences in disabilities. Finally this study had numerous threats to reliability and validity. This study had numerous threats to statistical conclusion validity, specifically the small sample size, increased risk of type 1 error, poor reliability of measure, and poor reliability of treatment implementation. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Espinosa (1983).

Espinosa (1983) conducted a qualitative content analysis on Camp Koinonia student evaluation papers from 1979 to 1983. This study was conducted in order to examine the strong and weak aspects of Camp Koinonia from a students' perspective. The researcher used a convenience sample and analyzed 625 student's final papers. Espinosa (1983) used frequencies and cross tabulations to analyze the papers. The researcher concluded that the specific staff roles at the camp had an influence on the recommendations given by the students to improve the camp program. The researcher also concluded that Camp Koinonia was a positive experience filled with friendship and love (Espinosa, 1983).

This study had numerous threats to statistical conclusion validity, specifically the increased risk of type 1 error, poor reliability of measure, and poor reliability of treatment implementation. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Zemke, Knuth, and Chase (1984).

Zemke, Knuth, and Chase (1984) studied the self-concepts of a group of children with learning difficulties before and after an experience in a residential camp offering therapeutic recreational activities designed to improve their sensori-motor performance. The researchers used a quasi-experimental design with 16 campers who took the Piers-Harris Children's Self-Concept Scale (Piers, 1969, 1977) before and after camp. The researchers conducted Pearson's correlations, means, and standard deviations. It was found that there were statistically significant gains in the group's mean post-test scores. Therefore, the campers had a statistically significant increase in self-concept. The researchers suggested that the changes in self-concept were related to changes in body image and adaptive behavior due to the therapeutic camp program (Zemke et al., 1984).

Considering the small sample size, the increase threat of type 1 error, and the descriptive statistics used for this study there was numerous threats to statistical conclusion validity. This study used a standardized measure, the Piers Harris Self-Concept Scale (Piers, Harris, & Herzberg, 1984), and it was shown to be reliable and valid.

Bodzioch, Roach, and Schkade (1986).

Bodzioch, Roach, and Schkade, (1986) conducted a study on ways to improve paraplegic adolescents' self-esteem, independence and eventual employability. The researchers used a pre-test and post-test design comparing a treatment group of 8 campers to a control group of 8 campers, all with paraplegia. Each group consisted of four boys and four girls, 14-17 years old.

This study used the Piers Harris Self-Concept Scale (Piers et al., 1984). Piers et al. (1984) listed both reliability and validity coefficients for the Piers Harris Self-Concept Scale. After conducting an ANOVA the researchers concluded that the campers demonstrated improvement in social skills and self-concept testing as compared with the scores of a matched control group, although the improvement did not reach statistical significance (Bodzioch et al., 1986).

One limitation of this study was that the researchers could not isolate the components of the camp program that produced the positive effects. Improvements in self-concept and social skills might have been the result of psychological programming specifically geared to these variables, to the adaptive living training designed to encourage independent functioning, and to the opportunity afforded these young people to become closely acquainted with others who have similar difficulties or to a combination of these factors. Bodzioch, Roach, and Schkade, (1986) feel that “changes in vocational preferences could have been the result of specific vocational programming such as job site visitation or the vocational counseling” (p. 200).

Considering the small sample size, the increase of risk type 1 error, and the descriptive statistics used for this study there was numerous threats to statistical conclusion validity. This study used a standardized measure, Piers Harris Self-Concept Scale (Piers et al., 1984), was shown to be reliable and valid.

Dreikurs (1987).

Dreikurs (1987) conducted a study to apply psychological techniques to children with behavioral problems for the purpose of stimulating good social development. The

researcher used individual observations of each child's behavior to determine appropriate treatment of the child at camp. The researcher also held continuous staff training regarding treatment of the children throughout each day of camp. This study researched 20 children with behavioral problems that attended the day camp program. This researcher only used a frequency analysis of how many children had improved behavior. The results showed that 17 children had improvement in behavior. Out of the 18 children that returned to camp the following year, 16 campers had no difficulties with their behavior (Dreikurs, 1987).

This study had numerous threats to statistical conclusion validity, specifically the small sample size, potential threat of type 1 error, poor reliability of measure, and poor reliability of treatment implementation. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Gruber (1992).

Gruber (1992) conducted a study to investigate the effects of an integrated day camp experience on attitudes of children without disabilities toward children with disabilities. This study researched four different camps sponsored by the county Department of Recreation in a major metropolitan area. Disabilities included mental retardation, learning disabilities, hearing impairment, physical disabilities, and autism. Gruber (1992) included 281 children without disabilities and 21 children with disabilities. The researcher did a randomized group design with three treatment conditions. The treatment conditions included sensitivity awareness training by a team of four staff

members, sensitivity awareness training by a single staff member, and integration only where no information about disabilities was presented. The researchers used post-session questionnaires to measure attitudes of campers without disabilities toward persons having disabilities. Observations were conducted once each week of the two-week session. A social validation questionnaire was also used to gather information about staff. Gruber (1992) used a chi-square analysis to analyze the dichotomous data from the attitude measure and the measure the effects of the treatment conditions on staff satisfaction. A linear models procedure with repeated measures ANOVA was used to analyze the social interaction data.

The researcher found no differences in attitudes of campers without disabilities towards campers with disabilities across the three treatment groups. All three groups reported positive attitudes towards campers with disabilities. The researcher also reported that campers in the two awareness groups indicated knowledge about what a disability is more frequently than those in the other group. Campers in the two sensitivity awareness groups were also more likely to say that children with disabilities should be at camp.

The statistical conclusion validity was limited by a small sample size of children with disabilities, increased risk of type 1 error, and the reliability of measures. The measure used in this study was unique to the study with no support regarding reliability and validity therefore there is no evidence for reliability.

Sable (1995).

Sable conducted a study in 1995 to determine the effects of three different camp programs on adolescents' acceptance of individuals with disabilities. The three programs included a physical integration, disabilities awareness program, or an adventure program for the duration of the week at camp. There were a total of 71 campers who participated in each program. However, the results only reported on the convenience sample of 66 campers who met the research criteria. The researcher conducted a quasi-experimental study that was field based. The campers were randomly assigned to one of three groups and data was collected in a pre-test and post-test format. The instrument used to evaluate the effects of the disability awareness and adventure program was based on the Acceptance Scale (Voeltz, 1980, 1982). The researcher used ANOVAS and ANCOVAS to examine the group differences. The data analysis suggested that mere physical integration does not significantly change adolescents' acceptance of persons with disabilities, but both the disability awareness program and the inclusionary adventure program had a statistically significant impact on attitudes toward their peers with disabilities (Sable, 1995).

Considering the small sample size and the increase threat of type 1 error, there were threats to statistical conclusion validity. This study used a standardized measure, Acceptance Scale (Favazza & Odom, 1996), that was shown to be reliable and valid therefore, there were few threats to reliability.

O'Halloran (1996).

O'Halloran (1996) conducted a study examining the behavioral effects of teaching social skills in a residential camp environment to children who are diagnosed with

learning disabilities. This study included 47 campers in the experimental group and 47 campers in the control group that attended a 7-week residential coed camp for children who have learning disabilities. The study design used was a pre-test, post-test design looking at the campers' self-concept. The researcher used scales that assessed at the children's self-concept, social skills, and social information processing. For data analysis the researcher used paired t-tests. This study found that there were statistically significant positive increases in social information processing skills and awareness of appropriate social behavior in high self-concept in the experimental group (O'Halloran, 1996).

Considering the small sample size, the increase of chance type 1 error, and the weak statistics used for this study there was numerous threats to statistical conclusion validity. This study used a standardized measure, Piers Harris Self-Concept Scale (Piers et al., 1984), which was shown to be reliable and valid.

Brown (1997).

Brown (1997) conducted a study on the relationship between the implementation of activities and the outcomes derived from participation in those activities as a function of activity programming at Camp Koinonia. The researchers used a measurement tool that was completed for each activity by the counselor for their camper for one day as the camper participated in nine activities. The measurement tool that was used was the Daily Activity Assessment Scale (DAAS) (Antozzi, Hayes, & Impara, 1980). Each camper was grouped by level of primary disability (slight, moderate, or severe) based on the camper's application to Camp Koinonia. Brown (1997) used Pearson's Correlation Coefficient to

assess the relationship between the activity implementation and camper outcomes. Coefficients were computed for all subjects, and for each group based on the severity of their disability. The researcher tested for significance between correlation coefficients to assess differences observed for each of group of disability severity. The results of this study showed that the involvement of all campers in the activity and appropriate interaction skills of the staff were more related to the camper's outcomes. The data also suggested that positive outcomes might be more difficult to acquire as severity of disability increases (Brown, 1997).

The statistical conclusion validity was limited by a potential threat of type 1 error and the reliability of treatment implementation. The measure used in this study was unique to the study with no support regarding reliability and validity therefore there is no evidence for reliability.

Edwards (1997).

Edwards (1997) conducted a study to analyze what the perceived impact of individuals with multiple disabilities had on university students who served as camp counselors and activity staff at Camp Koinonia. This study conducted a qualitative content analysis on final papers submitted by students who attended Camp Koinonia. Edwards (1997) reviewed 348 papers and conducted a rank order correlation and t-test on the data. The researcher found that gender of subjects did not have a difference on how Camp Koinonia impacted them. A content analysis of the data strongly suggested that the Camp Koinonia program continue to be offered (Edwards, 1997).

This study had numerous threats to statistical conclusion validity, specifically poor reliability of measure, and poor reliability of treatment implementation. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Finch (1983).

Finch (1983) conducted a study to examine the changes in attitudes of children without disabilities toward their peers with disabilities in an inclusive summer day camp setting. The researcher analyzed an eight-week summer day camp program. The program included specific inclusion interventions for children with disabilities as well as information meetings for children without disabilities. This study had an experimental group of 411 campers from the inclusive camp setting and a control group of 200 at a comparable, non-inclusive day camp. Finch (1983) conducted a pre/post test design with the experimental group and the control group. The researcher revised an attitude survey to include positive and negative statements about children with disabilities. The researcher used ANOVA data analysis on this survey. The researcher found significant differences between groups on pre/post test analysis. Therefore, no other between group comparisons were performed. Finch (1983) found that there were statistically significant overall positive attitude changes in children without disabilities toward children with disabilities in the inclusive group. He also found that there were no changes for the non-inclusive group. The researcher attributed success to the intensive staff training and commitment to the goals of the program, enabling staff to reach a comfort level conducive to success.

This study had numerous threats to statistical conclusion validity, specifically the increased threat to type 1 error, poor reliability of measure, and poor reliability of treatment implementation. This study also exhibited numerous threats to reliability because the instrument used was unique to the study with no support regarding reliability and validity.

Mishna, Michalski, and Cummings (2001).

Mishna, Michalski, and Cummings (2001) conducted a study evaluating a camp program for children and adolescents with learning disabilities and psychosocial problems. This study focused on the impact of a three-week therapeutic summer camp program for 48 children and 48 adolescents (for a total of 96 campers) who were disabled. The research design for this study focused on increasing social competence, self-confidence, and self-esteem and decreasing isolation. The researchers used a multi-method approach using standardized instruments, feedback questionnaires, and telephone interviews. The researchers gathered the data using a pre-test, post-test, and follow-up design. The standardized measures include the Self-Esteem Index (Brown & Alexander, 1991), the Children's Loneliness Questionnaire (Asher & Wheeler, 1985), and the Social Skills Rating System (Gresham & Elliott, 1990). To test for statistical significance the researchers used paired t-tests. This study had statistically significant results showing that the therapeutic camp program enhanced campers; social competence, self-confidence, and self-esteem and decreased camper's sense of isolation. The researchers offered a compelling illustration of how camp can provide an effective context for social group work interventions. The researchers also tried to show that therapeutic camp programs

link new approaches with enduring social work principles that reflect social work's roots. According to this study, therapeutic camp programs provide a unique intervention through which disabled children and youth may make gains in their emotional and social functioning while having fun with peers (Mishna et al., 2001).

This study used paired t-tests to analyze the data, exhibited an increased threat of type 1 error, and had poor reliability of treatment implementation; therefore this study had numerous threats to statistical conclusion validity. The researchers used three measures that have all been shown to have reliability and validity, the Self-Esteem Index (Block & Robins, 1993), the Social Skills Rating System (Diperna & Volpe, 2005) and the Children's Loneliness Questionnaire (Asher & Wheeler, 1985); therefore there is strong evidence for construct validity.

Blachman and Hinshaw (2002).

Blachman and Hinshaw (2002) conducted a study on peer experiences of children with Attention Deficit Hyperactivity Disorder (ADHD). The researchers assessed if social difficulties were influenced more by friendships or peer status. Specifically, the researchers empirically documented the range and patterns of friendship experiences (i.e., friendship participation, stability, and quality) of girls with ADHD who attended a therapeutic summer camp. This study examined the above-mentioned patterns among previously unfamiliar, ethnically diverse girls with ADHD (n = 140) and comparison group (n = 88) girls, aged 6 – 12 years old, who attended five-week therapeutic summer camps. Each participant completed the scales before camp, on the third week of camp,

and after camp; friendships were indexed by examining patterns of reciprocal nominations.

The scales used were the Parent Inattention *and* Teacher Inattention scales (Swanson, 1992), the Child Behavior Checklist (CBCL) *and* Teacher Report Form (TRF) Attention Problem scores (Achenbach, 1991), Diagnostic Interview Schedule for Children, 4th ed. (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), and the Wechsler Intelligence Scale for Children, 3rd ed. (WISC-III; Wechsler, 1991). DuPaul, Power, McGoey, Ikeda, and Anastopoulos (1998) showed that the Parent Inattention and Teach Inattention scales are reliable and valid. The Child Behavior Checklist and the Teacher Report Form Attention Problem scores were shown to be reliable and valid (Achenbach, Edelbrock, & Howell, 1987; Macmann, Barnett, & Lopez, 1993). Shaffer et al. (2000) reported on the reliability of the DISC-IV, however, there has been no test of validity of this measure. Kaufman (1994) established reliability and validity of the WISC-III. This study performed standard metric nomination procedures (Coie, Dodge, & Coppotelli, 1982) to calculate positive and negative nomination proportion scores for each child. This study also conducted independent sample *t* tests for positive nominations, negative nominations, and friendship nominations, with ADHD versus comparison group status as the independent variable (Blachman & Hinshaw, 2002).

According to the researchers at each assessment point, girls with ADHD had fewer mutual friends and were more likely to have no friends. Girls with Combined-type ADHD exhibited difficulties maintaining friendships from the beginning to middle of

camp, whereas girls with Inattentive-type ADHD demonstrated poor friendship stability from the middle to end of camp. This study also found that in general, girls with ADHD had higher levels of negative relationship features, including conflict and relational aggression, than did comparison girls, but levels of positive relationship features did not differ across subgroups. Overall, although girls with ADHD were able to make friends to some extent, they differed from comparison girls in terms of the likelihood of doing so, the ability to maintain the friendships that they did form, and the levels of negative features found in their friendships (Blachman & Hinshaw, 2002).

One limitation with this study was the processes observed herein (in a time-limited setting with unfamiliar peers) do not necessarily translate into processes that develop over longer periods of time in classrooms, where children typically enter with prior reputations (Blachman & Hinshaw, 2002). This study performed paired t-tests for comparisons between groups, this type of metric is descriptive in nature therefore this study had limitations with statistical conclusion validity. All the measures used in this study were standardized and the researchers performed standard metric nomination procedures, which strengthened the reliability of this study.

Michalski, Mishna, Worthington, and Cummings (2003).

Michalski, Mishna, Worthington, and Cummings (2003) conducted a study on the multi-method impact evaluation of a therapeutic summer camp program for children and youth with learning disabilities and related psychosocial problems. This study included 48 children and 48 adolescents for a total of 98 participants in this study. This study examined the degree to which program objectives were achieved through a pre-camp,

post-camp, and follow-up design. The researchers used the Self-Esteem Index (Brown & Alexander, 1991), Social Skills Rating System (Gresham & Elliott, 1990), and the Children's Loneliness Questionnaire (Asher & Wheeler, 1985). The statistical tests the researchers used were mean, standard deviation, and paired t-tests. The results indicated that the campers reported less social isolation, experienced modest improvements in self-esteem, and expressed high levels of satisfaction with the camp (Michalski et al., 2003).

This study used descriptive statistics to analyze the data and exhibited a risk of type 1 error; therefore this study had numerous threats to statistical conclusion validity. The researchers used three measures that have all been shown to have reliability and validity, the Self-Esteem Index (Block & Robins, 1993), the Social Skills Rating System (Diperna & Volpe, 2005) and the Children's Loneliness Questionnaire (Asher & Wheeler, 1985); therefore there is strong evidence for reliability.

Boyd, Friman, Hawkins, Labin, Sutter, and Wahl (2008).

Boyd, Friman, Hawkins, Labin, Sutter, and Wahl (2008) conducted a study examining the effects of a peer intervention program designed to increase interactions between children with and without disabilities in an inclusive summer camp. The intervention the researchers implemented consisted of four behaviors that were modeled and taught to the campers without disabilities to increase interactions with campers with disabilities: "STAR ('S' represented stay, 'T' for talk, 'A' for assist, and 'R' for reward)" (p. 94).

The researchers used a single subject design to determine the effects of the STAR intervention over two week sessions. This studies experimental group included 6 campers

with disabilities (1 female with emotional disorder, 4 males with autism, and 1 male with visual impairment). The control group included 6 campers without disabilities (4 males and 2 females) (Boyd et al., 2008).

Six observers acted as the primary and secondary data collectors tallying behaviors. According to the researchers observers practiced data collection and calculations on a video of children interacting until a reliability agreement of 90% or above was reached. To analyze the data the researchers calculated means and percentages of each behavior. According to the researchers, the results of this study showed an overall increase in the number of interactions and demonstrated that the STAR program was effective in increasing interactions between campers with and without disabilities (Boyd et al., 2008).

One limitation of this study came as a result of the design of the intervention itself. During the baseline condition, the campers with and without disabilities were seated away from each other, essentially eliminating any opportunity for interaction between the two. During the intervention observations, the campers with and without disabilities were seated next to each other, simply placing the campers next to each other may have increased the incidence of interaction between them (Boyd et al., 2008). This study exhibited a small sample size, an increase risk of type 1 error, and only used descriptive statistics for the data analysis; therefore, this study had numerous threats to statistical conclusion validity. Measures used in this study are unique to the study with no testing for reliability and validity therefore there is no evidence for reliability.

Discussion

The literature review showed that camp programs for children with disabilities could have positive and negative outcomes on individuals associated with each program. The positive outcomes showed that camp programs increased positive attitudes of counselors on children with disabilities (Edwards, 1997; Espinosa, 1983; Oliver, 1997; Sitzlar, 1986). Camp programs increased positive attitudes of non-disabled campers on their disabled counter parts (Finch, 1998; Gruber, 1992; Sable, 1995; Sexter, 1972). Camp Koinonia implemented their activities correctly and had positive camper outcomes (Brown, 1997). The literature also showed that therapeutic camp programs increased the amount of friends (Blachman & Hinshaw, 2002), positive interactions (Boyd et al., 2008), physical contact (Casali, 1983), self-help skills (Hung & Thelander, 1978), language skills (Hung & Thelander, 1978), self-care (Oakley, 1980; Pohl, 1981), and problem solving (Rickard et al., 1975). There were also improved social skills (Bodzioch et al., 1986; Michalski et al., 2003; Mishna et al., 2001; O'Halloran, 1996), self-concept (Bodzioch et al., 1986), positive behaviors (Dreikurs, 1987; Freeman et al., 1982; O'Halloran, 1996), and self-esteem (Michalski et al., 2003; Mishna et al., 2001; Zemke et al., 1984).

The outcomes should be taken with caution because of the numerous threats to reliability and validity that most of the studies had. There were thirteen studies that had threats to reliability due to using a measure that had not been proven to be reliable or valid (Sexter, 1972; Rickard et al., 1975; Hung & Thelander, 1978; Oakley, 1980; Pohl, 1981; Freeman et al., 1982; Casali, 1983; Espinosa, 1983; Dreikurs, 1987; Sable, 1995;

Edwards, 1997; Finch, 1983; and Boyd et al., 2008). There were eight studies that had numerous threats to statistical conclusion validity (Bodzioch et al., 1986; Brown, 1997; Casali, 1983; Espinosa, 1983; O'Halloran, 1996; Pohl, 1981; Sable, 1995; Zemke et al., 1984). Finally, there were two studies that had few threats to reliability and validity; therefore, these two studies outcomes should be considered more reliable and valid than the other studies (Mishna et al., 2001; Sexter, 1972).

This literature review showed that more reliable and valid research needs to be conducted on camp programs. There were only five studies that assessed cognitive outcomes (Richard et al., 1975; Hung & Thelander, 1978; Freeman et al., 1982; Dreikurs, 1987; and Brown, 1997), and nine studies that assessed emotional outcomes (Sexter, 1972; Gruber, 1992; Sable, 1995; O'Halloran, 1996; Finch, 1983; Mishna et al., 2001; Blachman & Hinshaw, 2002; Michalski et al., 2003; and Boyd et al., 2008). Therefore, these outcomes need to be assessed because physical, cognitive, and emotional functioning are an important part of quality of life for individuals with disabilities (Mishna et al., 2001; Longmore, 2003; Gross and Hahn, 2004; and Ungar et al., 2005). Therefore, this study was designed to fill this gap in the literature. Another gap this study assessed was the lack of literature on individuals with multiple disabilities and comparing across disabilities. The majority of the literature reviewed focused on programs concerned with a single disability.

Chapter 3

Methodology

This study used program evaluation as an applied research tool in an effort to determine the effectiveness of the Camp Koinonia program with children who have been diagnosed with multiple disabilities. This study was primarily descriptive in nature and was not obtrusive to camp participants since it was an ex post facto design. In this study a secondary data analysis was conducted on data collected as a normal part of the Camp Koinonia program during the 2009 camp. In this chapter of the study the research design, setting (Camp Koinonia), sampling procedures, subjects, and the primary disabilities of youths who participated in the camp will be described. These disabilities will be broken down into cognitive, emotional, and physical disabilities.

Design

This study used an ex post facto, post-test only design. This type of study design is commonly used in evaluations of programs that are intended to provide similar benefits for a group of people with similar needs. As Posavac & Carey (1997, p. 142) note, “The most common approach to evaluation in such settings is to examine how well participants perform after the program is over.”

The basic objective of the study was to determine if youth participation in Camp Koinonia was beneficial by assessing if the campers finished the program with a level of achievement that matched the program’s implicit or explicit goals. For this program

evaluation all that is needed is a set of systematic observations by the camp counselors at the end of the camp.

Setting

The setting in which the data for this study was gathered was the Clyde M. York 4-H Training Center in Crossville, Tennessee, which hosted the 2009 Camp Koinonia. The data for this study (the FACTR-R) were collected at this site at the end of the camp program.

Camp Koinonia.

Camp Koinonia was the setting in which the data for the study were gathered. “The Camp Koinonia project is an activity-based outdoor recreation program offered each spring by the Recreation and Leisure Studies program of the Department of Exercise, Sport and Leisure Studies at the University of Tennessee, Knoxville. This program provided an organized camping experience for children with multiple disabilities while preparing college students to conduct a residential outdoor recreation and education program” (Brown, 1997, p.12-13).

The goals of Camp Koinonia were:

1. “To provide each camper with an educational and fun-oriented experience in an outdoor environment.
2. To provide an educational experience for each university student involved in the program.
3. To provide an enriching and rewarding experience that will foster the emotional, social, and physical well-being of the camper.

4. To provide an opportunity to establish personal interrelationships among campers, counselors, and staff” (Hayes et al., 1997, p.8)

The Camp Koinonia project is divided into two parts:

1. Phase one: The program is offered as a college course and the students receive 24-27 hours of classroom instruction on how to organize, develop, implement, and evaluate a one week outdoor residential camping program for persons with multiple disabilities, and
2. Phase two: The actual implementation of the camp at an outdoor camping location in Crossville, Tennessee. During this week, the college students were responsible for all aspects of care for the approximately 100 campers, as well as conducted all activities, programs, and evaluations of the program.

The children that attended Camp Koinonia ranged in age from seven to twenty-one and had varying degrees of cognitive, emotional, and physical abilities. Prevalent conditions of campers included mental retardation, autism, visual impairment, hearing impairment, cerebral palsy, spina bifida, and attention-deficit/hyperactivity disorder. All campers who attended Camp Koinonia had more than one disabling condition.

The recreational program at Camp Koinonia was designed to provide a broad range of activities appropriate to the skills and needs of the participants (campers), and included nine activities that were offered daily to each cabin group. The nine activities typically vary from year to year, with the most common activities being therapeutic horseback riding, nature and crafts, canoeing, music and movement, sports and games, cooking, and rope initiatives. The qualities of the programming of these activities were

all evaluated in a summative evaluation design during the camp. This study focused on the analysis of data from one measure used at Camp Koinonia, the altered Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R).

Sampling procedures.

This study entailed a secondary data analysis of data for those youths who participated in the 2009 Camp, hence the sample was one of convenience. All youths in the sample have multiple disabilities. Specifically, only those youths with multiple disabilities and whose counselors turned in the FACTR-R for the 2009 Camp Koinonia were included in this study.

The following was the inclusion criteria for this study:

1. Camper had to attend Camp Koinonia in 2009
2. Camper's parents and doctor had to complete the Camp Koinonia application (including age, gender, and primary diagnosis)
3. Camper's counselor had to complete and turn in the FACTR-R

Subjects.

The subjects for this study were the campers who attended Camp Koinonia in 2009. The counselor who was assigned to each specific camper completed the data-gathering instrument. All counselors were University of Tennessee students taking the Camp Koinonia course offered through the Recreation and Tourism Management Program of the Department of Health, Leisure, and Safety Sciences. The criteria for camper selection for Camp Koinonia are described by Hayes, Brown, & Brown (1997): "Individuals attending camp should be:

1. Individuals who are classified as having more than one disability
2. Individuals who have had little or no opportunity to attend other organized camping programs
3. Individuals who do not present severe behavioral problems
4. Individuals who are able to appreciate, in some way, the difference between the institutional and camping environment
5. Individuals who are between the ages of 7-21 years old” (Hayes et al., 1997, p. 8).

The application packet for Camp Koinonia was completed and signed by the parent(s), which included an informed consent (Appendix B) statement allowing observation of their children for research purposes.

Study Variables.

Out of the 142 children with multiple disabilities who attended the 2009 Camp Koinonia, there were only 109 FACTR-R's that were returned to the researcher.

Data Analyses

Independent Variables.

The first research question in this study was: Is there a relationship between camper's demographics, age and gender, and camper's physical, cognitive, and social/emotional functioning as measured by the FACTR-R? The independent variables in the regression analysis for research question number one were age and gender. Age was a continuous variable in the data analyses. Gender was divided between male (n = 61) and female (n = 48), hence it was a dichotomous variable. These study variables were

chosen in order to report back to the camp if a specific age or gender has better outcomes while attending camp.

This study's second research question was: Is there a relationship between campers' types of disability, cognitive or physical, and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R? The independent variables in regression analyses for question number two were dichotomous variables, with 0 signifying a physical disability ($n = 59$), and 1 signifying a cognitive disability ($n = 50$).

The third research question in this study was: Is there a relationship between campers' primary diagnoses and campers' physical, cognitive, and social/emotional functioning outcomes as measured by the FACTR-R? The independent variables for regression analyses focusing on the third research question were three dummy variables representing the four most represented disabilities at the camp: autism spectrum disorders ($n = 18$), mental retardation ($n = 21$), cerebral palsy ($n = 17$), and down syndrome ($n = 21$). The reference category was mental retardation.

Dependent Variables.

The dependent variables for all research questions were based on the altered Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R). The three categories that the FACTR-R assesses are physical, cognitive, and emotional outcomes.

Scoring, analysis, and interpretation are an important part of the altered FACTR-R. There are no absolutes relative to therapeutic functioning and thus no definite way to determine if a given functional behavior will create problems in future therapeutic activities. The items of the instrument do, however, identify significant functional behaviors that are related to therapeutic participation. Thus, a high score (ranging from 28 - 91) in any or all of the three categories can be interpreted as a logical indication of need for clinical program intervention (Burlingame & Blaschko, 1997).

The functional behaviors and abilities selected for inclusion in the screening tool are those behaviors that are determined to be prerequisite or generally require within leisure participation. An overall low score of 27 indicates that the participant's functioning is at a normal level. High scores (28 - 91) on the three categories of functional skills indicate that clinical program intervention is needed or desirable. There are three areas that the FACTR-R assesses: physical, cognitive, and emotional outcomes. These will be described and elaborated on below. These three categories represent basic and commonly identified domains of ability, skills, and behavior, which cut across all illnesses and disabilities. The intent is to identify functional limitations that may interfere with or make difficult therapeutic goals of clients. Thus, these three categories become

target areas for treatment and clinical services since the therapeutic camp program is dependent on the camper's ability to participate and gain functional outcomes (Burlingame & Blaschko, 1997).

All areas of each section can be impacted by therapeutic activities. The physical outcomes section assesses six areas on physical behaviors and disabilities. The physical outcomes include: sight/vision, hearing, ambulation, bowel and bladder, use of upper extremities (arms, hands, shoulders) and torso. The cognitive outcomes assesses eight areas that are viewed as functional areas with relevance for leisure involvement, thus they are critical areas for possible program intervention. The cognitive outcomes are based on specific behaviors that can be used to diagnose a mental health condition. The cognitive outcomes include: reading ability, orientation, thinking, expressive language, long-term memory, short-term memory, immediate recall, and attending. The emotional outcomes assess 13 areas that address functional abilities in with social interactions and emotional expressions. They are dealt with in one major combined category since so much of emotional behavior is addressed in general way as opposed to a pathological or diagnostic manner. The emotional outcomes section focuses on general participation, dyad participation, small group participation, frustration, cooperation, stress and anxiety, conflict / argument, coping / adjustment, emotional expression, inappropriate emotional display, competition, authority, and general social ability (Burlingame & Blaschko, 1997).

Measurement

Peterson, Dunn, and Carruthers developed the Functional Assessment of Characteristics for Therapeutic Recreation (FACTR) in 1983. Idyll Arbor, Inc., updated the assessment and made it available to therapists in 1988. The Idyll Arbor, Inc. staff developed this current version of the documentation for the FACTR-R in 1990. According to Idyll Arbor, the FACTR-R was shown to be reliable (Peterson, Dunn, Carruthers, & Burlingame, 1997). However, the reliability score was unavailable. Therefore, this study assessed the measurement tools reliability to provide it for the field. The screening for areas of need is conducted through observation of the client. Considering the counselors who are completing the FACTR-R have spent a week with their campers, the evaluation should have been relatively easy to complete (Peterson et al., 1997).

Data Analysis

The first data analyses that were conducted were reliability and multiple groups confirmatory factor analysis of each of the subscales of the FACTR-R. The data analyses on the research questions were multivariate tests of statistical significance. Each of those results that were statistically significant a univariate regression test were run on each dependent variable. This study also did a correlational analysis because this type of analysis is important when evaluating diverse groups.

Research question number one: Is there a relationship between campers' age and gender and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

First, a power analysis was run for research question number one. This power analysis set critical alpha at .05, used a sample size of 109, and incorporated 2 predictors of age and gender. Will have power of about .80 to detect an overall R^2 for model of about .085.

Second, the first research question was tested using a multivariate regression model.

$$\begin{pmatrix} \text{PhysicalScore} \\ \text{CognitiveScore} \\ \text{EmotionalScore} \end{pmatrix} = B_0 + B_1 \text{age} + B_2 \text{gender}$$

If the data shows statistical significance than a univariate regression will be run on each of the dependent variables.

$$(\text{PhysicalScore}) = B_0 + B_1 \text{age} + B_2 \text{gender}$$

$$(\text{CognitiveScore}) = B_0 + B_1 \text{age} + B_2 \text{gender}$$

$$(\text{EmotionalScore}) = B_0 + B_1 \text{age} + B_2 \text{gender}$$

The demographic information was chosen based on the information that is included in the campers' application. Specifically, age and gender were the demographics chosen to represent this research question's independent variables. It is important to report back to the camp if there is a specific age or gender that has better physical, cognitive, and/or emotional outcomes.

Research question number two: Is there a relationship between campers' types of disability (e.g. cognitive or physical) and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

First, a power analysis was run for research question number two. This power analysis set Critical alpha at .05, used a sample size of 109, and incorporated 2 predictors of physical category and cognitive category. Will have power of about .80 to detect an overall R^2 for model of about .085.

Second, this research question will be tested using a multivariate regression model.

$$\begin{pmatrix} PhysicalScore \\ CognitiveScore \\ EmotionalScore \end{pmatrix} = B_0 + B_1 physical \quad (\text{Compared with cognitive})$$

If the data shows significance than a univariate regression will be run on each of the dependent variables.

$$(PhysicalScore) = B_0 + B_1 physical \quad (\text{Compared with cognitive})$$

$$(CognitiveScore) = B_0 + B_1 physical \quad (\text{Compared with cognitive})$$

$$(EmotionalScore) = B_0 + B_1 physical \quad (\text{Compared with cognitive})$$

All of the primary diagnoses that are represented at Camp Koinonia can be separated into dichotomous categories physical (n = 59) and cognitive disability (n = 50). The physical disabilities are disabilities that a medical doctor will diagnosis based on physical exams and medical tests that can be run on the child. The cognitive disabilities

are the remaining disabilities that may be diagnosed based on subjective tests that a psychologist, psychiatrist, social worker, or other mental health professional may diagnose.

Research question number three: Is there a relationship between campers' primary diagnoses and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

First, a power analysis was run for research question number three. This power analysis set Critical alpha at .05, used a sample size of 77, and incorporated 4 predictors of cerebral palsy, down syndrome, autism spectrum disorder, and mental retardation. Will have power of about .80 to detect an overall R^2 for model of about .14.

Second, the third research question will be tested using a multivariate regression model.

$$\begin{pmatrix} PhysicalScore \\ CognitiveScore \\ EmotionalScore \end{pmatrix} = B_0 + B_1cp + B_2ds + B_3asd \quad \text{Reference category was MR}$$

If the data shows significance than a univariate regression will be run on each of the dependent variables.

$$(PhysicalScore) = B_0 + B_1cp + B_2ds + B_3asd \quad (\text{Reference category was MR})$$

$$(CognitiveScore) = B_0 + B_1cp + B_2ds + B_3asd \quad (\text{Reference category was MR})$$

$$(EmotionalScore) = B_0 + B_1cp + B_2ds + B_3asd \quad (\text{Reference category was MR})$$

The four diagnoses included in the independent variables for research question number three were chosen based on the camper application that was completed by each

child's doctor and parent. The disabilities were chosen because over 50% of the diagnoses can be included in one of these four categories. Therefore, the independent variables for this research question were the four most frequent disabilities at camp: autism spectrum disorders (n = 18), mental retardation (n = 21), cerebral palsy (n = 17), and down syndrome (n = 21).

Summary

This study investigated the physical, cognitive, and emotional outcomes of youth who were diagnosed with multiple disabilities who attended a therapeutic camp. This study was a post-hoc post-test only evaluation on secondary data. This study investigated if the camper outcomes were similar by age, gender, a category of disability, and type of primary disability. This study was a secondary data analysis and therefore was not obtrusive to the participants because the data were collected at a normal part of the 2009 Camp Koinonia program. A convenience sample of individuals with multiple disabilities was assessed. Reliability analyses and multiple group confirmatory factory analyses were conducted on each subscale of the FACTR-R. The secondary data analysis also utilized multivariate regression and when significance was shown a univariate test was run.

Chapter 4

Results

The purpose of this study was to assess the functional outcomes of children with multiple disabilities who attended Camp Koinonia in 2009. The functional outcomes were measured using an altered version of the Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R) (Appendix A). The FACTR-R assesses physical, cognitive, and emotional outcomes of children with disabilities.

This chapter presents the results of the outcomes of Camp Koinonia in 2009. This chapter is divided into different sections presenting the outcomes of the different analyses conducted in the study, including reliability results for the scores from the Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R) (Appendix A), the multivariate regression tests of each of the research questions, and univariate regression results for dependent variables for which statistically significant results were found in the multivariate regression.

Sample Characteristics

In this study the first research question was: Is there a relationship between campers' demographics, age and gender, and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R? The independent variables in the regression analysis for this research question were age and gender. Age was a continuous variable and a frequency distribution of age can be seen in Table 1. Table 2 shows the breakdown of campers by gender. These independent variables were chosen in

order to report back to the camp staff and administrators if physical, emotional, and/or cognitive scores on the FACTR-R differed by age or gender at the end of the 2009 camp.

Table 1: Frequency Distribution of Age.

Age	Frequency	Valid Percent	Cumulative Percent
7	4	3.7	3.7
8	4	3.7	7.3
9	5	4.6	11.9
10	7	6.4	18.3
11	2	1.8	20.2
12	6	5.5	25.7
13	5	4.6	30.3
14	5	4.6	34.9
15	10	9.2	44.0
16	13	11.9	56.0
17	12	11.0	67.0
18	7	6.4	73.4
19	9	8.3	81.7
20	12	11.0	92.7
21	8	7.3	100.0
Total	109	100.0	

Table 2: Frequency Table for Gender.

Gender	Frequency	Valid Percent	Cumulative Percent
Female	48	44.0	44.0
Male	61	56.0	100.0
Total	109	100.0	

In this study the second research question was: Is there a relationship between campers' types of disability, cognitive or physical, and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R? The independent variables for this research question were the categories of primary disability that each camper had. The independent variable in the regression analyses for this research question were a dichotomous variable, with 1 signifying a physical disability ($n = 59$), and 0 signifying a cognitive disability ($n = 50$). Table 3 shows the frequency of primary disability for the subjects in this study.

Table 3: Frequencies of Physical and Cognitive Disabilities.

Category of Disability	Frequency	Valid Percent	Cumulative Percent
Cognitive	50	45.9	45.9
Physical	59	54.1	100.0
Total	109	100.0	

The third research question in this study was: Is there a relationship between campers' primary diagnoses and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R? Table 4 shows the frequencies of the four primary diagnoses of youths who attended the camp: cerebral palsy (CP; n = 17), down syndrome (DS; n = 21), autism spectrum disorders (ASD; n = 18), and mental retardation (MR; n = 22). Dummy coding was used in the regression analyses for this research question and the reference category was the diagnosis of mental retardation.

Table 4: Demographics for Type of Disability.

Diagnosis	Frequency	Valid Percent	Cumulative Percent
CP	17	21.8	21.8
DS	21	26.9	48.7
ASD	18	23.1	71.8
MR	22	28.2	100.0
Total	78	100.0	
Missing (0)	31		
Total	109		

Reliability

Reliability analyses and multiple groups confirmatory factor analyses were conducted for each of the subscales of the FACTR-R and selected results of these analyses are shown in Tables 5 - 15. The reliability and corrected item total correlations were calculated for each subscale. In order to assess the factorial validity of the FACTR-R a multiple groups confirmatory factory analysis was conducted to evaluate if the items comprising a particular subscale correlated to a greater degree with that subscale's total score than with any other subscale total score (Hudson, 1982).

Table 5 shows corrected item total score correlations for scores on the physical outcomes subscale of the altered FACTR-R. The corrected item total score correlations for the vision (0.18) and the hearing (0.06) items were quite low. The overall coefficient alpha estimates for the reliability of the scores from this subscale were about 0.72.

Table 5: Physical Outcomes Subscale Corrected Item Total Correlations.

Physical Subscale Scores	Corrected Item Total Correlation
Vision	0.18
Hearing	0.06
Ambulation	0.76
Bladder	0.51
Upper Extremities	0.65
Torso	0.72

A multiple groups confirmatory factor analysis of the scores from the physical subscale was conducted. As can be seen in Table 6, the cognitive subscale items on reading and immediate recall had corrected item-total correlations with the physical subscale total scores that were of comparable magnitude to the smaller corrected item-total score correlations for the physical subscale items seen in Table 5; these two correlations were, however, much smaller than the remaining corrected item-total correlations in Table 5. The corrected item-total score correlations between items on the emotional subscale and the total scores on the physical subscale can be seen in Table 7. As can be seen in this table, the corrected item-total correlations for the emotional subscale items on participation (0.27) and dyad participation (0.22) had corrected item-total correlations of comparable magnitude to the lower correlations in Table 5 for the physical subscale items. In contrast, the remaining correlations in Table 7 were lower than those seen in Table 5. In particular, the correlations in Table 7 for the emotional subscale items on frustration (-0.09), expression (-0.01), cooperation (-0.06), stress (-0.03), and social (-0.04) were all negative.

Table 6: Multiple Groups Confirmatory Factor Analysis of Physical Subscale Items.
Each Corrected Item-Total Correlation is Between the Identified Cognitive Subscale
Item Scores and the Total Scores on the Physical Subscale.

Cognitive Subscale Scores	Corrected Item Total Correlation
Reading	0.20
Orientation	0.04
Thinking	0.01
Language	0.11
Long term Memory	0.16
Short term Memory	0.09
Immediate Recall	0.23
Attending	0.16

Table 7: Multiple Groups Confirmatory Factor Analysis of Physical Subscale. All Corrected Item-Total Correlations in this Table are Between Emotional Subscale Items and Total Scores on the Physical Subscale.

Emotional Subscale Scores	Corrected Item Total Correlation
General Participation	0.27
Dyad	0.22
Small Group	0.16
Frustration	-0.09
Argument	0.05
Adjustment	0.10
Expression	-0.01
Inappropriate Emotions	0.03
Competition	0.09
Cooperation	-0.06
Stress	-0.03
Authority	0.15
Social	-0.04

The cognitive subscale corrected item-total score correlations for the altered FACTR-R are shown in Table 8. The overall Cronbach's alpha estimate for the reliability of the scores on the Cognitive Subscale was .80.

Table 8: Cognitive Outcomes Corrected Item-Total Correlations.

Cognitive Subscale Scores	Corrected Item Total Correlation
Reading	0.48
Orientation	0.59
Thinking	0.50
Language	0.46
Long-term Memory	0.55
Short-term Memory	0.48
Immediate Recall	0.48
Attending	0.54

A multiple groups confirmatory factor analysis for the items on the cognitive subscales was conducted. Table 9 shows the corrected item-total correlations between Physical Subscale items and the total scores on the cognitive subscale. All of these correlations were less than those seen in Table 8.

Table 9: Multiple Groups Confirmatory Factor Analysis of Cognitive Subscale.
Each Correlation is that Between the Physical Subscale Items and the Total Scores on the Cognitive Subscale.

Physical Subscale Scores	Corrected Item Total Correlation
Vision	-0.11
Hearing	-0.01
Ambulation	0.09
Bladder	0.27
Upper Extremities	0.24
Torso	0.13

Table 10 shows the results from the multiple groups confirmatory factor analysis of cognitive subscale scores. As can be seen in this table, all correlations between total scores on the cognitive subscale and the emotional subscale items were lower than those in Table 8 except for that on dyad participation (.61) and that on adjustment (.52).

Table 10: Multiple Groups Confirmatory Factor Analysis of Cognitive Subscale Items. Each Correlation is that Between the Emotional Subscale Item and the Total Scores on the Cognitive Subscale.

Emotional Subscale Scores	Corrected Item Total Correlation
General Participation	0.47
Dyad	0.61
Small Group	0.43
Frustration	0.31
Argument	0.38
Adjustment	0.52
Expression	0.08
Inappropriate Emotions	0.29
Competition	0.35
Cooperation	0.42
Stress	0.19
Authority	0.37
Social	0.18

Table 11 shows the corrected item total score correlations for the scores from the emotional outcomes subscale of the altered FACTR-R. The corrected item total statistics for the emotional outcomes subscale are shown in Table 11. The corrected item total correlation for the item concerning expression was .073, suggesting there may be problems with this item. This item should be investigated for problems and considered to be a potentially problematic item. The coefficient alpha reliability estimate for the total scores on the emotional outcomes subscale was .83.

Table 11: Emotional Outcomes Corrected Item Total Correlations.

Emotional Subscale Scores	Corrected Item Total Correlation
General Participation	0.59
Dyad	0.64
Small Group	0.57
Frustration	0.43
Argument	0.57
Adjustment	0.64
Expression	0.07
Inappropriate Emotions	0.44
Competition	0.43
Cooperation	0.53
Stress	0.33
Authority	0.46
Social	0.51

The results of the multiple groups confirmatory factor analysis of the scores on the emotional subscale are shown in Table 12. Each correlation in this Table, between total scores on the Emotional Subscale and the items on the Physical Subscale, are lower than those in Table 11 save for that for the expression item.

Table 12: Multiple Groups Confirmatory Factor Analysis of Scores on Emotional Subscale. Each Correlation is Between the Total Scores on the Emotional Subscale and the Items on the Physical Subscale.

Physical Subscale Scores	Corrected Item Total Correlation
Vision	-0.15
Hearing	0.05
Ambulation	0.05
Bladder	0.16
Upper Extremities	0.22
Torso	0.08

Table 13 shows the corrected item-total correlations between total scores on the emotional subscale and each item on the cognitive subscale. All of the correlations in this table were essentially consistent with those in Table 11. These findings suggested that the cognitive and emotional subscales may measure the same construct and that these two subscales might be merged into a single subscale.

Table 13: Multiple Groups Confirmatory Factor Analysis of Scores on Emotional Subscale. Each Correlation is Between Scores on Cognitive Subscale Items and Total Scores on the Emotional Subscale.

Cognitive Subscale Scores	Corrected Item Total Correlation
Reading	0.37
Orientation	0.52
Thinking	0.31
Language	0.43
Long-term Memory	0.26
Short-term Memory	0.34
Immediate Recall	0.48
Attending	0.51

After reviewing the results of the multiple groups confirmatory factor analysis, it was hypothesized that a combined cognitive and emotional subscale might be useful for the FACTR-R. Therefore, a reliability analysis was conducted on a possible combined cognitive and emotional subscale containing 21 questions, the results of which can be seen in Table 14. Overall the coefficient alpha estimate of the reliability of the scores from this combined subscale was .88, a value greater than the estimated reliability coefficients for either the cognitive subscale or the emotional subscale. The only item on this combined subscale that the results in Table 14 suggested as problematic was the expression item.

Table 14: Reliability Results for Possible Cognitive / Emotional Subscale. This**Table Shows Corrected Item Total Statistics.**

Emotional Subscale Scores	Corrected Item Total Correlation
Reading	0.45
Orientation	0.60
Thinking	0.41
Language	0.48
Long term Memory	0.39
Short term Memory	0.42
Immediate Recall	0.53
Attending	0.57
General Participation	0.60
Dyad	0.70
Small Group	0.57
Frustration	0.42
Argument	0.55
Adjustment	0.66
Expression	0.08
Inappropriate Emotions	0.42
Competition	0.44
Cooperation	0.54
Stress	0.31
Authority	0.47
Social	0.42

A multiple groups confirmatory factory analysis was conducted on the data from the proposed cognitive/emotional subscale, with the results shown in Table 15. The results suggested that the proposed combined subscale and the physical subscale measure different constructs.

Table 15: Multiple Group Confirmatory Factor Analysis of Possible Cognitive / Emotional Subscale. Each Correlation is Between the Total Scores on the Proposed Combined Subscale and the Items on the Physical Subscale.

Physical Subscale Scores	Corrected Item Total Correlation
Vision	-0.15
Hearing	0.03
Ambulation	0.07
Bladder	0.22
Upper Extremities	0.25
Torso	0.11

Summary of Reliability Analyses Results

These analyses showed that the overall coefficient alpha estimate of the reliability of the scores on the physical subscale on the FACTR-R was .71. Results also suggested that the item regarding hearing on the physical subscale should be examined for possible problems.

The Cronbach's alpha estimate of the reliability of the scores on the cognitive subscale was .80. The coefficient alpha estimate of the reliability of the scores on the emotional subscale was .83.

The results of the multiple groups confirmatory factor analysis suggested that it might be beneficial to combine the cognitive and emotional subscales. These results also showed that the hearing item on the physical subscale and the expression item on the emotional subscale may be problematic and need to be investigated for problems such as confusing wording, etc. These results suggest possible changes to these items, or their removal from the measure. These results, however, should be taken as tentative, however, given the small sample size in this program evaluation.

Research question number one

The first research question was: Is there a relationship between campers' ages and gender, and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

A multivariate regression of the three dependent variables of physical, cognitive, and emotional functioning on the independent variables of age (continuous variable) and gender (dichotomous variable) was conducted. The overall multivariate test was statistically non-significant, Wilk's Lambda = .945, $F(3,105) = 2.039$, $p > .05$. Table 16 shows results from this multivariate regression for each of the dependent variables. These results were inconsistent with a relationship between age and gender and the set of three dependent variables. Table 17 shows the simple correlations between age and gender and the scores from the three functional outcomes subscales. As can be seen in this table, none of these correlations reached statistical significance at the .05 level.

In order to report back to the camp regarding age and gender and their possible impact on campers' physical, cognitive, and emotional outcomes, simple correlations were computed between age and gender and the three dependent variables. The results showed that neither age nor gender correlated to a statistically significant degree with physical, cognitive, or emotional outcomes.

Table 16: Univariate Results from Multivariate Regression Analysis for Research**Question One.**

Independent Variable	Dependent Variable	Sum of Squares	df	Mean Square	F	P
Age	Physical	172.211	14	12.301	.779	> .05
	Cognitive	128.937	14	9.210	.802	> .05
	Emotional	499.295	14	35.664	1.046	> .05
Gender	Physical	4.938	1	4.938	.313	> .05
	Cognitive	33.462	1	33.462	2.912	> .05
	Emotional	2.189	1	2.189	.064	> .05

Table 17: Simple Correlations Between Age, Gender, and Physical, Emotional, and**Cognitive Outcomes.**

		Physical	Cognitive	Emotional
Age	Pearson Correlation	.128	.059	-.129
	p	> .05	> .05	> .05
	N	109	109	109
Gender	Pearson Correlation	-.101	.184	.081
	p	> .05	> .05	> .05
	N	109	109	109

Research question number two

The second research question was: Is there a relationship between campers' types of disability (e.g. cognitive or physical) and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

A multivariate regression was conducted to test for a relationship between category of disability (physical and cognitive) and the three dependent variables of physical, cognitive, and emotional functioning. The results of the overall multivariate test of this relationship were statistically significant, Wilk's lambda = .03, $F(6, 210) = 171.07$, $p < .05$. The results of the multivariate regression for each of the dependent variables can be seen in Table 18. The multivariate regression results suggested a relationship between type of disability and FACTR-R scores.

Therefore, univariate regressions were conducted for each of the three dependent variables. The results of these univariate regressions can be seen in Table 19. The R-squared values for these results were, for the physical outcome dependent variable, $R^2 = .14$; for the cognitive outcome dependent variable, $R^2 = .006$; and for the emotional outcome dependent variable, $R^2 = .004$.

Table 18: Multivariate Regression Analysis Results for Category of Disability.

Independent Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p
Category	Physical	9460.58	2	4730.29	354.83	< .001
	Cognitive	24712.83	2	12356.42	1073.02	> .05
	Emotional	81267.57	2	40633.78	1181.98	> .05

Table 19: Overall Univariate Regression on Category of Disability and Physical, Cognitive, and Emotional Outcomes.

Dependent Variable	Category	p
Physical	Cognitive	> .05
	Physical	< .001
Cognitive	Cognitive	> .05
	Physical	> .05
Emotional	Cognitive	> .05
	Physical	> .05

A univariate regression analysis was conducted on category of disability and physical outcomes (Table 19A). The results suggested that category of disability was related to physical outcomes. The results also suggested that FACTR-R physical subscale scores were about 3 scale units higher for campers with physical disabilities as compared with those with cognitive disabilities. The results showed that the FACTR-R physical outcomes subscale scores were associated with category of disability (specifically with physical disabilities), results consistent with the hypothesis that the physical outcomes subscale scores measure physical outcomes.

Tests of the assumptions of the ordinary least squares regression of FACTR-R physical subscale scores on category of disability were assessed by analyzing a histogram (Figure 1), P-P plot (Figure 2), and scatterplot (Figure 3). Figure 1 is a histogram of residuals from the regression of category of disability on physical outcomes scores. The histogram of the residuals did not reveal any reason to believe that there was a significant departure from normality in the distribution of residuals. The P-P plot of residuals (Figure 2) was also consistent with the hypothesis that there was no serious departure from normality in the distribution of residuals.

An examination of the scatter plot (Figure 3) of the standardized residuals versus standardized predicted values suggested the possibility of heteroscedasticity in the residuals. This was confirmed by a Levene's F-test, $F(1,107) = 39.6$, $p < .001$. Due to the possible heteroscedasticity, a t-test was conducted comparing the mean physical outcomes scores for the two categories of disability. The results of a t-test that does not assume homogeneity of variance were statistically significant, $t(83.6) = 4.4$, $p < .001$.

These results confirmed the results of the regression of physical outcomes subscales scores on category of disability.

Table 19A: Univariate Regression of Category of Disability on Physical Outcomes.

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	7.62	.52		14.76	< .001
	Category	2.92	.70	.37	4.16	< .001

Figure 1: Histogram of Residuals.

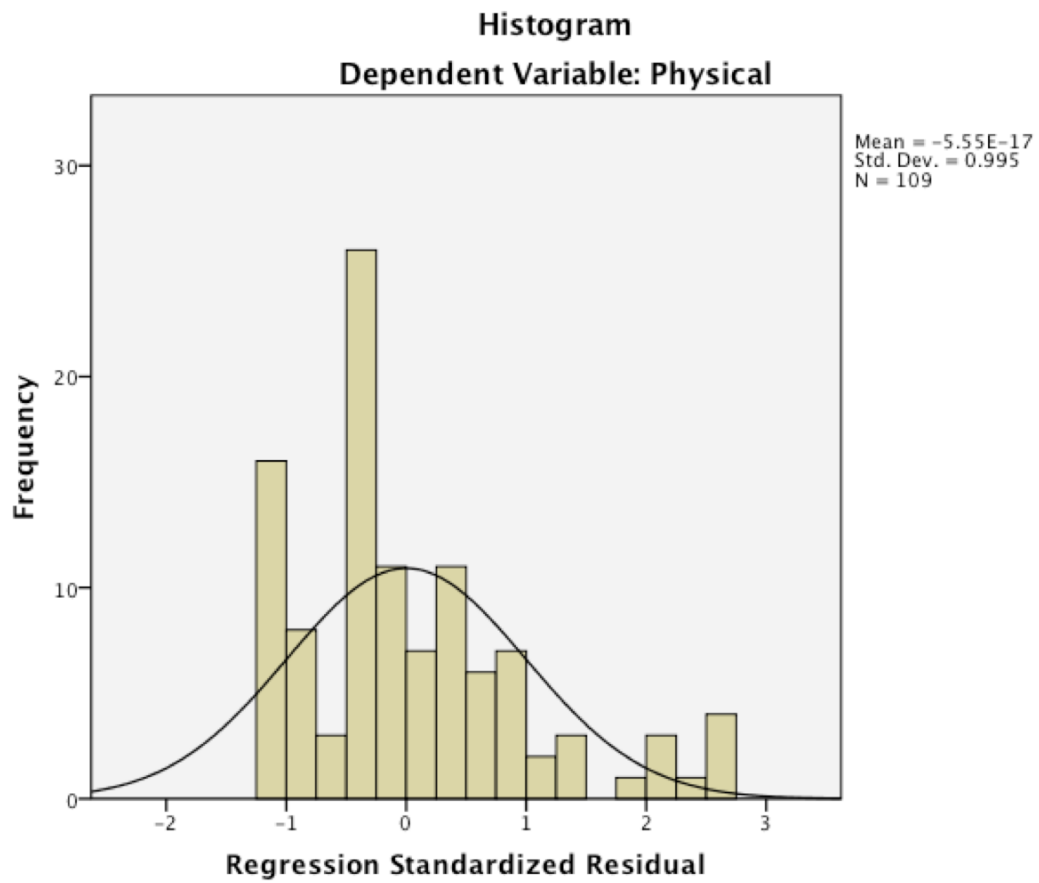


Figure 2: Normal P-P Plot of Residuals.

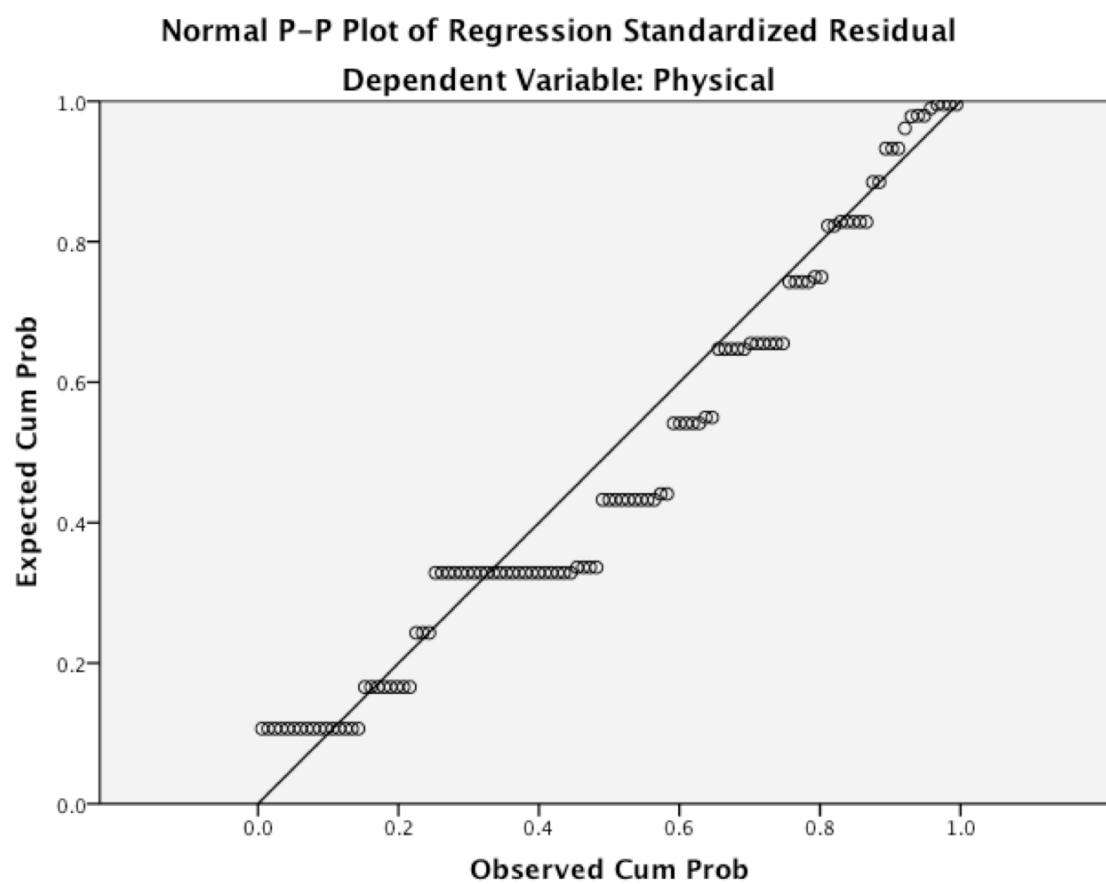
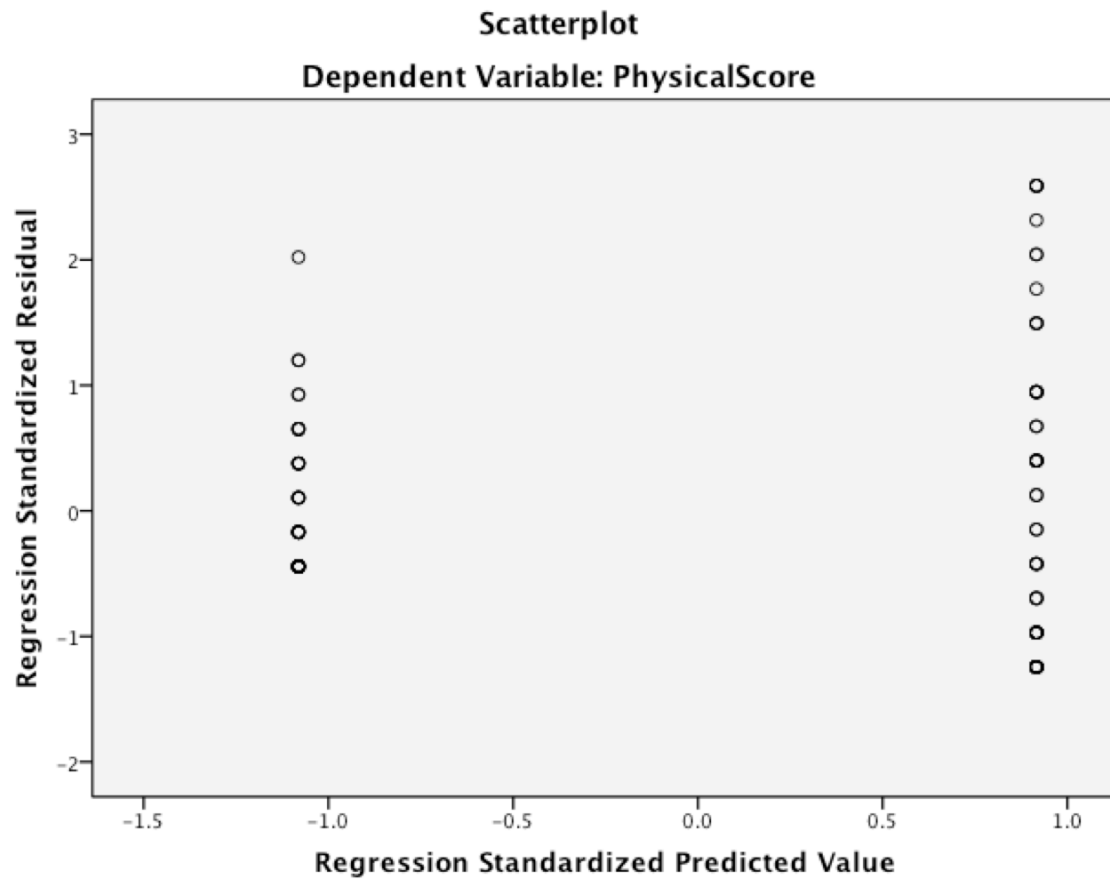


Figure 3: Scatterplot of Residuals.



A univariate regression analysis was conducted on category of disability and cognitive outcomes (Table 19B). It was expected that cognitive disabilities would be associated with cognitive outcomes. Considering that the results were not statistically significant, it raises questions about the validity of this subscale.

The tests of assumptions of the ordinary least squares regression of FACTR-R cognitive subscale scores on category of disability were assessed by analyzing a histogram (Figure 4), P-P plot (Figure 5), and scatterplot (Figure 6). Figure 4 is a histogram of residuals. An examination of the histogram of the residuals did not reveal any reason to believe that the residuals were not distributed normally. The P-P plot (Figure 5) suggested no serious departures from normality of the residuals. Also, an examination of the scatterplot (Figure 6) of the standardized residuals and predicted values of category of disability and cognitive outcomes did not reveal any reason to believe that the assumptions of homogeneity of variance or linearity were violated.

Table 19B: Univariate Regression of Category of Disability on Cognitive Outcomes.

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	15.34	.48		31.96	< .001
	Category	-.53	.65	-.08	-.81	> .05

Figure 4: Histogram of Residuals.

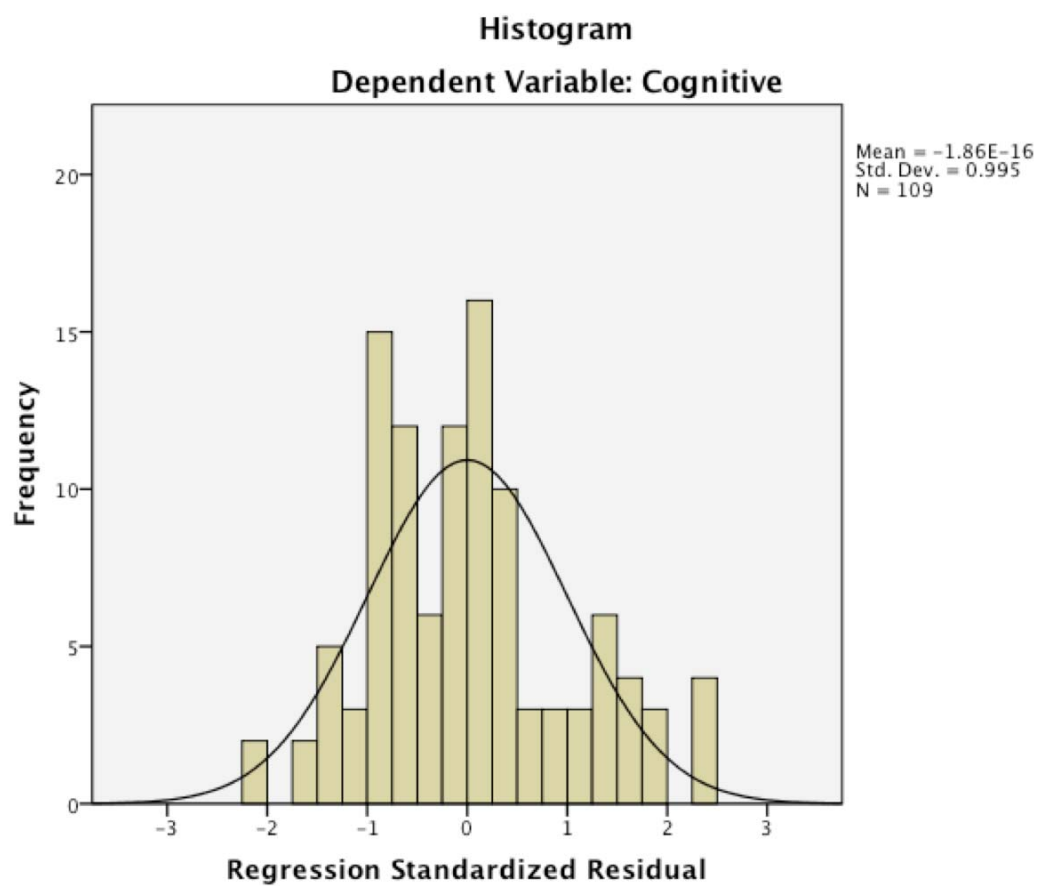


Figure 5: Normal P-P Plot of Residuals.

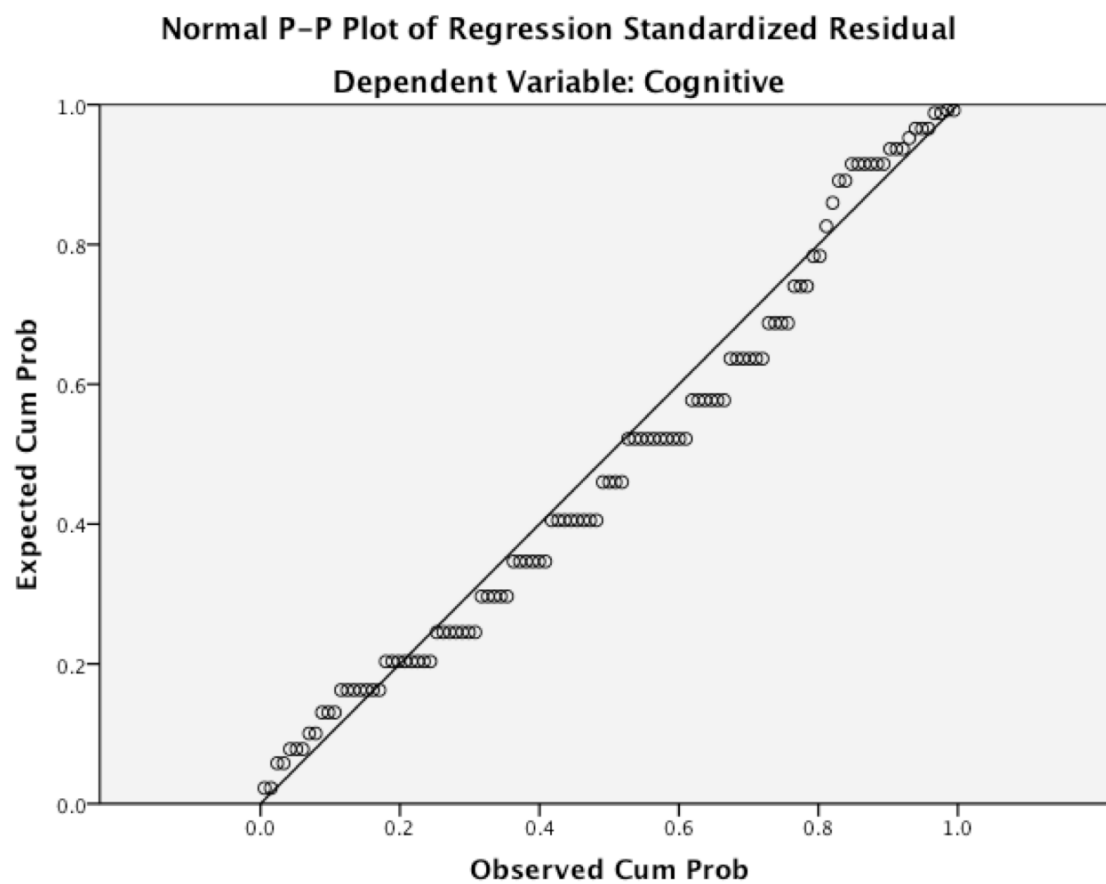
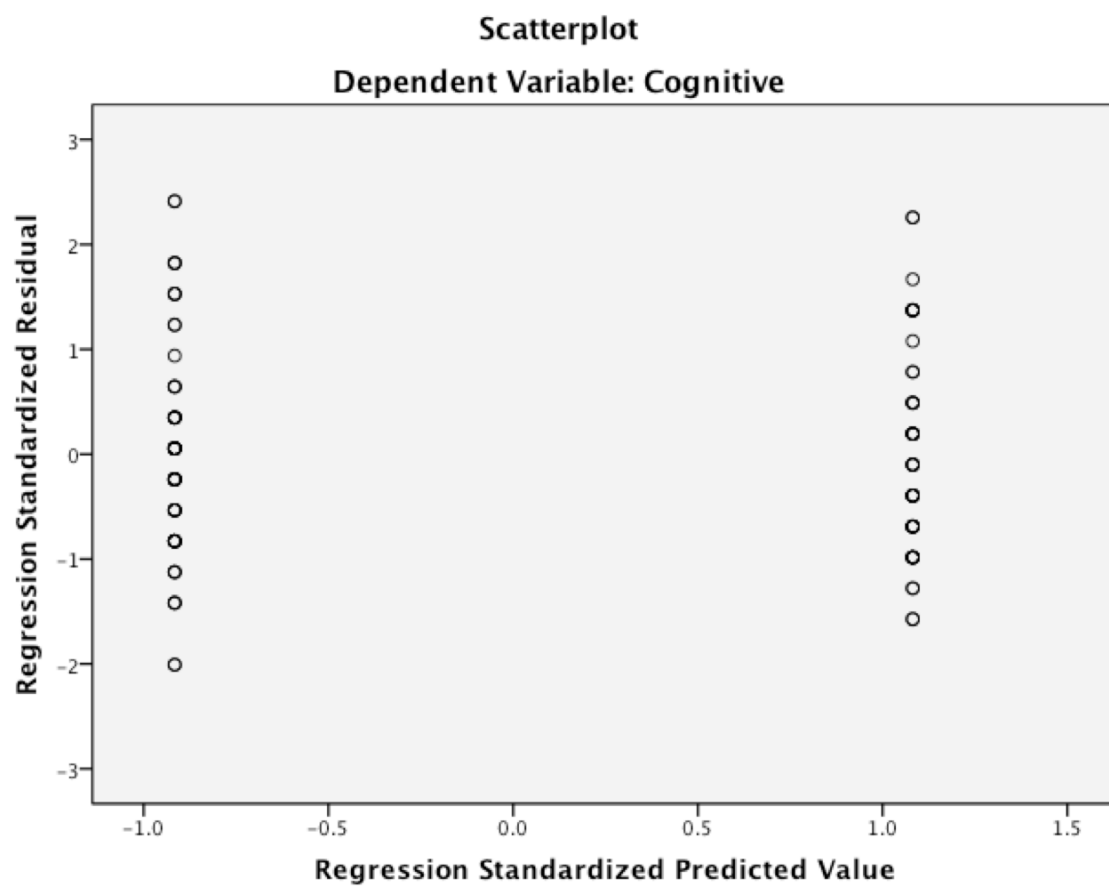


Figure 6: Scatterplot of Residuals.



The results of the regression of emotional outcomes on category of disability can be seen in Table 19C. The tests of assumptions of ordinary least squares regression of FACTR-R emotional subscale scores on category of disability were assessed by analyzing a histogram (Figure 7), P-P plot (Figure 8), and scatterplot (Figure 9).

Figure 7 is a histogram of residuals. An examination of the histogram of the residuals did not reveal any reason to believe that the residuals were not distributed normally. The P-P plot (Figure 6) suggested that there were no serious departures from normality. Also, an examination of the scatterplot (Figure 7) of the standardized residuals versus predicted values did not reveal any reason to believe that the assumptions of homogeneity of variance or linearity were violated.

Table 19C: Univariate Regression of Category of Disability on Emotional Outcomes.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	27.70	.83		33.41	< .001
	Category	-.73	1.13	-.06	-.65	> .05

Figure 7: Histogram of Residuals.

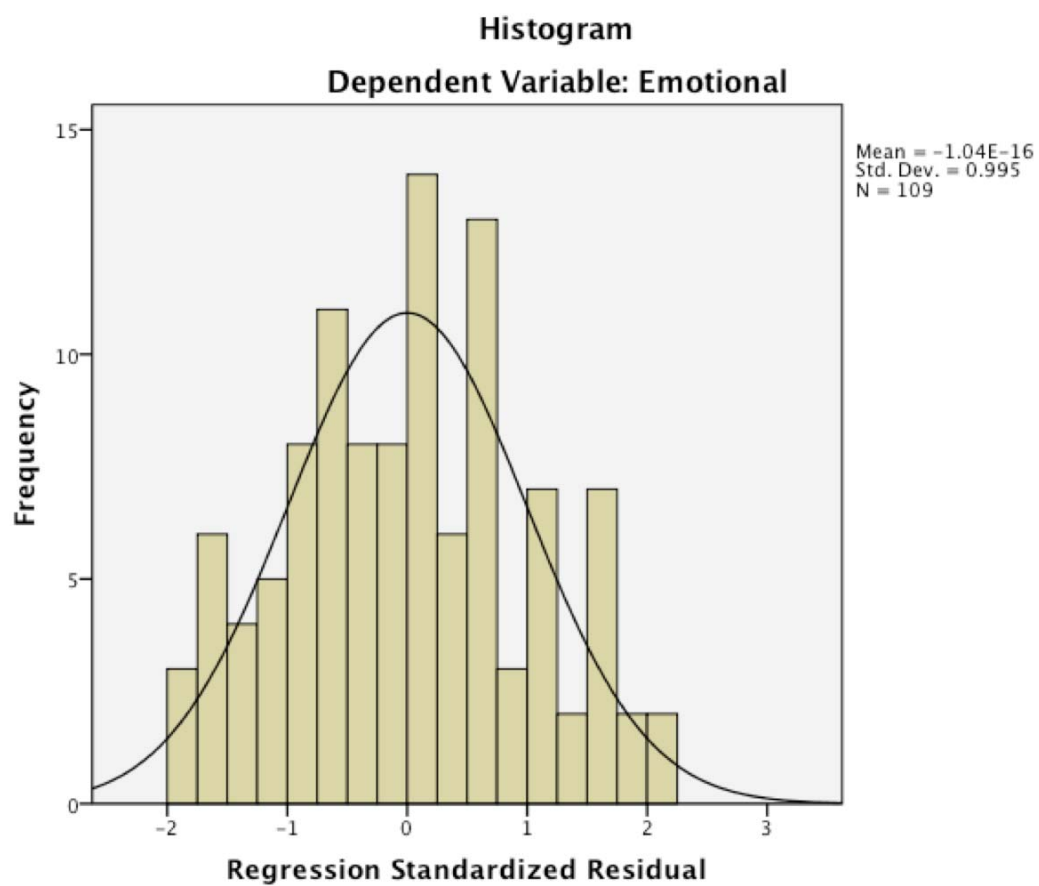


Figure 8: Normal P-P Plot of Residuals.

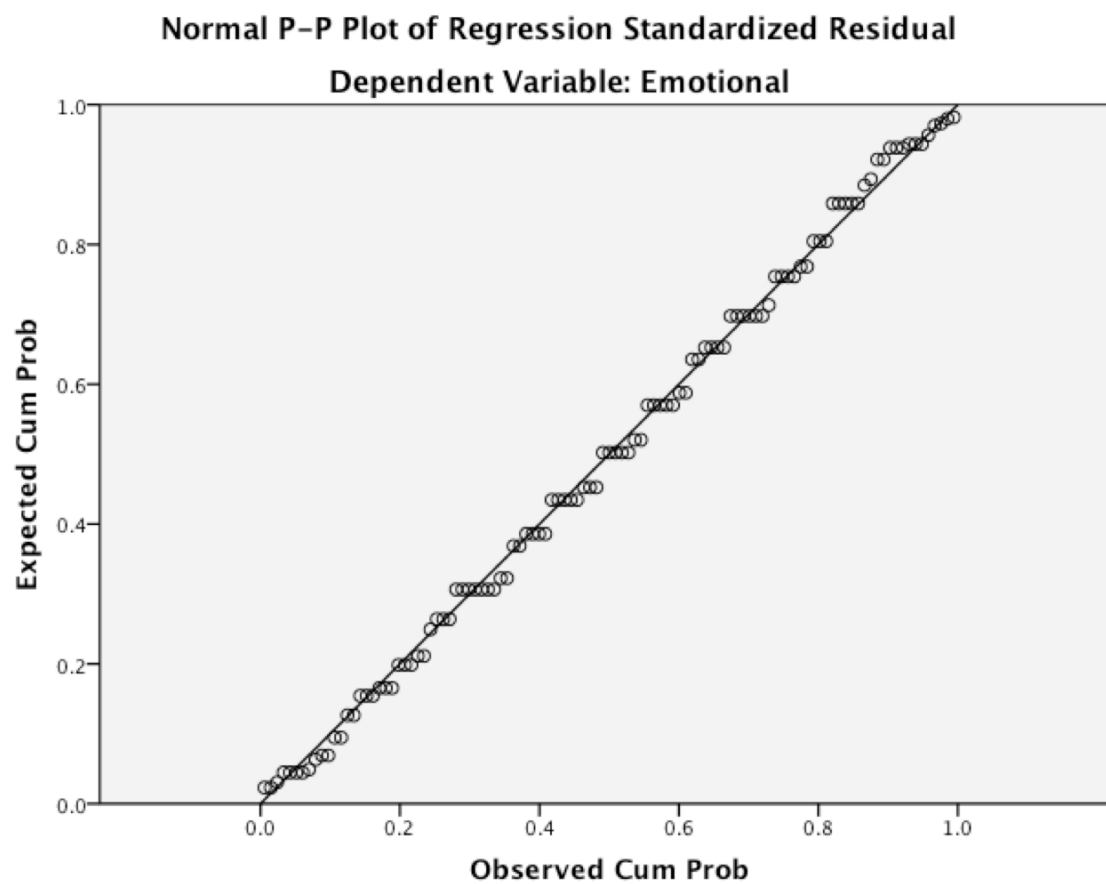


Figure 9: Scatterplot of Residuals.

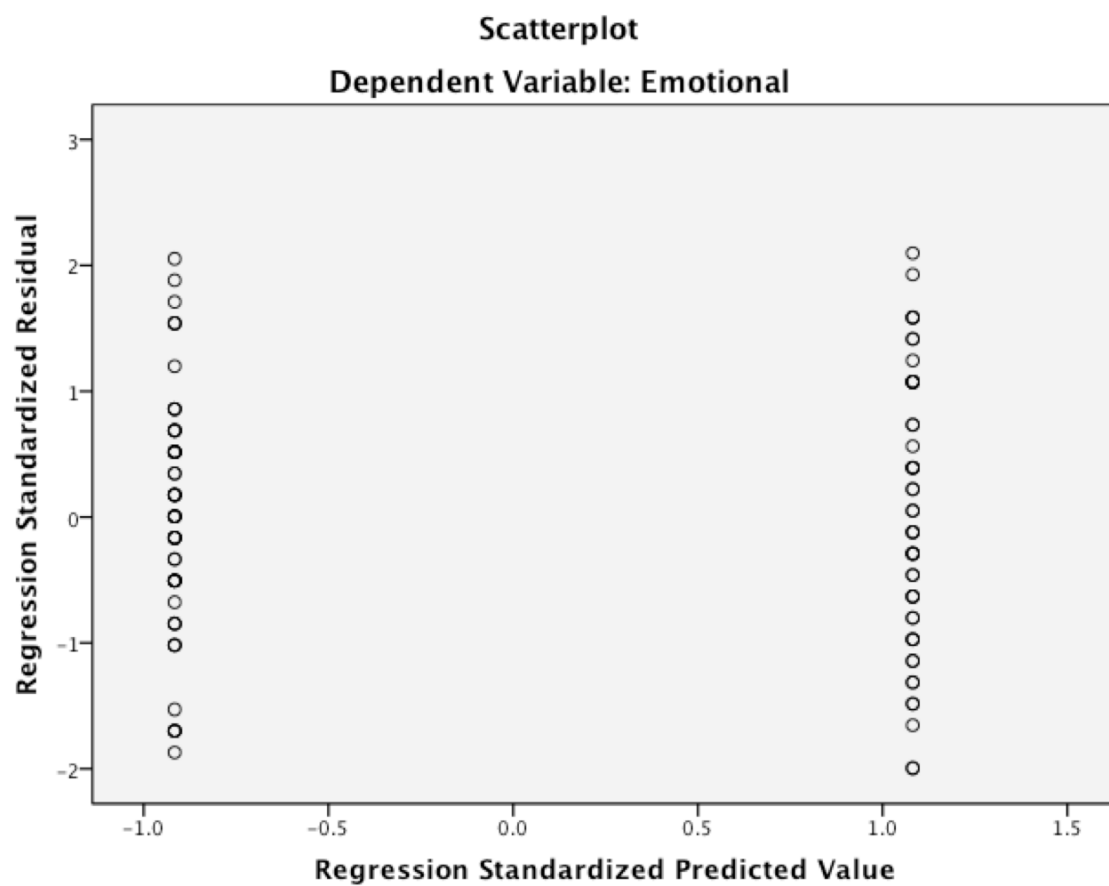


Table 20 shows the simple correlations between the disabilities categories and the functional outcomes. The correlation between physical disabilities and physical outcomes was the only statistically significant relationship in this table.

Table 20: Overall Correlations on Category of Disability and Physical, Cognitive, and Emotional Outcomes.

		Physical	Cognitive	Emotional
Category	Pearson Correlation	.37	-.08	-.06
	P	< .001	> .05	> .05
	N	109	109	109

In summary, the results of the multivariate regression of the three dependent variables on the dichotomous independent variable of category of disability (physical and cognitive) were statistically significant. Therefore, univariate regressions were run for dependent variable. The results showed that there was a statistically significant relationship between category of disability and physical outcomes scores.

The results of a correlational analysis showed that category of disability were statistically significantly related with physical outcomes. Children with physical disabilities had a higher mean score on the physical outcomes subscale than did children with cognitive disabilities.

Research question number three

Research question number three was: Is there a relationship between campers' primary diagnoses and campers' physical, cognitive, and social/emotional functioning as measured by the FACTR-R?

Table 21 shows the results of the multivariate regression test of the relationships between the specific types of disabilities and the physical, cognitive, and emotional outcomes.

The results of the multivariate regression showed that when compared to mental retardation, cerebral palsy [Wilk's lambda = 0.65, $F(3, 103) = 18.20$, $p < .001$] and autism spectrum disorders [Wilk's lambda = 0.88, $F(3, 103) = 4.85$, $p < .05$] were related with outcomes to a statistically significant degree, while the relationship between down syndrome and outcomes was not statistically significant [Wilk's lambda = 0.94, $F(3, 103) = 2.08$, $p > .05$].

The results of the subsequent univariate analyses can be found in Table 22. The coefficients for type of disability and physical, cognitive, and emotional outcomes can be found in Tables 22A, 22B, and 22C, respectively. The R-squared values for these regression results were $R^2 = .43$ for physical outcomes; $R^2 = .06$ for cognitive outcomes; and $R^2 = .09$ for emotional outcomes.

The results shown in Table 21 show that cerebral palsy had a statistically significant relationship with physical outcomes. There was also a statistically significant relationship between autism spectrum disorders and emotional outcomes.

Table 21: Multivariate Regression Analysis on Type of Disability.

Independent Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p
CP	Physical	491.16	1	491.16	54.80	< .001
	Cognitive	8.70	1	8.70	0.79	> .05
	Emotional	68.83	1	68.83	2.16	> .05
DS	Physical	35.84	1	35.84	4.00	< .05
	Cognitive	22.88	1	22.88	2.06	> .05
	Emotional	0.24	1	0.24	0.01	> .05
ASD	Physical	30.76	1	30.76	3.43	> .05
	Cognitive	25.65	1	25.65	2.31	> .05
	Emotional	295.15	1	295.15	9.28	< .05

Table 22: Overall Univariate Regression on Type of Disability and Physical, Cognitive, and Emotional Outcomes.

Dependent Variable	Category	p
Physical	Cerebral Palsy	< .001
	Down Syndrome	< .05
	Autism Spectrum Disorder	> .05
	Mental Retardation	> .05
Cognitive	Cerebral Palsy	> .05
	Down Syndrome	> .05
	Autism Spectrum Disorder	> .05
	Mental Retardation	> .05
Emotional	Cerebral Palsy	> .05
	Down Syndrome	> .05
	Autism Spectrum Disorder	< .05
	Mental Retardation	> .05

Table 22A shows the results of the univariate regression of physical outcomes on type of disability. The results in this table show that there was a statistically significant relationship between type of disability and physical outcomes. The results in table 22A show that mean score on the physical outcomes subscale for children with cerebral palsy (mean = 14.98) was 6.2 units higher than the mean score for children with mental retardation (mean = 8.78). The results in this table also show that the mean physical outcomes subscale score for children with down syndrome (mean = 7.28) was 1.5 units lower than the mean score for children with mental retardation (mean = 8.78), a statistically significant difference.

The histogram of residuals (Figure 10), P-P plot of residuals (Figure 11), and the scatterplot of residuals (Figure 12) were used to assess the assumptions of the ordinary least squares regression of physical outcomes scores on the type of disability. An examination of the histogram (Figure 10) of the residuals did not reveal any reason to believe that the residuals were not distributed normally. The P-P plot of residuals (Figure 11) suggested there were no serious departures from normality of the residuals. Also, an examination of the scatter plot of residuals (Figure 12) did not reveal any reason to believe that the assumptions of homogeneity of variance or linearity were violated.

Table 22A: Univariate Regression of Physical Outcomes on Type of Disability.

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	8.78	0.41		21.55	< .001
	CP	6.16	0.83	0.57	7.40	< .001
	DS	-1.54	0.77	-0.16	-2.00	< .05
	ASD	-1.54	0.83	-0.14	-1.85	> .05

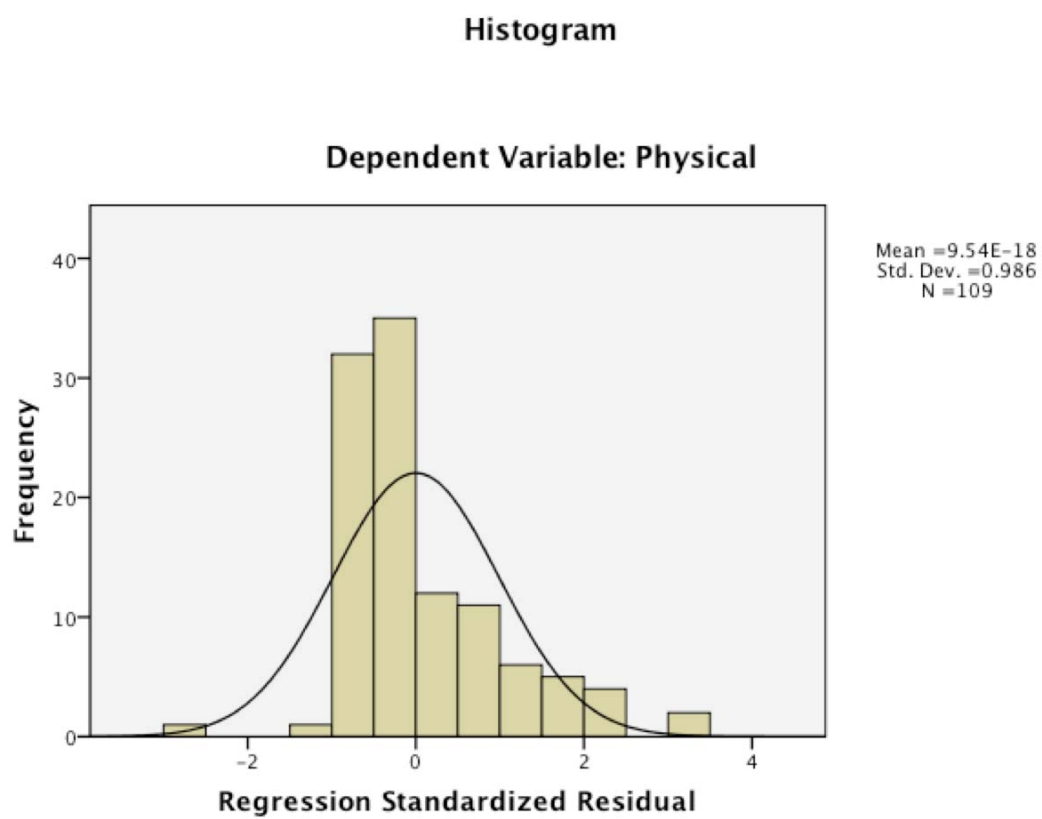
Figure 10: Histogram of Residuals.

Figure 11: Normal P-P Plot of Residuals.

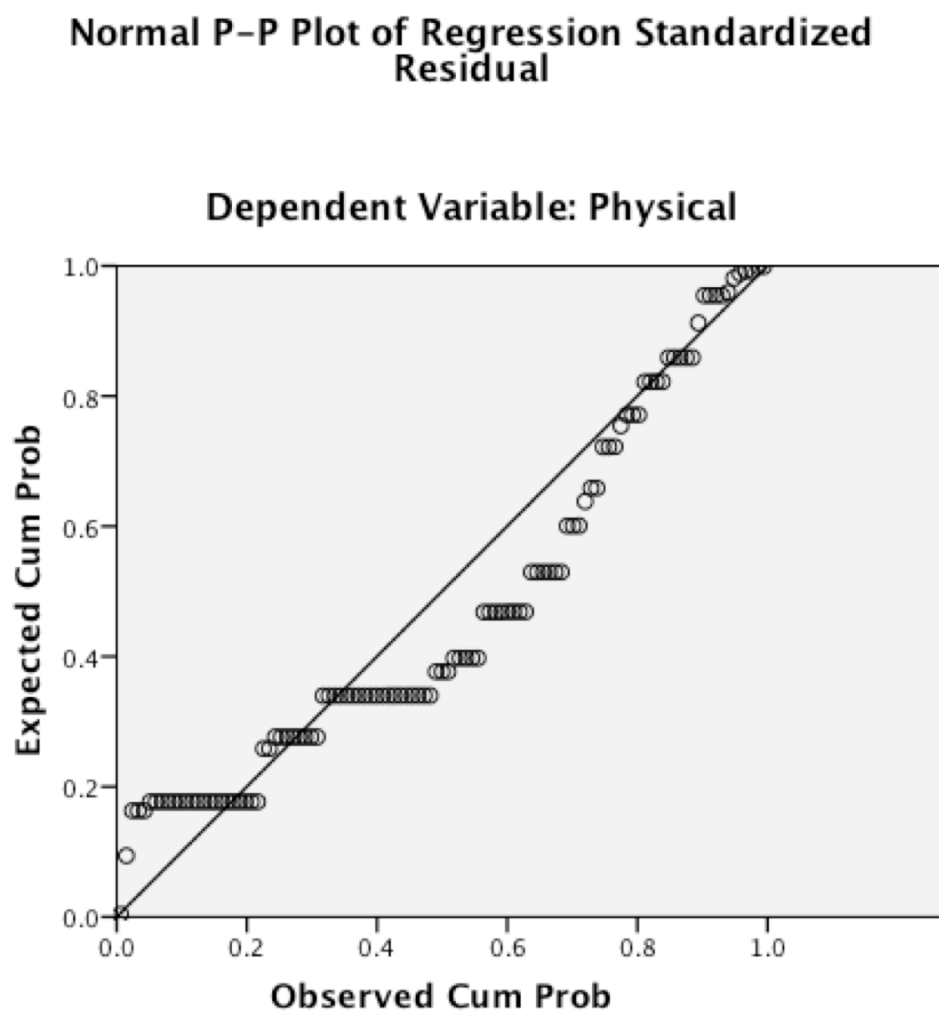
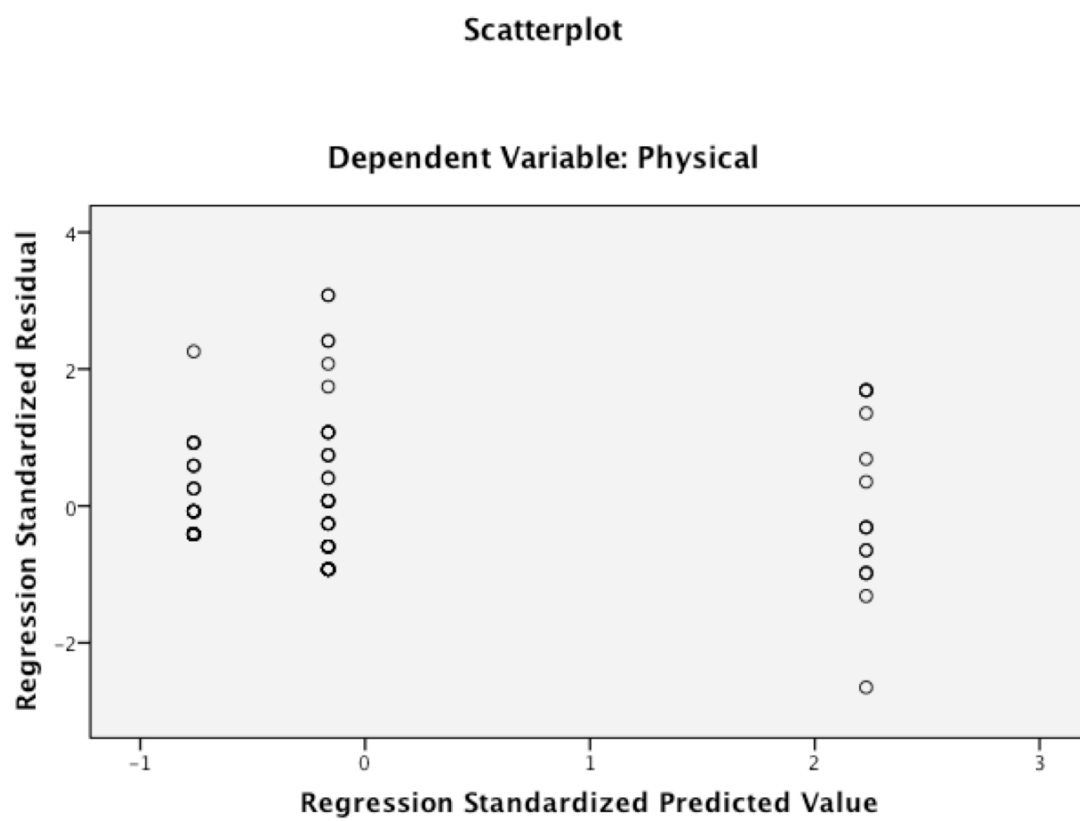


Figure 12: Scatterplot of Residuals.



The results of a univariate regression of cognitive outcomes on type of disability are shown in Table 22B. This table shows that type of disability did not have a statistically significant effect on cognitive outcomes. The tests of the assumptions of the ordinary least squares regression were evaluated by a histogram (Figure 13), P-P plot (Figure 14), and scatterplot (Figure 15). An examination of the histogram (Figure 13) of the residuals did not reveal any reason to believe that the residuals were not distributed normally. The P-P plot of residuals (Figure 14) suggested no serious departures from normality. Also, an examination of the scatterplot (Figure 15) of the standardized residuals versus predicted values did not reveal any reason to believe that the assumptions of homogeneity of variance or linearity were violated.

Table 22B: Univariate Regression of Cognitive Outcomes on Type of Disability.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	p
1	(Constant)	14.94	.45		32.98	< .001
	CP	.82	.93	.09	.89	> ,05
	DS	-1.23	.86	-.14	-1.44	> ,05
	ASD	1.41	.93	.15	1.52	> ,05

Figure 13: Histogram of Residuals.

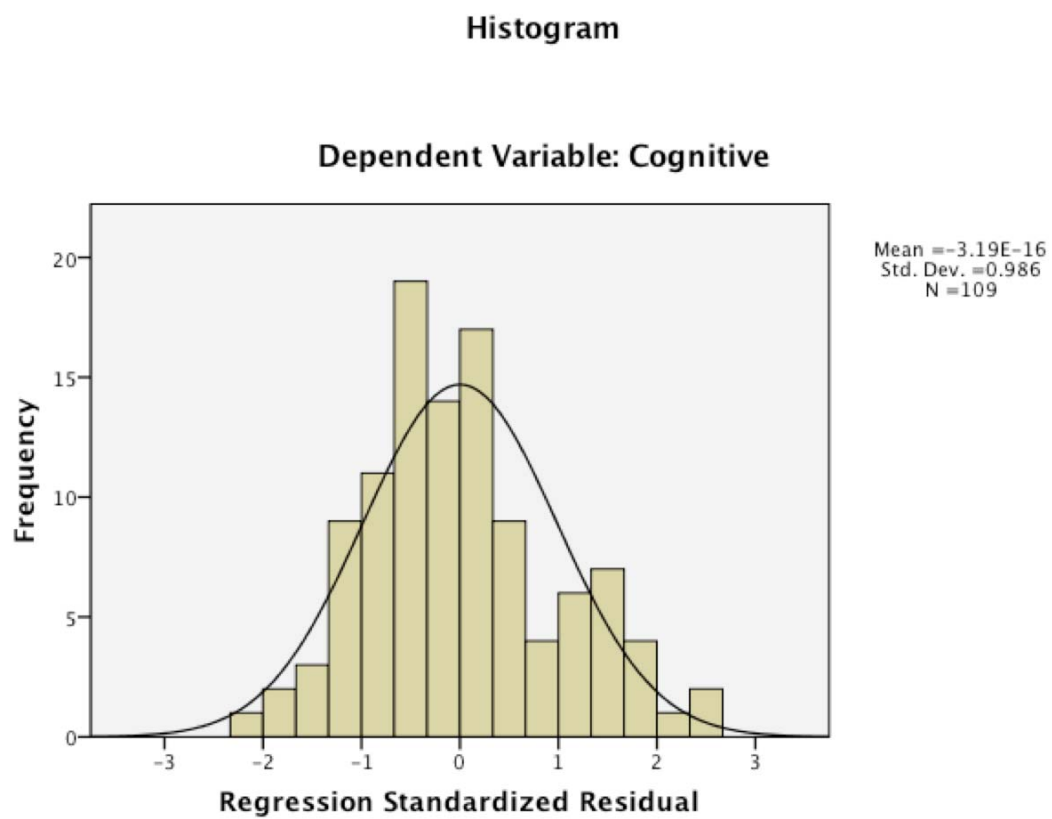


Figure 14: Normal P-P Plot of Residuals.

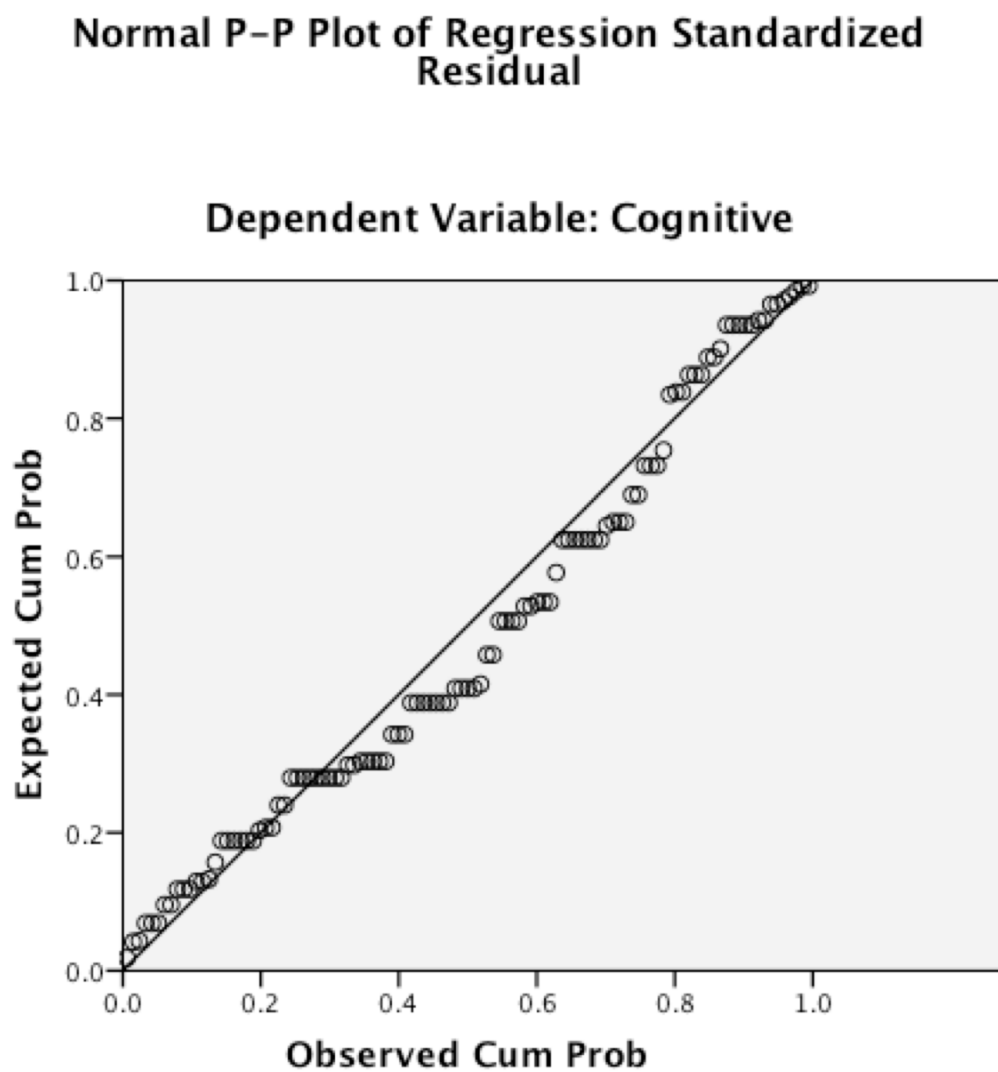
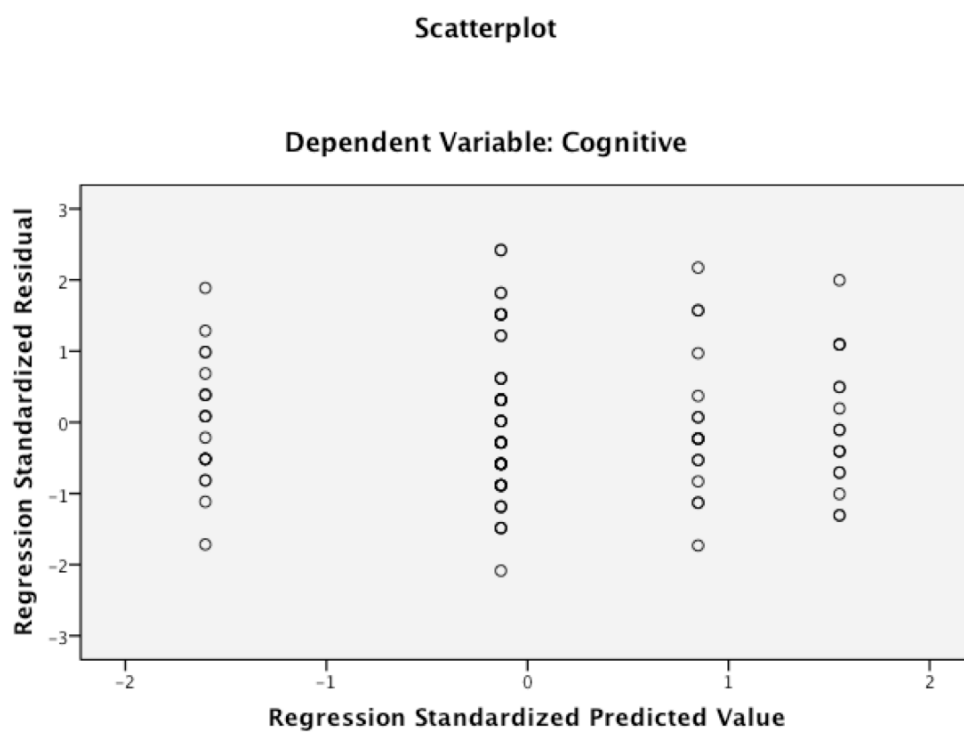


Figure 15: Scatterplot of Residuals.



The univariate regression of emotional outcomes on type of disability are shown in Table 22C. This table shows that type of disability had a statistically significant effect on emotional outcomes. The results in Table 22C show that the mean emotional outcomes score for children with autism spectrum disorders (mean = 31.00) was 4.78 scale units higher than the mean for children with mental retardation mean (mean = 26.22), a statistically significant difference. Three plots were used to test the assumptions of ordinary least squares regression, a histogram of residuals (Figure 16), a P-P plot (Figure 17), and scatterplot of residuals (Figure 18).

Figure 16 is the histogram of residuals. An examination of the histogram of the residuals did not reveal any reason to believe that the residuals were not distributed normally. The P-P plot of residuals (Figure 17) showed no evidence of a serious violation of the assumption of normality. An examination of the scatterplot of residuals (Figure 18) did not reveal any reason to believe that the assumptions of homogeneity of variance or linearity were violated.

Table 22C: Univariate Regression of Emotional Outcomes on Type of Disability.

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	26.22	.77		34.16	< .001
	CP	2.31	1.57	.14	1.47	> .05
	DS	-.13	1.45	-.01	-.09	> .05
	ASD	4.78	1.57	.30	3.05	< .01

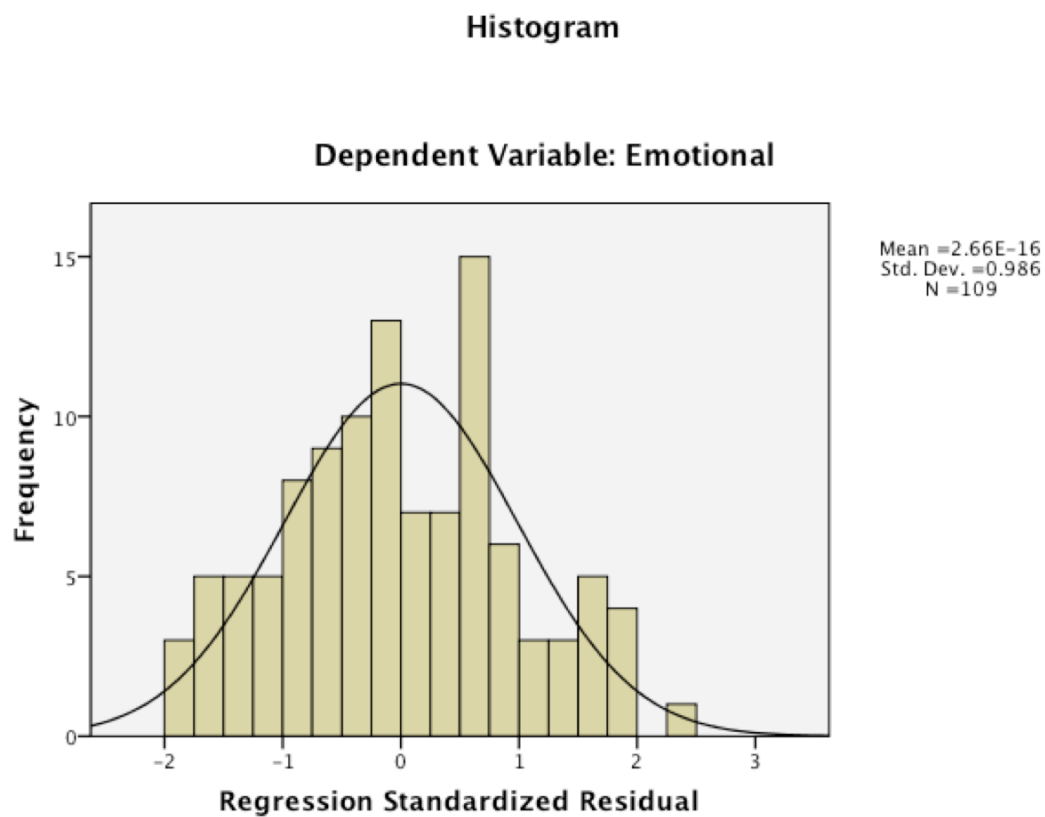
Figure 16: Histogram of Residuals.

Figure 17: Normal P-P Plot of Residuals.

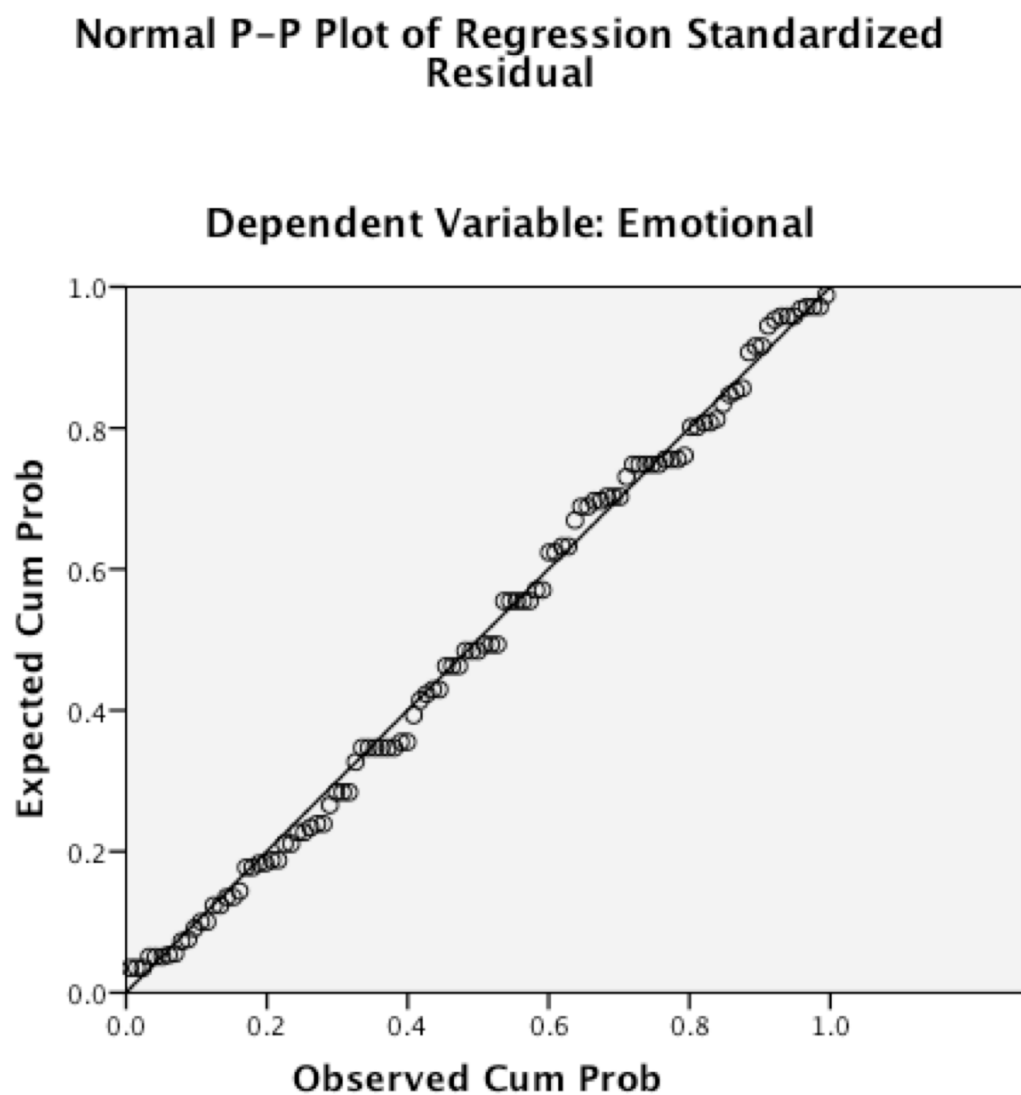


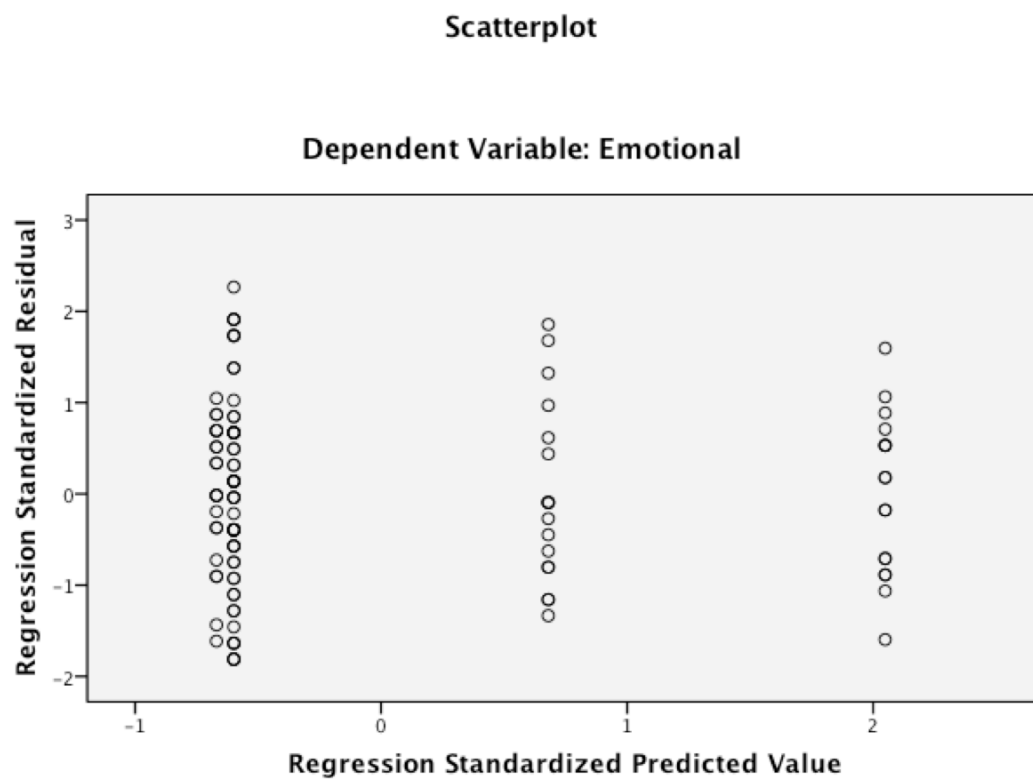
Figure 18: Scatterplot of Residuals.

Table 23 shows the simple correlations between types of disabilities and the outcome variables. Table 23 also shows some evidence concerning construct validity. Cerebral palsy had a Pearson's correlation of 0.63 with the physical subscale ($p < .001$), 0.09 with both the cognitive and emotional subscales ($p > .05$), and -0.22 with autism spectrum disorders ($p > .05$). This pattern of correlations is what would be expected if the physical outcomes subscale measures physical outcomes. The correlations shown in Table 23 also showed the correlation between autism spectrum disorders and the physical subscale was -0.22 ($p > .05$), with the cognitive subscale 0.17 ($p > .05$), and with the emotional subscale 0.27 ($p < .01$). This pattern is what would be expected if the emotional subscale measures emotional outcomes.

In summary, the results from the physical outcomes subscale of the FACTR-R showed that the cerebral palsy campers had higher mean scores on the physical outcomes subscale than the mental retardation group; and the down syndrome group had lower scores than the mental retardation group and the cerebral palsy group. The results from the emotional subscale of the FACTR-R also showed that children with autism spectrum disorders had higher scores than the mental retardation group.

Table 23: Simple Correlations Between Type of Disability and Physical, Cognitive, and Emotional Outcomes.

		Physical	Cognitive	Emotional
CP	Pearson Correlation	0.63	0.09	0.09
	p	< .001	> .05	> .05
	N	78	78	78
DS	Pearson Correlation	-0.25	-0.19	-0.10
	p	< .01	< .05	> .05
	N	78	78	78
ASD	Pearson Correlation	-0.22	0.17	0.27
	p	> .05	> .05	< .01
	N	78	78	78

Chapter 5

Conclusions and Recommendations

This chapter includes a summary of this study. This is followed by the research findings based on the results of the data analysis, and recommendations for further research. The recommendations are based on the overall outcomes of the present study.

Summary of the Study

This study investigated the outcomes for children with disabilities who experienced activities intended to be therapeutic at Camp Koinonia in 2009. This study investigated the physical, cognitive, and emotional outcomes of youth who are diagnosed with multiple disabilities who attended the camp. The program evaluation design was a post-test only evaluation using secondary data.

This study investigated if the camper outcomes were associated with campers' type of primary disability, age, gender, or specific disability. Programs that serve individuals with multiple disabilities may be more difficult to develop than programs that focus therapeutic activities on a single disability. A person's disability is confounded by multiple disabling conditions. A program that serves individuals with multiple disabilities requires a more complex provision of the program, and a greater need for accurate outcomes evaluation of the program evaluation conducted in this dissertation was needed to determine if Camp Koinonia was producing expected outcomes for individuals with multiple disabilities.

A secondary purpose of the current study was to contribute to the literature on disabilities, to further the work of previous researchers in evaluating the impact of camp therapy on the outcomes of children with multiple disabilities, and to strengthen or refute the conclusion that camp therapy is an effective intervention for this population. A child with a disability has strengths and is capable of growth regardless of the limitations of a disability. This research focused on the use of camp therapy as a resource that could increase strengths of participants of camp therapy programs.

After reviewing the history of organized therapeutic camping programs and the growth of camping programs for persons with disabilities, it was very clear that more research needed to be conducted. The current study was based on a combined theoretical model of custodial-welfare, scientific-medical model, and a humanistic educational model.

The information found in the literature view suggested that Camp Koinonia has implemented their therapeutic activities as intended (Brown, 1997). The results of the literature review also suggested that more methodologically rigorous needed to be conducted, in particular that focusing on physical, cognitive, and emotional outcomes for the children who attend the camp. Therefore, the results of the current study will fill this part of this gap in the literature, in particular by addressing the lack of empirical evidence concerning the psychometric performance of the FACTR-R, as well as adding to the literature on therapeutic camping programs for children with multiple disabilities.

This study was a secondary data analysis and therefore was not obtrusive to the participants since the data were collected as a normal part of the 2009 Camp Koinonia

program. This study used a single-group non-experimental outcome evaluation (post-test only). A convenience sample of individuals with multiple disabilities was the focus of the study. Specifically, only data obtained by the counselors of the campers who attended the 2009 Camp Koinonia, and turned in the Functional Assessment of Characteristics for Therapeutic Recreation, Revised (FACTR-R) for the children, were included in this study. The secondary data analysis utilized standard multiple regression.

Reliability and item analyses were conducted for the subscales on the FACTR-R. Multiple groups confirmatory factor analyses were also conducted on the subscales of the FACTR-R. Correlational, multivariate regressions, and univariate regressions were used to answer the research questions posed.

Findings

The results of the reliability analyses suggested that the total scores on each subscale of the FACTR-R, that is, the physical, cognitive, and emotional subscales, had coefficient alpha estimates of reliability ranging from ranging from 0.72 to 0.83. The overall results of the multiple group confirmatory factor analysis suggested that the cognitive and emotional subscales of the FACTR-R be combined into a single subscale. The reliability analysis of the scores on this combined subscale using the data in this study produced a coefficient alpha estimate of the reliability of the scores of .88. Results of the multiple groups factor analysis of the scores on the combined subscale were consistent with the combined subscale and the physical subscale measuring different, though related, constructs.

The results also suggested that two items on the FACTR-R should be investigated for possible problems, the hearing item on the physical subscale and the expression item on the emotional subscale. Due to the small sample size of this study, these results are suggestive and should be interpreted with caution.

The results of the multivariate regression of the three dependent variables (physical, cognitive, and emotional functioning) and the two independent variables of age and gender were statistically non-significant. These results suggested there was no relationship between either age or gender and physical, cognitive, or emotional outcomes for the campers. These findings may suggest that the outcomes for children of all ages and both genders are about the same. The post hoc, post-test only design of the program evaluation makes it difficult to interpret these results. The results of analyses focusing on research question two suggested that the physical disabilities were related with physical outcomes subscale scores. The post-test only design of the program evaluation makes it difficult to interpret these findings. These findings do provide evidence supporting the construct validity of the FACTR-R physical subscale. If the physical subscale does indeed measure physical outcomes, then the scores on this subscale should be associated with the category of physical disabilities, as was found.

The results of analyses focusing on research question three suggested that the diagnosis of cerebral palsy was associated with the physical outcomes subscale. This finding provides some support for the construct validity of the physical outcomes subscale. Further, results of analyses focusing on research question three suggested that there was a relationship between autism spectrum disorders and the scores on the

emotional outcomes subscale. These findings provide some evidence supporting the construct validity of the emotional subscale. If the emotional outcomes subscale measures emotional outcomes, then scores from this subscale should be associated with the autism spectrum disorders diagnosis.

Limitations

There were significant methodological limitations of this dissertation research. The most significant limitation was the absence of a comparison group. This absence severely limits the ability to interpret the results of this study. For example, had there been a comparison group of children comparable to those in this study who had not gone through Camp Koinonia in 2009, then comparisons could have been made between these different groups that would have allowed for analyses that would shed light on whether or not camp participation was associated with changes in physical, cognitive, and emotional functioning.

Another significant limitation was the absence of a pretest of the children who attended Camp Koinonia in 2009 using the FACTR-R. Had this pretest been done, a pre/post analysis could have been done to determine whether or not children who attended the camp had changes in their physical, cognitive, or emotional functioning during their camp participation.

Another limitation was the absence of information on what therapeutic activities children participated in during their Camp Koinonia experiences. This information would have allowed for analyses to be done that could have identified what activities were associated with better camper outcomes.

A final limitation was the relatively small sample size. The small sample size raises the possibility that the results of the reliability analyses and the multiple groups factor analyses capitalized on chance and led to erroneous findings concerning the functioning of the FACTR-R measurement tool.

Recommendations

Based on the outcomes of the present program evaluation, there are several recommendations for further research and for changes to how Camp Koinonia is conducted. They are as follows:

1. Investigate and possibly revise the FACTR-R items regarding hearing on the physical subscale, and the expression item on the emotional subscale.
2. Merge the cognitive and emotional subscales of the FACTR-R. This combined subscale may function better than the current cognitive and emotional subscales.
3. Continue the use of the altered version of the FACTR-R at Camp Koinonia. The results of the program evaluation suggest that the FACTR-R can produce reliable scores.
4. More accurate evaluations of camper outcomes based on the FACTR-R can be obtained using a pre-test and post-test evaluation design.
5. For further study, it would be beneficial to evaluate both the planning and the process of implementing the activities children engage in at Camp Koinonia. To increase the strength of a program evaluation it is important to evaluate the planning, implementation, and the outcomes of the program.

6. A similar evaluation of Camp Koinonia could be conducted based on an integrated program that is longer in duration. One week is a short period of time to expect lifetime physical, cognitive, and emotional functioning to be significantly changed. Better outcomes may emerge from an experience that is longer in duration than one week.
7. More integrated programs should be established in the community as a whole. Individuals should not be limited to yearly events such as Camp Koinonia, but rather should have the opportunity to live, work, and play together throughout the year.

Summary

This chapter began with a general overview of the present study. This was followed by the program evaluator's conclusions based on the outcome of the data analyses conducted on the scores of the FACTR-R scale. The final section was devoted to presenting recommendations for further research, and ideas about how to build upon what has been learned in the present study. Recommendations for future integrated programs were also included in this section.

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Appendix A

Camper Assessment/Goal Achievement in Therapeutic Recreation Assessment of Functional Behavior

Camper's Name: _____ Assessment Date: _____
Counselor's Name: _____

1.0 PHYSICAL FUNCTIONING

1.1 Sight/Vision
 _____ Normal, May have minor vision
 inconvenience due to age
 _____ Partial or Impaired (correctable
 with glasses
 _____ No Vision

1.2 Hearing
 _____ Normal hearing for age
 population
 _____ Hearing impaired (correctable)
 _____ Hearing impaired (not
 correctable)
 _____ Totally Deaf

1.3 Ambulation
 _____ Normal ambulation for age
 population
 _____ Ambulatory with some difficulty
 Semi-ambulatory (independent
 with use of cane, crutches)
 _____ Wheelchair (independent)
 _____ Wheelchair (some problems in
 manipulation, i.e. stroke)
 _____ Wheelchair (unable to manipulate
 independently)
 _____ Bedridden

2.0 COGNITIVE FUNCTIONING

2.1 Reading ability
 _____ Actively Reads (newspapers,
 magazines, books)
 _____ Basic Reading Ability

_____ No Reading Ability

2.2 Orientation
 _____ Normal orientation for age
 population
 _____ Confused and disoriented
 occasionally
 _____ Confused and disoriented most of
 the time

2.3 Thinking
 _____ Creative thinking and problem
 solving
 _____ Average thought processes
 _____ Below average thought processes

2.4 Expressive Language
 _____ Extremely articulate
 Average expressive abilities
 _____ Weak expressive abilities

1.0 PHYSICAL FUNCTIONING

1.4 Bowel and Bladder
Normal bowel & bladder for age population

Occasional Incontinence

Uses bowel & bladder appliances

Special bowel & bladder program

1.5 Use of Upper Extremities (arms, hands, shoulders)
Normal for age population
Problems with hand coordination
Weakness

Problems with general coordination
Uses adaptive devices (braces)

1.6 Torso
Normal for age population

Weakness (i.e. affects sitting, posture)
Uses supportive appliances (braces)

2.0 COGNITIVE FUNCTIONING

2.5 Long-term Memory
Clear recollection of past events
Occasional problems with recall of recent events

2.6 Short-term Memory
Clear recall of recent events
Occasional problems with recall of recent events
Inability to recall recent events

2.7 Immediate Recall
Can process and act on immediate directions
Needs time or a second set of instructions in order to process and act on immediate directions
Does not seem to process and act on immediate directions

2.8 Attending
Concentrates and focuses on the situation
Attends with prompts and reinforcement
Has difficulty concentrating and focusing

3.0 SOCIAL / EMOTIONAL**3.1 General Participation**

 Self initiating

 Voluntarily complies with activities initiated by others

 Responds to direct commands or instructions

 Non-participative
3.2 Dyad (2)

 Initiates & maintains dyad situation / conversations

 Responds to & maintains dyad situations when initiated by others

 Responds minimally in dyad situations (does not contribute new content or questions)

 Does not respond in dyad situations
3.3 Small Group (3 – 8)

 Initiates & maintains small group interactions

 Responds to & Maintains small group interactions when initiated by others

 Responds minimally in small group interactions (does not contribute new content or questions)

 Does not respond in small group situations
3.0 SOCIAL / EMOTIONAL (con't)**3.4 Frustration**

 High tolerance for frustration

 Average frustration tolerance

 Low frustration behavior
3.5 Conflict / Argument

 Appropriately communicates in an argument (maintains emotional and physical control and appropriately responds)

 Passively submits to argument / conflict situations

 Loses emotional and physical control in argument / conflict situations
3.6 Coping / Adjustment

 Surveys alternatives and selects positive approach

 Average coping abilities

 Minimal coping abilities
3.7 Emotional Expression

 Excessive emotional expression

 Display of appropriate emotion to appropriate situations

 Withholds emotional expression

3.8	Inappropriate Emotional Display	3.11	Stress and Anxiety
_____	Minimal or no inappropriate emotional response	_____	Absence of anxiety behavior
_____	Occasional inappropriate emotional response	_____	Occasional anxiety behavior
_____	Frequent inappropriate emotional response	_____	Frequent anxiety behaviors (not situational)
3.9	Competition	3.12	Authority
_____	Aggressively competitive	_____	Looks for and responds well to authority
_____	Enjoys competitive situations appropriately	_____	Responds appropriately to authority
_____	Dislikes or is uncomfortable in competitive situations	_____	Indifferent to authority
3.10	Cooperation	3.13	General Social Ability
_____	Understands and engages in cooperative activity	_____	Actively & frequently seeks social contacts/situations
_____	Cooperative with prompting and reinforcement	_____	Appropriate level of social contact
_____	Non-cooperative	_____	Avoids social contact and situations

Adapted from Peterson, Dunn, and Carruthers (1990) Functional Assessment of Characteristics for Therapeutic Recreation Revised (FACTR-R) by Idyll Arbor,

Inc.

Appendix B**Camp Koinonia 2009****Parental Release Form**

THIS APPLICATION HAS MY APPROVAL. While the staff of Camp Koinonia will take every reasonable precaution, it is agreed that the camp assumes no responsibility for camper's personal property and is released from liability in connection with camp activities and medication administration, except as covered by camper's insurance. I understand that my child will be outside participating in various recreational activities, while at Camp Koinonia. PERMISSION IS HEREBY GRANTED for official representatives of Camp Koinonia, and the business or individuals it designates to photography my child while participating in the 2009 Camp Koinonia. These photos will be used for the sole purpose of promoting, reporting or be used for the sole purpose of promoting, reporting or publicizing the work and program of Camp Koinonia. Such promotion may include the use of my child's name and picture for newspaper or other print media / promotions. DVD's, television news and / or the Camp Koinonia website. I also give my permission for observations of my child to be conducted, and research and statistical data collected, long as confidentiality of information is maintained.

Child's Name: _____

Parent / Guardian Signature: _____

Date: _____

Vita

Janelle Nimer started working for the human service field in 1996 when she was an executive assistant at the trauma awareness and treatment center. It was at this center that she decided to work with individuals who had disabilities and had experienced trauma.

In 1997 she started her bachelor's of science in behavioral science and health. To learn more about the medical field Janelle started working at the University of Utah Medical Center in 2000. Janelle graduated with her bachelor's in 2001. She then started working as a trauma registrar in 2002 at the University of Utah Medical Center.

Janelle was accepted into the Master's of Social Work program at the University of Utah in 2003; at this time she moved to a research coordinator position with the Pharmacotherapy Outcomes Research Center. During her work with the research center as a research coordinator and grants and contracts officer she monitored and wrote proposals, grants, budgets, contracts, milestones, and independent research agreements. She worked very closely with the Office of Sponsored Projects and the Institutional Review Board. It was with this research center that she developed a passion for research.

Janelle graduated with her Masters in Social Work (MSW) in 2005 with a focus on research. During her master's work she completed and published two meta-analyses. The first one was on preventing child abuse and the second one was on animal-assisted therapy. After her masters Janelle started a private practice working with children and adolescents who had experienced sexual abuse with the independent practitioners at West Counseling Center in Salt Lake City.

Due to her passion for research, Janelle started a Doctor of Philosophy in Social Work in 2006. During her PhD she was given the opportunity to be a graduate research assistant and do a pre-doctoral fellowship with Veterinary Social Work (VSW). Janelle did multiple presentations during her doctoral work including the Society for Social Work Research (SSWR), Council on Social Work Education (CSWE), and two international conferences. The two international presentations were in Tokyo, Japan at two different conferences, The International Association for Human and Animal Interaction Organization and the International Society for Anthrozoology.

While working on her PhD Janelle had excellent teaching assistant opportunities focusing on micro, macro, and meso social work. The courses for which she was a teaching assistant include: a teaching mentorship, practice and social context, program design and evaluation, social work policy, grant writing, facilitation techniques, and advanced research II in health. The teaching assistantships have included teaching sections of the course, creating assignments, leading discussion groups, grading, and proctoring exams. Janelle's additional academic related experience included co-creating a Veterinary Social Work elective course and certificate program. She created the entire section on Animal-Assisted Therapy.

Janelle started a private practice in 2009 focusing on individuals from different cultural backgrounds who need trauma-focused cognitive behavioral therapy, addiction therapy, anger management, mindfulness based stress reduction, marriage counseling, family therapy, critical incident stress management and debriefing, and animal-assisted therapy. During this time Janelle also started working as a social worker for East

Tennessee Children's Hospital (ETCH). At ETCH she working with children and their families who are inpatient and well as in an outpatient clinic. She focuses on children who have experienced trauma and who are chronically ill.

Janelle finished her PhD in December 2010. Her dissertation was a program evaluation on children with multiple disabilities who attended Camp Koinonia in 2009. The program evaluation included a psychometric evaluation of the Functional Assessment of Characteristics for Therapeutic Recreation, Revised. Camp Koinonia is a week-long residential program for children with multiple disabilities. Her dissertation advisor was Professor William Nugent, Director, Doctoral Program at the College of Social Work.

Currently, Janelle is working on a National Institute of Health R03 grant entitled: The Role of Human-Animal Interaction in Child Health and Development. With this grant she is collaborating with a team of professionals from the College of Nursing, the College of Veterinary Medicine, and three non-profit organizations. Janelle plans to continue conducting research on animal-assisted therapies, individuals with disabilities, and individuals who have experienced trauma.