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The Nature of Social Support: Self-Efficacy in Overweight and Obese Adolescents

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The Nature of Social Support: Self-Efficacy in Overweight and Obese Adolescents

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Abstract

The purpose of this mixed methods study was to describe the relationship between self-efficacy and social support among overweight and obese adolescents at a weight-management camp.

Twenty-three participants completed a pre- and post-camp questionnaire based on modified versions of the GSE Scale and the SSQSR. Additionally, seven females and six males engaged in focus group discussion at the beginning and at the end of camp. Statistical analysis of the modified GSE Scale and SSQSR surveys was completed. Dialogue and field notes from focus group discussions were transcribed and analyzed by the researchers to develop themes.

Throughout discussion, participants identified the ways in which their family and friends demonstrated support, perceptions pertaining to weight management, barriers to maintaining a healthy lifestyle, and the ways in which participants planned on changing health-related behaviors. Quantitative and qualitative analysis revealed that participants' level of self-efficacy and social support increased between the beginning and the end of camp. Researchers acknowledge that further research could be completed to evaluate the success of similar interventions among larger and more diverse populations of overweight and obese youth. This may lead to a better understanding of the key components to include in weight-management programs. Such knowledge and understanding may assist in the promotion of healthy lifestyle choices among obese adolescents.

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Glossary of Terms

Adolescence: The state or process of growing up; the period of life from puberty to maturity (ages 12 to 19 years) terminating legally at the age of majority; a stage of development (as of a language or culture) prior to maturity (Adolescence, 2003).

Body mass index (BMI): This reflects the excess body fat of a person by dividing weight (kg) by height squared (m^2) (Gilchrist & Zametkin, 2006).

Obese: Individuals with a BMI greater than the 95th percentile for his or her age and sex (Gilchrist & Zametkin, 2006).

Occupational science: A scientific discipline that studies the human as an occupational being (Peloquin, 2000).

Occupation: Ordinary and extraordinary things people do in their day-to-day lives that occupy time, modify the environment, ensure survival, maintain well-being, nurture others, contribute to society, and pass on cultural meanings and through which people develop skills, knowledge, and capacity for doing and fulfilling their potential (Crepeau, Cohn, & Boyt Schell, 2009).

Occupational therapy: Therapy based on engagement in meaningful activities of daily life (such as self-care skills, education, work, or social interaction) especially to enable or encourage participation in such activities despite impairments or limitations in physical or mental functioning (Occupational Therapy, 2003).

Overweight: Individuals with a BMI in the 85th percentile or above for his or her age and sex (Gilchrist & Zametkin, 2006).

Self-efficacy: "The confidence in one's abilities to successfully perform a particular behavior" (Pekmezi, Jennings, & Marcus, 2009, p.16).

Social support: "Focuses on the nature of the interactions taking place within social relationships as these are evaluated by the individual" (Roth, 1989).

The Nature of Social Support: Self-Efficacy in Overweight and Obese Adolescents

Chapter 1: Introduction

Adolescent overweight and obesity has grown significantly over the past ten years. Obesity can be defined by an individual's body mass index (BMI). BMI reflects an individual's excess body fat by dividing weight (kg) by height squared (m^2) (Gilchrist & Zametkin, 2006). Any child with a BMI greater than the 95th percentile for his or her age group and sex is classified as obese and any child with a BMI in the 85th percentile or above for his or her age and sex is classified as overweight (Gilchrist & Zametkin, 2006).

Approximately one in every five American teenagers is classified as overweight. These adolescents may experience prejudice and stigma related to obesity, which may hinder social development. Without proper social relationships, youth may have decreased self-esteem, social skills, sense of identity, and self-efficacy (Pearce, Boergers, & Prinstein, 2002). The field of occupational therapy (OT) can utilize their services to help these individuals participate in their daily occupations.

Background Information

While there are many causes of obesity, sedentary leisure habits and low levels of physical activity are primary sources of obesity (Schmitz, Lytle, Phillips, Murray, Birnbaum, & Yubik, 2002). Physical activity is one factor that is consistently related to childhood obesity; however, there is not a one-to-one correspondence between obesity and physical activity (Gamble, Parra, & Beech, 2009). Thus, there are other factors that influence obesity that may be important to discover and investigate. Psychological factors (i.e. self-esteem and self-efficacy) that relate to obesity are identified in other research. Self-efficacy, defined as confidence in one's own abilities to perform a particular activity successfully (Pekmezi, Jennings, & Marcus,

2002), has been found to be a significant contributor to one's overall health and well-being.

Greater understanding of obesity and related factors will assist in the development of prevention strategies dealing with societal attitudes and environmental barriers that contribute to obesity at young ages.

Obesity is a growing epidemic among the child and adolescent population. In the United States, childhood obesity has increased three-fold over the past 25 years (Smith, Annesi, Walsh, Lennon, & Bell, 2009). Research suggests that the origins of obesity begin early in life (Adair, 2008). According to Adair (2008), national prevalence data reveal that more than 17% of youth, ages 2 to 18 years, have a BMI above the 95th percentile for their age and sex-specific growth criteria. Another 16.5% of children are at risk of becoming overweight (Adair, 2008).

Additionally, children who are obese are more likely to be obese as adults (Colditz, 1992).

Research has shown that the incidence of childhood obesity and medical conditions related to overweight and obesity are increasing (Smith et al., 2009). Thus, it is reasonable to suggest that this portion of the population will be less likely to independently engage in meaningful occupations throughout the lifespan due to obesity and related illnesses.

Mental Health and Occupational Therapy

The concept of occupational science addresses the various ways in which human beings are occupied and the impact of occupational engagement on individuals' bodies, selves, communities, and world (Clark & Lawlor, 2009). Occupational therapy emphasizes the interaction of mental health with physical health, emotion, context, and the individual (Radomski & Davis, 2008). As the Model of Human Occupation (MOHO) suggests, each individual has the motivation, habituation, and performance capacity to participate in activities, also known as occupations (Reed & Sanderson, 1999).

The aspect of mental health within occupational therapy was founded on the belief that the mind and body are connected. Research has illustrated that disruptions in mental health affect engagement in purposeful activity, which can produce psychological effects and changes in a person's ability to make meaningful connections with others. The mind and body connection is necessary for treating the "whole person," which is a key component of the profession's philosophy. When treating the "whole person," a client's mental health is incorporated into the broader treatment plan that addresses motor, perceptual, social, and emotional issues (Radomski & Davis, 2008). Although mental health is often overlooked and underrepresented as a factor for decreased well-being, practitioners must be aware of occupational concerns that are both psychological and social (Peloquin, 2000).

Psychological Effects of Obesity

One's psychological well-being is defined by Ryff and Keyes (1995) as consisting of six different constructs: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance, all of which influence an individual's self-efficacy. The seven distinct concepts listed above can be affected by a number of different factors related to obesity, such as peer behaviors (social acceptance vs. social rejection), age, gender (Walker & Hill, 2009), or even one's self-rated competence level in a particular area of interest, such as school performance or physical activity (Nowicka et al., 2008). People's occupations are an essential aspect to their identity, as they can be used to reconstruct both their physical and psychological health and well-being. As a result, one's overall mental health and well-being can either positively or negatively impact quality of life.

Psychological well-being is influenced by multiple factors, as well as being overweight and obese (Walker & Hill, 2009). Children and adolescents with low self-esteem are shown to

have a more negative attitude and outlook on life, ultimately limiting their ability to respond to daily challenges. These individuals are more likely to engage in harmful, non-productive behaviors such as smoking, drinking, and drug use. Psychological conditions such as depression and anxiety are also more common in individuals with low self-esteem (Wang & Veugelers, 2008). Individuals who are obese are more likely to be depressed and have low self-esteem. There is a negative correlation between obesity and self-esteem and this relationship grows stronger with age (Walker & Hill, 2009). BMI has been shown to have a direct correlation with functional ability; psychosocial functioning decreases as BMI increases (Gibson et al., 2008).

If childhood obesity rates continue to rise, it is reasonable to suggest that incidence of mental health deficits will increase because childhood obesity has been determined to have a negative effect on psychological well-being. Healthy lifestyles will not only improve physical health, they will also enhance and improve mental health (Wang & Veugelers, 2008).

Social Effects of Obesity

Social acceptance is an indication of how children perceive themselves as being accepted by their fellow peers (McCullough, Muldoon, & Dempster, 2009). According to Cacioppo, Fowler, and Christakis (2009), perceived social isolation (i.e. loneliness) is a more important predictor of a variety of negative health outcomes in comparison to objective social isolation. Previous research has found that increased BMI is associated with lower self-perceptions of one's identity and his or her overall social acceptance. As a result, children and adolescents believed to be overweight or obese often experience social isolation and bullying (McCullough, Muldoon, & Dempster, 2009). Quinlan, Hoy, and Costanzo (2009) determined that those who have experienced teasing have been found to have lower rates of physical activity and prefer

sedentary isolative activities rather than social sports activities. Thus, it is reasonable to suggest that social support affects occupational engagement.

There has been extensive research dating back as early as the 1960s that supports the correlation between social isolation and obesity. Overweight and obese adolescents have been shown to be significantly more likely to have three or fewer friendship nominations made by other adolescents in comparison to his or her peers who are considered to be of a “normal” weight. Studies of teenagers have shown that individuals who are either over- or under-weight are commonly victimized and teased by their peers about their weight. Overweight and obese adolescents have been shown to have higher rates of depression and decreased self-esteem, perceived self-worth, and health-related quality of life (Walker & Hill, 2009). The social consequences and social deficits linked with obesity are likely to be strong determining factors for obese individuals’ physical and psychological quality of life.

Problem Statement

Important factors for successful treatment of obesity are social support and a person’s willingness for lifestyle changes (Gilchrist & Zametkin, 2006). With many adverse effects of adolescent obesity, one’s self-efficacy may be influenced by social support, ultimately influencing overall health and the occupations in which the individual engages. However, the problem is that the nature of self-efficacy and social support has not been explored from the perspective of overweight and obese youth themselves.

Purpose

The purpose of this study was to identify the relationship of social support to self-efficacy in overweight and obese adolescents. Self-efficacy and social support have been identified as psychosocial determinants of physical activity and additional occupations that enhance overall

health (Pekmezi, Jennings, & Marcus, 2009). Thus, this research aimed to identify any relationship between social support and self-efficacy in overweight and obese adolescents.

Research Questions

1. How much and what kind of social support is available to overweight and obese adolescents at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?
2. What is the overall level of self-efficacy among overweight and obese adolescents at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?
3. Is there a relationship between self-efficacy and social support at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?
4. How does a weight-management camp alter adolescents' perceptions about weight-management (i.e. participation in occupations, self-efficacy, and social support)? Are there differences between ages? Are there differences between genders?

Significance of Study

Childhood obesity is associated with increased health risks affecting capacity for physical activity and occupational performance, as well as psychological and social deficits. These are major contributors to direct and indirect costs of health care in the United States. The prevalence of obesity and related factors in young children emphasizes the importance of understanding periods of vulnerability in early development and the interaction between physical activity, self-efficacy, and social support. As an extension of previous research, this research may lead to a

better understanding of obesity and contributing factors, such as the nature of social support and self-efficacy. Increased knowledge of these factors may lead to more comprehensive studies involving the nature of social support, self-efficacy, and obesity, as well as development of more effective programs for occupational therapists striving to reduce or prevent obesity among adolescents.

Chapter 2: A Review of Related Literature

Introduction

Overweight and obese adolescents experience many ill effects related to obesity; not only reduced physical health, but poor psychological health as well (Wardle & Cooke, 2005). Because of these problems, individuals are unable to, or choose not to, participate in meaningful activities. This inactivity can result in stereotyping, bullying, and social isolation. Limited research is available on the nature of social support to self-efficacy in overweight and obese adolescents. Thus, the purpose of this literature review is to increase the understanding of this relationship. Information was collected from databases including, CINAHL, PubMed, ProQuest, and OT Seeker. The aim of this research was to help health professionals consider the multiple physical and psychological aspects of obesity in order to develop interventions that facilitate healthy lifestyle choices among overweight and obese adolescents.

Obesity

Overweight and obesity among adolescents is a significant issue for the profession of occupational therapy because obesity and associated diseases can decrease overall health and well-being by inhibiting engagement in meaningful occupations throughout the lifespan. Occupational therapy practitioners could play a primary role in the efforts to reduce and prevent obesity among children by encouraging and facilitating health management skills that promote health and wellness. As a result, individuals will be better able to engage in purposeful activities that enhance the meaning and satisfaction in their lives.

Adolescent obesity is a major concern to health policy and the community. Over the last 25 years, childhood obesity has increased rapidly. This is alarming because several studies have

revealed that obese children are more likely to be obese as adults. Consequently, these individuals are at an increased risk of disability, disease, and death (Colditz, 1992).

In general, obesity is caused by an imbalance between energy intake and energy expenditure. Caloric intake or “energy intake,” is determined by both the amount and type of food consumed. Weight gain occurs if an individual’s energy intake exceeds the amount of energy expended through physical activity and other physiological processes (Bodkin, Ding, & Scale, 2009). However, it is crucial to understand that obesity is affected by factors other than nutrition and physical activity. The socioeconomic, physical, and cultural determinants of health have a strong effect on obesity and other chronic diseases. Additional factors that affect the occurrence of obesity include age, gender, and genetic make-up, as well as the personal attitudes, beliefs, and behaviors that are influenced by external contexts (Bodkin, Ding, and Scale, 2009). Childhood obesity is dynamic in nature and it results from an interaction among multiple factors.

Prevalence of Childhood Obesity

The prevalence of obesity has increased rapidly in recent years. According to a study done by the National Center of Health Statistics in 2008, the data represents a three-fold increase in childhood obesity over the past 25 years (Smith, Annesi, Walsh, Lennon, & Bell, 2009). Approximately 17% of American children and adolescents are considered overweight and another 16.5% are at risk for becoming overweight. About 14% of children ages 2 to 5 years and 19% of children ages 6 to 11 years are overweight (Adair, 2008). The prevalence of obesity among adolescents 12 to 19 years of age was about 15.5% (Committee on Nutrition, 2003).

The rates of obesity among certain populations of minority and economically disadvantaged populations of children are even higher. African American and Mexican American youth have had much higher increases in mean BMI over the last 30 years in

comparison to Caucasian children (Adair, 2008). Research describing prevalence statistics between genders often provides mixed results. However, it appears more common for obesity to be slightly more prevalent among females compared to males (Hensrud & Klein, 2006). Additionally, the prevalence of obesity is higher in rural areas compared to urban areas (Jackson, Doescher, Jerant, & Hart, 2005). The difference in prevalence between children of different ethnic groups, genders, and geographic areas could be a result of several factors. There are many confounding variables, such as socioeconomic status, genetics, personal choice, and environmental factors that influence the prevalence of obesity.

Recent data suggested that the prevalence of childhood obesity will continue to increase. Some research proposed that over half of the children that are overweight will remain overweight into adulthood; that risk increases as age and weight increases (Bodkin, Ding, & Scale, 2009). In comparison to children, approximately 80% of obese adolescents will remain obese into adulthood (Committee on Nutrition, 2003). Childhood obesity is not just a significant problem in America; other countries such as Australia, China, and Brazil are seeing rapid increases in childhood obesity as well.

Since 1997, the prevalence of obesity has escalated in most countries (Prentice, 2006). Investigators estimated that if the trajectory for obesity continues on the current course, 86% of Americans will become overweight or obese by the year 2030 (Apovian, 2010). Nationally and worldwide, obesity has become a widespread health risk that will continue to present challenges for future generations of children if the issue is not addressed.

Comorbidity

Childhood and adolescent obesity is linked to many chronic diseases. According to Smith et al. (2009) and Thomas and Irwin (2009), chronic illnesses associated with adolescent

obesity include type II diabetes, asthma, hypertension, insulin resistance, high blood lipid levels, as well as a variety of psychological disorders.

The impact of obesity on mental health is significant. Research by Hensrud and Klein (2006) and Snethen and Broome (2007) suggest that the psychological impact of being overweight or obese includes, but is not limited to: low self-esteem, depression, anxiety, adjustment problems, social stigmatization, and negative social relationships. Issues related to psychological health and obesity will be discussed in further detail throughout the chapter.

As children progress into adolescence and adulthood, the occurrence and severity of chronic diseases increase. In adulthood, obesity is linked to many of the same secondary illnesses found in childhood obesity; however, additional conditions include cardiovascular disease, certain cancers, osteoarthritis, fatty liver disease, impaired fertility, menstrual problems, and obstructive sleep apnea (Bodkin, Ding, & Scale, 2009). According to the Behavioral Risk Factor Surveillance System (BRFSS), in comparison to average-weight adults, extremely obese adults had 7 times the risk of having diabetes, 6 times the risk of having hypertension, 4 times the risk of having arthritis, and 4 times the risk of having fair or poor overall health. Furthermore, data from the National Health and Nutrition Examination Survey found that obese men and women were approximately at an 18-fold and 13-fold increased risk, respectively, of having type II diabetes (Hensrud & Klein, 2006). As stated by the World Health Organization, the number of people with diabetes could reach numbers in the hundreds of millions within the next two decades (Prentice, 2006). It is pertinent to discuss the illnesses related to adult obesity because a major percentage of obese children will remain obese as adults.

Obesity reduces quality of life and overall health for many individuals, but obesity and related conditions may also lead to death. Examiners have estimated that 112,000 to 365,000

deaths occur yearly in the United States due to obesity (Hensrud & Klein, 2006). This number is difficult to estimate due to the vast number of confounding variables related to mortality. For several years, life expectancy in the United States has improved; however, some investigators believe that this trend will eventually subside due to the rising prevalence of obesity and the increased incidence of cardiovascular disease (Hensrud & Klein, 2006).

Economic Cost of Obesity

Obesity is a causative factor for many chronic diseases; consequently, obesity is a major contributor to the cost of health care in the United States. The trend of increasing prevalence of childhood obesity poses a severe burden on children's health, as well as the future health care system. According to Wolf and Colditz (1998), the number of physician visits attributed to obesity increased 88% from 1988 to 1994. Annually, the United States spends about 139 billion dollars in total costs related to obesity (Hensrud & Klein, 2006). One study estimated that annual health care expenditures for overweight and obese individuals were 81% greater than those of average-weight adults.

Of all medical conditions, obesity is responsible for the most health care expenditures (Hensrud & Klein, 2006). Treatments of obesity can also be expensive. Bariatric surgery has become a popular treatment option in recent years. Although surgery is often effective at reducing weight, it is both dangerous and expensive. According to Forhan (2008) and Hensrud and Klein (2009), bariatric surgery can cost more than \$20,000 per procedure. Oftentimes, additional surgeries are necessary to remove excess folds of skin that result from bariatric surgery, raising the cost of treatments.

The high incidence of obesity among children and adolescents could multiply the amount of services needed in the future (Snethen & Broome, 2007). If the current trajectory of obesity

continues, the United States will be spending 1 in 6 of every health care dollar on obesity (Committee on Nutrition, 2003). Thus, the economic and personal health costs of adolescent obesity are important issues for health care policy.

Physical Activity

One of the most robust predictors of childhood obesity is physical activity. Low levels of physical activity are associated with increased risk of obesity. In accordance with research done by Hensrud and Klein (2006), many children do not engage in frequent physical activity. In fact, 60% of the United States' population does not perform regular physical activity. Moreover, 25% of U.S. citizens are completely sedentary.

Increased use of technology, such as television, video games, and computers is correlated with increased rates of obesity among children and adolescents. Bodkin, Ding, and Scale (2009) found that as the use of television, computers, and video games increased, the likelihood of obesity increased. According to the Committee on Nutrition (2003), National Survey data has indicated that 25% of children 8 to 16 years of age reported watching at least 4 hours of television per day.

Even small amounts of physical activity, both exercise and non-exercise, can improve health. Obesity research has found that modest weight reductions in body weight of 5-10% can decrease blood pressure and blood cholesterol, improve glucose tolerance, and reduce the severity of sleep apnea (Eckel & Krauss, 1998). Despite what is known about the benefits of physical activity, external factors, such as the encouragement toward motorized transport, sedentary employments, increasing use of energy-sparing devices, and the increased use of television, has created an "obesogenic environment," according to Prentice (2006). Although

many factors impact the incidence and prevalence of obesity, it is reasonable to suggest that regular physical activity is an important piece to maintaining a healthy lifestyle.

Nutrition

It is a statistically supported belief that poor dietary choices and low levels of physical activity are major contributors to weight gain. Over the last 20 years, the structure and composition of nutrition in the United States has changed dramatically. Primary changes regarding nutrition include the increased sweetening of the food supply, increased intake of edible oil, increased intake of animal-source foods, and reduced time for food preparation. In recent years, the time allocated for food preparation has been reduced from about 3 hours per day to less than 1 hour per day, resulting in the consumption of food away from home. In addition, the low cost of highly refined oils and carbohydrates may have had a significant influence on the rapid increase in obesity among children and adolescents (Prentice, 2006).

Adolescents who are overweight or obese often engage in poor dietary habits for a variety of reasons. Today, it is common for children to have increased consumption of large meals, sugary drinks, and fatty foods, which have been directly linked to an increase in overweight and obesity rates (Bodkin, Ding, & Scale, 2009). Conversely, some investigators have proposed that childhood malnutrition can predispose adult obesity. Overall, it is critical for children to consume highly nutritious foods on a consistent basis in order to maintain and/or improve health.

Environment

The physical, socio-cultural, economic, and political environments can either facilitate or impede one's ability to make healthy choices and achieve positive health outcomes. Bodkin, Ding, and Scale (2009) defined a healthy environment as an environment that makes healthy options available and accessible. Unfortunately, many children and adolescents are subjected to

“unhealthy environments,” which may cause attainment of impoverished habits and routines that negatively impact weight.

The physical environment impacts what types and amounts of food are available to children. The physical environment can encourage physical activity through the perception of safety within an individual’s community, as well as having modes of transportation to access certain facilities (Bodkin, Ding, & Scale, 2009). Some children live in locations that present safety risks and lack recreational opportunities, which may also reduce the opportunity for physical activity (Thomas & Irwin, 2009).

The socio-cultural environment affects individuals’ behaviors regarding health-related choices. For example, some ethnicities might perceive increased body size as a sign of wealth. The cultural environment also influences what people choose to eat based on modeling from family and peers. If children are not taught how to prepare and eat healthy foods, these children may grow up having poor eating habits themselves (Bodkin, Ding, & Scale, 2009). In America’s “busy” culture, time is often limited. Some children have identified a lack of time as a barrier to nutritious eating. With school, sports activities, and other extra-curricular activities, some children skip meals while increasing their consumption of fast foods. Skipping meals regularly can reduce an individual’s metabolic rate, which results from insufficient consumption of calories throughout the day, ultimately leading to weight gain (Thomas & Irwin, 2009). Thus, the socio-cultural environment affects children’s perceptions, attitudes, and behaviors related to healthy lifestyle choices.

The political environment influences legislation that could either enhance or obstruct healthy lifestyle choices. For example, tax policies dictate what types of food are taxed. Additional policies regulate ingredients regulations in certain foods (i.e. trans fat), content

included on nutrition labels, and advertising. Federal and state policies also influence policy changes in schools, workplaces, and community settings (Bodkin, Ding, & Scale, 2009).

School policies are affected by legislation from federal, state, and local levels. Significant research has found that healthy food choices are often limited in school cafeterias. Researchers have found that the nutrition offered by many schools increases the opportunity for children to consume high fat and sugar foods. Some schools have relied on vending machines, snack bars, and school stores to make a profit. The excessive caloric intake paired with cuts in physical education programs has contributed to obesity in youth (Thomas & Irwin, 2009).

Many professionals and individuals within the community believe that schools could play a major role in preventing childhood and adolescent obesity. Since children spend a significant amount of time in school, government policy could create an environment that facilitates healthy choices among children and adolescents by passing legislation and creating programs that increase the availability of healthy food alternatives and physical fitness programs.

Low Socioeconomic Status

Research regarding children of low socioeconomic status exemplifies the impact of environmental factors on the predisposition toward obesity. Many studies indicate that low socioeconomic status strengthens barriers that prevent individuals from obtaining the means necessary for a healthy lifestyle. Income is a primary indicator of overall health and life expectancy because it facilitates access to resources necessary for healthy living. Yet, many disadvantaged adolescents and their parents have minimal monetary resources (Bodkin, Ding, & Scale, 2009). As a result, it will be more difficult to acquire resources that contribute to overall health and well-being. Research has suggested that individuals who obtained a post-secondary

education were less likely to be overweight compared to individuals with a high school diploma as their highest level of education (Bodkin, Ding, & Scale, 2009).

Socioeconomic status also affects dietary practices and physical activity levels. Children in households with low income brackets have been found to be less active than children from households with higher income brackets (Bodkin, Ding, & Scale, 2009). Lack of safety and accessibility in the community can hinder youths' ability to engage in physical activity and participate in unstructured play (Thomas & Irwin, 2009). In regards to nutrition, children and adolescents of lower socioeconomic status have had higher reported intake of total and saturated fat levels (Committee on Nutrition, 2003). These individuals tend to have greater access to fast food and less access to grocery stores that stock healthy foods (Forhan, 2008). Ultimately, the environmental barriers presented to children of low socioeconomic status impact options for nutrition, physical activity, and overall health.

Genetic Factors and Early Development

The risk of obesity has been linked to genetic factors and health status during utero, infancy, and early childhood. Genetic syndromes that contribute to obesity include leptin deficiency, Prader-Willi syndrome, and Laurence-Moon-Biedl syndrome. There is also be a genetic or evolutionary component that promotes weight gain after food consumption, which increases the chances for survival during famine (Hensrud & Klein, 2006). Dietz (1997) suggested that there is a crucial phase of adiposity rebound that occurs between 5 and 7 years of age. He proposed that obesity during these periods increases the risk of persistent obesity and related complications later in life. Additionally, obesity is more common among children with higher birth weights and obesity in other family members, which may allude to a genetic component (Adair, 2008). Despite the impact of genetics, many researchers suggest that

childhood obesity is still largely the result of an interaction between several environmental factors.

Early development can have a significant impact on long-term metabolic systems affecting weight. Several metabolic factors influence energy regulation. These factors include hormones, peptides, nutrients, proteins, and other regulatory substances found in the organs and cells of the body (Hensrud & Klein, 2006). Fetal nutrition, prenatal growth, and body composition reflect the mother's nutritional stores from her diet and are important to prenatal functioning (Adair, 2008). In utero, the developing fetus is exposed to chemical signals that potentially provide information about the postnatal environment the infant is likely to face. Studies have shown that for mothers with type II diabetes, which cause the increased concentrations of glucose, lipids, and amino acids in the maternal blood, may lead to a larger fat mass in their offspring. Even in the absence of type II diabetes, higher maternal blood glucose levels may lead to higher birth weight in newborn babies (Adair, 2008). Thus, fetal nutrition may affect endocrine and metabolic systems during prenatal growth that produce lasting consequences for future body weight and composition for the child.

Facilitators and Barriers for Healthy Weight

In a qualitative study done by Thomas and Irwin (2009), adolescents 14 to 16 years of age were interviewed on the topic of "healthy body weight." The purpose of the study was to identify barriers and facilitators of healthy body weight and obtain suggestions for enhancing healthy behavior. The study was significant because it was the first to explore the perceptions of overweight and obese youth in order to propose strategies for improving the efficacy of wellness programs.

Through 11 in-depth interviews, researchers discovered multiple facilitators and barriers for healthy body weight among obese youth. The perceived facilitators identified through the study included family support, access to nutritious food, physical activity, and encouragement. In contrast, the perceived barriers included the lack of family support, accessibility to opportunities, and self-esteem, as well as increased bullying, intimidation, and exclusion. Moreover, many youth reported that the lack of time, energy, interest, and support decreased their ability to engage in healthy behavior (Thomas & Irwin, 2009). As illustrated by the findings of the study, the facilitators and barriers for healthy body weight among obese youth are composed of physical, mental, and environmental factors.

In regard to the development of future health and wellness programs, research conducted by Thomas and Irwin (2009) suggested that children need a supportive, fun, and co-educational environment that utilizes physical activity and teamwork. In addition, an inclusive environment is important, as many children want to know more about nutrition and healthy lifestyle choices. Programs should be safe, respectful, and non-judgmental and provide an opportunity to meet new friends (Thomas & Irwin, 2009). The researchers acknowledged some limitations of the study. Primarily, the small and analogous sample of participants reduced the overall generalizability of the results found during the interviews. The researchers recommend that additional studies be completed to learn more about the perspectives of obese youth. Furthermore, investigators suggested that a pilot wellness program be designed and evaluated based on the themes from the study.

A related qualitative study involving children, 8 to 12 years of age revealed a theme of “intellectual disconnect.” Using a phenomenological approach, researchers found that children correctly identified the difference between unhealthy and healthy behaviors regarding nutrition

and physical activity. However, there was a disconnect between the children's knowledge and their actual daily health practices (Snethen & Broome, 2007).

Program Development

The body of research regarding childhood and adolescent obesity is growing; however, innovative studies are needed because the number of effective interventions designed for treating and preventing obesity are limited, especially among the youth population. Strice, Shaw, and Marti (2006) completed a meta-analysis of 64 published and unpublished youth obesity prevention studies from 1980 to 2005. Results revealed that 79% of interventions failed to improve BMI significantly (Smith, Annesi, Walsh, Lennon, & Bell, 2009). Still, it may be critical to focus on early prevention because of the lack of success regarding interventions that attempt to reduce obesity (Adair, 2008).

Community programs could assist children and their families in learning healthy eating behaviors and methods for increasing physical activity in a non-threatening way. This may reduce weight gain and its many co-existing health risks (Thomas & Irwin, 2009). Moreover, because parents influence a child's lifestyle choices, parents need to be informed in order to encourage ongoing participation. Although many parents want what is best for their kids, it is imperative to consider that parents may not be able to provide optimal nutrition, provide their children with opportunities for physical activity, or have time to exercise and model healthy behavior due to restraints on money, time, and/or the environment (Thomas & Irwin, 2009).

The long-term effectiveness of obesity treatment programs has been limited due to the complex interaction between personal and environmental barriers. Occupational therapists should try to develop wellness programs while considering the resources necessary for youth to learn and maintain habits and routines that promote health. By taking a holistic view of

overweight and obesity among adolescents, occupational therapists will be more capable of providing the support and skill training needed to overcome barriers of overall health.

Psychological Factors Related to Obesity

Obesity has been deemed a public health epidemic that carries severe financial, social, and psychological consequences (Pratt, 2009). The risks related to childhood obesity and physical health are well established. While obese adolescents are at increased risk for physical health problems, their social and psychological health is often negatively impacted as well. Psychological aspects that may be impacted by overweight and obesity include how an adolescent perceives his- or herself as well as how he or she views and interprets social feedback that is received within the environment (Pratt, 2009). More specifically, one's self-perception, self-esteem, social functioning, and overall mental health may also be significantly impacted. Gibson et al. (2008) has been a major contributor pertaining to the research of the relationship of psychological well-being of adolescents.

Occupation and Identity

Occupational therapy is defined as “the art and science of helping people do the day-to-day activities that are important and meaningful to their health and well-being through engagement in valued occupations” (Crepeau, Cohn, & Boyt Schell, 2009, p. 217). Occupations are all of the activities that occupy an individual's time. They may be used to construct his or her identity and/or provide meaning in that individual's life. People's occupations are an essential aspect to their identity, as they can be used to reconstruct both their physical and psychological health and well-being.

Self-Perception.

Self-perception consists of one's perceived self-competence in several different domains, such as scholastic competence, social acceptance, athletic competence, physical appearance, and behavioral conduct. It is reasonable to believe that environmental and personal characteristics, such as socioeconomic status or gender, may contribute to one's perception of his or her self, in addition to one's perception of his or her global self-worth. (McCullough, Muldoon, & Dempster, 2009). Research suggests that some children may be experiencing social rejection due to being overweight and many overweight children are not happy with themselves, ultimately affecting their psychological well-being. Phillips and Hill (1998) believe that an altered self-perception may greatly impact this particular group of children's ability to obtain the appropriate psychological resources that are critical to engaging in health-promoting behaviors aimed at reducing obesity (McCullough, Muldoon, & Dempster, 2009).

In a study examining the relationship between obesity and self-esteem in relation to specific domains of self-perception, McCullough, Muldoon, and Dempster (2009) examined 211 children between the ages of eight and nine years old. While each child completed the Harter Self-Perception Profile for Children, each individual's BMI was obtained by the researchers as well. It was found that increased BMI is associated with lower self-perceptions of social acceptance and physical appearance.

Similarly, Gibson et al. (2008) found that, in a study examining the relationship between individuals' BMI z-scores and various domains of children's psychosocial functioning (i.e. body dissatisfaction), increasing BMI z-scores was strongly associated with higher levels of body dissatisfaction; and while dissatisfaction with one's physical appearance is prevalent in healthy

weight groups as well, it has been found to be much more widespread among overweight and obese populations.

McCullough, Muldoon, and Dempster (2009) and Gibson et al. (2008) concluded that there is a positive relationship between increasing BMI and lower self-perception. However, in comparison to Gibson et al. (2008), McCullough, Muldoon, and Dempster (2009) not only considered the age and BMI z-scores of each participant, but also his or her socioeconomic status. Results showed that disadvantaged children, in general, have reduced levels of self-perception. In support of this finding, McGee and Williams (2000) and Muldoon (2000) state that previous longitudinal studies have shown that in children coming from disadvantaged geographic areas, perceived global self-worth at age 11 years is predicted by these individuals' self-perceptions of their physical appearance at age 8 years (McCullough, Muldoon, & Dempster, 2009). Although standardized methods were used to reach such conclusions, it is important to consider the possibility that measures used to distinguish those individuals deemed as "disadvantaged" may have been inaccurate, causing misclassifications.

Being female has also been shown to be a risk factor in relation to self-perception. According to Franklin, Deyner, Steinbeck, Caterson, and Hill (2006), there is evidence that says that gender influences the relationship between obesity and self-perception, and girls are reported as being more adversely affected in comparison to boys (McCullough, Muldoon, & Dempster, 2009). However, it is also stated that much of the previous research examining the relationship between gender, obesity, and self-perception excluded boys from being research participants. McCullough, Muldoon, and Dempster (2009) found that gender did not interact with BMI, but did in fact have a direct influence on the specific self-perception domains of athletic competence

and behavioral conduct. Boys perceived themselves as more skilled than girls in athletics while girls perceived themselves to be better behaved than boys.

While there has been conflicting evidence regarding whether or not there is an association between obesity and altered self-perception, it is possible that this inconsistency may be due to researchers' different perceptions as to how self-perception is defined. A better understanding of the relationship among the numerous factors that generate one's self-perception may aid in the development and availability of the psychological services that are available for such individuals.

Self-Esteem.

According to Wang and Veugelers (2008), self-esteem is an assessment of one's self worth. It is one of the most important components of mental health, as it is often used to gauge one's mental well-being. Researchers have discovered correlations between self-esteem, obesity, and various life factors, suggesting an overall inverse association between body weight and self-esteem (Wang & Veugelers, 2008). Studies that have made a distinction between the various aspects of self-esteem have concluded that while there is a positive association between school performance and self-esteem, obesity primarily influences the domains of self-esteem related to both physical appearance and athletic competence (Gibson et al., 2008).

Gibson et al. (2008) found that children between the ages of eight and thirteen years with increasing BMI z-scores had lower levels of self-esteem, in addition to decreased global self-worth, physical appearance, social acceptance, athletic competence, and behavioral conduct self-esteem. In comparison to healthy weight children, those who are considered as overweight have lower levels of self-esteem (Gibson et al., 2008). In support of this conclusion, a study conducted by Nowicka et al. (2008), aimed to examine factors influencing self-esteem in obese

pediatric patients between the ages of eight and nineteen years, found that self-esteem was significantly lower in older age groups on all self-esteem subscales; also suggesting that as age increases, self-esteem decreases.

In addition to age, gender was also determined to influence self-esteem. While self-esteem was significantly lower on all subscales for both genders, girls had significantly lower levels of self-esteem on the subscales of Physical Characteristics and Psychological Well-Being (Nowicka et al., 2008). This suggests that the adolescent age group is more vulnerable to the negative psychological impacts of obesity, especially among female adolescents (Gibson et al., 2008). In support of this conclusion, as stated by Walker and Hill (2009), the negative relationship between obesity and self-esteem strengthens with age and is more apparent in females than in males.

According to Nowicka et al. (2008), there are discrepancies from fellow researchers regarding the conclusion that both age and gender impact the relationship between obesity and levels of self-esteem. Further research pertaining to obesity with self-esteem and its many different domains may be beneficial as it has the potential to help researchers understand the ways in which to improve obese individuals' psychological well-being (Walker & Hill, 2009).

Social Functioning.

In addition to the physical consequences of obesity, overweight youth are often the victims of bias, stereotyping, and weight-related teasing from their peers (Quinlan, Hoy, & Costanzo, 2009). According to Gibson et al. (2008), as BMI increases, the likelihood of the child experiencing psychosocial problems increases as well. A greater prevalence of both global social incompetence and specific expressive behaviors (such as aggression) has been shown among overweight children.

Studies of teenagers show that about 1 in 5 are teased about their weight, directed at both boys and girls and those considered as over- and under-weight. More specifically, 50-70% report being teased for being obese (Walker & Hill, 2009). Overweight boys have been found to be at risk of being victims of teasing and of physical aggression by their peers. Similarly, according to Gibson et al. (2008) girls are also at risk of peer victimization as well but in a more relational rather than physical form, such as being purposefully excluded from social activities or social groups. As a whole, overweight male and female adolescents have been found to be more likely both the victims and perpetrators of bullying in comparison to their healthy weight peers.

In a study conducted by Quinlan, Hoy, and Costanzo (2009), ninety-six adolescents who were enrolled in a residential weight-loss camp program took part in an observational study regarding the relationship between perceptions of different kinds of teasing experiences and psychosocial functioning. This study, relative to the findings of Gibson et al. (2008), suggested that overweight or obese individuals experience peer teasing more frequently than normal weight individuals. In contrast to Gibson et al. (2008) and despite some research that shows gender differences pertaining to the type of teasing males and females experience, no gender differences were found in this particular study. It is possible that Quinlan, Hoy, and Costanzo (2009) did not include enough male participants in this study to adequately determine whether or not gender differences do in fact exist.

According to Walker and Hill (2009), a United States' study on social network mapping found that overweight and obese adolescents were more likely than their normal weight peers to have three or fewer friendship nominations by other adolescents. Those considered to be overweight tended to also receive fewer reciprocal friendship nominations; that is, it was more common for obese adolescents to nominate people as friends who did not nominate them in

return. As it would be reasonable to believe that these individuals' social interactions would be influenced, a study conducted by Allon (1976) found that girls' perceptions of social isolation and social relationships due to their weight influenced their social interactions with fellow peers on a day-to-day basis (Quinlan, Hoy, & Costanzo, 2009). In support of this finding, Quinlan, Hoy, and Costanzo (2009) also found in their study that of the 96 participants involved, participants with lower BMIs and who reported higher frequency of weight-related teasing (WRT) displayed higher social involvement at camp. On the other hand, participants experiencing more frequent WRT and with higher BMI scores displayed less social involvement at camp.

In comparison to clinic-referred normal-weight children, children considered to be obese tend to be rated as less socially competent, have more behavioral problems, and exhibit more social isolation (Quinlan, Hoy, & Costanzo, 2009). Furthermore, Quinlan, Hoy, and Costanzo (2009) determined that those who have experienced teasing have also been found to have lower rates of physical activity and preference for sedentary, isolated activities rather than social sports activities. Increased frequency of teasing was associated with worse social functioning. It is therefore reasonable to believe that children who receive positive social feedback may become more comfortable in social settings, have more positive social opportunities, and may develop better social skills.

Depression.

Adolescent depression is most apparent in clinical samples, and obese females show the most distinguished vulnerability to depression (Walker & Hill, 2009). This is consistent with Gibson et al. (2008) who also states that, based on this study that examined the relationship between children's weight and degree of psychosocial functioning, there was a significant

interaction between BMI and gender. As BMI increases, girls have a significantly stronger increase in depression in comparison to boys.

It is reasonable to believe that the relationship between BMI and depression could be due to several different factors. According to Gibson et al. (2008), previous research has suggested that the relationship between gender differences and depressive symptoms does not emerge until puberty. However, based on what has been previously discussed regarding age and its association with self-perception and self-esteem, it is reasonable to conclude that age is a significant contributor to psychological well-being, beginning as early as the age of 8 or 9 years. Adolescents whose obesity persists into adulthood have been found to be at increased risk of depression (Walker & Hill, 2009).

Depression could also be influenced by social risk factors, such as society's pressures for thinness (Rofey et al., 2009). In support of this conclusion, a 1991 study showed that 80% of severe obese people perceived themselves as unattractive, believed that other people make disapproving comments regarding their weight, preferred not to go out in public, felt discriminated against when applying for jobs, and/or felt that their physician treated them disrespectfully (NYU Langone Medical Center, n.d.). All these experiences can lead to depression. According to the NYU Langone Medical Center (n.d.), severely obese persons were asked whether they would prefer to be obese or to have some other medical condition. By and large, respondents said that they would rather be blind or have one of their legs amputated than be obese. When asked whether they would rather be rich and overweight than poor and thin, every respondent chose the latter.

In comparison, longitudinal studies suggest that depression in childhood and adolescence may actually precede obesity more often than proceed obesity (Gibson et al., 2008). Elevated

depressive symptoms could exacerbate weight gain over time. Depression or anxiety could affect diet or activity levels that elevate the frequency of behaviors that ultimately lead to weight gain, such as sedentary behavior, emotional eating, or a decrease in exercise. In addition, psychiatric medication use may affect one's appetite causing increased hunger (Rofey et al., 2009). Certain drugs used to manage psychological problems, such as depression, have weight gain among their numerous side-effects (Walker & Hill, 2009). Such conflicting research encourages and supports the persistent need for further studies regarding the causes of obesity and the various effects the epidemic has on the psychological health of the adolescent population.

Social Stigma.

Perceptions of overweight individuals as being socially "unacceptable" remain relatively constant among all ages, adults being slightly more accepting of obese individuals in comparison to children or adolescents (Quinlan, Hoy, & Costanzo, 2009). While studies have found that the higher risk of depression in obese adolescents can be accounted for by their weight concerns, perceived isolation from peers or a combination of social isolation and experiences of shame in relation to his or her weight may also be contributing factors (Walker & Hill, 2009).

According to Walker and Hill (2009), the social rejection of obese individuals can be seen in research dated as far back as the 1960s. Children have been shown to prefer friends who are disabled over those considered to be obese. Obese children have been shown to be liked the least by their peers, especially by girls, and are at risk for social rejection, oftentimes resulting in feelings of loneliness and isolation (Walker & Hill, 2009). Pachankis (2007) states that self-evaluation has a strong influence on the way in which individuals interact with their surroundings.

Self-concept and perceived self-efficacy based on social feedback received within the environment reportedly influence overall cognition, affect, and behavior. It has been found that the number of developmental occasions (i.e., childhood, adolescence, young adulthood) that loneliness is experienced by an individual predicts the number of elevated cardiovascular risk factors that individual will have, such as body mass index, waist circumference, blood pressure, and cholesterol levels (Cacioppo, Fowler, & Christakis, 2009). In addition, a study conducted by Wheeler, Reis, and Nezlek (1983) reported that loneliness is related to the amount of time male and female participants would interact with women on a daily basis, and, in reference to gender differences, it was found that women were more commonly lonely than men (Cacioppo, Fowler, & Christakis, 2009)

Situations in which an individual feels as if he or she is the only one possessing a particular stigma may be more likely to lead to the individual experiencing negative psychological consequences. It has been found that those who are trying to conceal a stigma experience a particular set of internal reactions, both cognitively and affectively. These reactions may include, but are not limited to preoccupation, vigilance, guilt, and shame. However, there is also evidence that the presence of other people who share the stigma results in more positive self-esteem and mood among that particular group of individuals (Pachankis, 2007). Such evidence and information strongly supports the researchers' belief that the social support received from peers, family members, and friends will greatly impact adolescents' physical and psychological well-being.

Occupational Therapy

Occupational therapy is a profession that helps people return to their activities of daily life from illness, injury, or psychological problems (Peloquin, 2000). The term "occupation"

encapsulates all meaningful activities that occupy one's time (Dickie, 2009). Occupations are integrated into daily routines and tend to have special meanings that vary from person to person. Since occupations are meaningful, they often become part of a person's identity (Dickie, 2009). Yerxa (1998) stated, "The strength of the occupational therapy profession is connected with the power of those it serves through knowledge of occupation."

Occupations, which are also known as daily activities, have been used as a means for therapy since ancient times (Turner, Foster, & Johnson, 2005). Since then, occupations have been used with many populations to restore health. The Occupational Therapy Practice Framework expresses the importance of occupation by stating that the primary goal of occupational therapists is to enable clients to participate in activities that are purposeful and meaningful (AOTA, 2008). By creating programs involving clients' interests, individuals will be more eager to participate in treatment. The formation of these positive relationships will assist individuals in getting back to their activities of daily living.

Model of Human Occupation

Occupational therapists have developed a variety of models that are used to plan and guide treatment. The Model of Human Occupation (MOHO), developed by Gary Kielhofner, is concerned with the extent to which individuals can participate in life occupations. This dynamic model seeks to account for motivation, performance, and organizations of occupational behaviors in life. Therapy based on this model provides engagement in occupational behaviors that restore, maintain, reorganize, or develop capacities, lifestyles, and motives (Kielhofner, 1997).

MOHO suggests that there are three subsystems within the complex organization of a human being: volition, habituation, and performance. Volition guides choices of action through

valued goals, interests, and personal causation. The system of habituation is made up of habits and internalized roles, which function together to maintain action. Lastly, performance produces action through physical, cognitive, or social skills. Behavioral choices emerge from the interaction of these systems. These three subsystems interact and result in the motives of exploration, achievement, and competency, which lead to functioning (Keilhofner, 1997).

Occupational therapists using this model can assist individuals in reorganizing the subsystems to facilitate change in their environment and reinstate a normal course for occupational growth. When an individual does not use his or her capacities to meet society's expectations or when behavior lacks meaning, hope, habits, or roles, therapists can promote change by increasing the strengths of a person through awareness of his or her capabilities (Keilhofner, 1997). Thus, when a person is experiencing occupational dysfunction, the Model of Human Occupation is an appropriate framework to base intervention techniques used to help the individual develop new habits and roles.

Application to Research

In the case of adolescent overweight and obesity, the application of MOHO as a framework for intervention would be appropriate. New habits and routines can be formed to preserve a way of following nutritional guidelines or exercising, while the motivation piece can be altered to prompt an adolescent to anticipate, experience, and choose to participate in occupational behaviors that promote physical activity and calorie restriction. These two subsystems influence performance and directly influence an individual's overall capacities and efficacy when participating in activities. Due to the interaction of motivation, habits, and performance on adolescents who are obese, this model is an accurate tool to be used in treatment.

Similar findings were present at an acute mental health facility in Manchester, United Kingdom, which utilized the Model of Human Occupation when promoting physical activities for those with mental disabilities (Jones, 2008). The role of the occupational therapist at this facility was to promote self-care, productivity, and leisure activities. The positive support provided by occupational therapists made the individuals view physical activity in a more positive light. Physical activity is viewed as important for this population because of their often sedentary lifestyles. When the individuals viewed physical activity as meaningful and purposeful, they were more likely to engage and sustain participation (Jones, 2008). Through the utilization of MOHO, individuals were more likely to maintain functioning in their daily occupations due to positive changes in volition, habituation, and performance.

Occupation and Obesity

The issue of childhood and adolescent obesity is pertinent to the profession of occupational therapy because obesity hinders occupational performance and decreases overall health and life satisfaction among individuals. Studies between overweight children and normal weight children related to participation in physical activities have found that overweight children have lower self-efficacy scores, experience less enjoyment in physical activity, and have increased difficulty participating in physical activity due to their weight (Snethen & Broome, 2007). Furthermore, a study by Hensrud and Klein (2006) revealed that obese individuals frequently report reduced quality of life. This may be a result of medical complications and other daily challenges, such as: difficulties buckling seat belts; fitting into seats in airplanes, theaters, and buses; maintaining adequate hygiene; and urinating accurately (men). In 1975, Hilde Bruche wrote, "There is no doubt that obesity is an undesirable state of existence for a child. It is even more undesirable for an adolescent for whom even mild degrees of overweight

may act as a damaging barrier in a society obsessed with slimness” (Strauss, 2000, p.1). It is reasonable to suggest that the lack of engagement in meaningful occupations may hinder the overall satisfaction and quality of life among obese children.

Tut Gramling, previously an occupational therapist employed in the school setting for 16 years, is the founder and co-director of a weight-management camp located in the Midwest. Gramling proposes that occupations of overweight and obese adolescents are significantly impacted by obesity. Her camp is a weight management camp designed for youth nine to seventeen years of age. The camp embraces philosophies based on research and experience from occupational therapists, nutritionists, exercise physiologists, and psychologists. The program creates a variety of experiences and educational opportunities to improve and create healthy lifestyle habits and routines among youth. Uniquely, this camp is one of three weight-loss camps in the Midwest designed for youth.

Based on research and experiences obtained from the school setting and from working at her weight-management camp, Gramling observed physical delays among overweight and obese youth. Derived from personal communications with Gramling, the three primary childhood occupations affected by obesity include: learning through development, education, and play. Gramling observed that balance and strength were often significantly delayed among obese children as well. As a result, children were on the sidelines of playgrounds and classrooms, not only for social reasons, but also because children were keeping themselves safe by avoiding situations that would test their strength and balance (T. Gramling, personal communication, March 28, 2010).

Ultimately, obesity contributes to underdeveloped motor skills. As a result, obese children and adolescents frequently choose to avoid participation in activities. When children

evade participation in activities, physical, mental, and social deficits grow larger. The overall lack of meaningful engagement in activities throughout childhood decreases health and happiness into adolescence and adulthood (T. Gramling, personal communication, March 28, 2010).

From a biomechanical perspective, Gramling noticed that many obese and overweight children had wide and large feet. As confirmed by specialists, excessive weight had led to overstretching and splaying of the muscles and tendons in the feet of overweight and obese children. Foot pain was a major complaint and deterrent from physical activity for many of the children Gramling encountered at camp.

Gramling also identified psychosocial barriers to occupational performance among youth. Gramling said, “Children at camp hide in their hoodies, from their peers and their families, even though they become larger, they are trying to become invisible in social situations.” One camper’s parent said, “I lost my daughter to weight.”

According to Gramling, many obese and overweight youth have been socially marginalized. Some obese children have difficulty developing the skills necessary to make friends, recognize social cues, and act assertively. In addition, they battle social stigmas. Tut Gramling found that her occupational therapy background has allowed her to target both physical and social skill sets, rather than using a narrow scope of practice when implementing obesity treatment. Gramling stated that her background in occupational therapy prepared her to view the issue of childhood and adolescent obesity holistically. Accordingly, Gramling has been able to consider the interaction between many physiological and psychological processes that affect obesity (i.e. strength, balance, foot pain, social skills, etc.). Gramling stated, “My OT background has allowed me to address a variety of challenges, such as fatigue, low energy,

interpersonal skills, respect of others and their space, nutrition, and exercise. The holistic nature of occupational therapy has allowed me to aid overall development, increase occupational performance, and help children find meaning.” Children and adolescents struggling with weight leave camp with a greater overall skill set. Individuals are able to continuously develop physically, socially, and psychologically through play and engagement in meaningful occupations following attendance at camp.

In congruence with Gramling’s professional experience, research suggests that obese and overweight adolescents are deprived in several areas of occupation, such as self-care, leisure, and play (Forhan, 2008). As a result of obesity and related illnesses, children will suffer long-term effects and decreased participation in meaningful activities throughout childhood and adulthood. Adolf Meyer (1977), a founder of the profession of occupational therapy suggested that when illness and injury prevent people from finding meaning, occupational therapists must find opportunities that encourage occupational performance and promote nourishment of the mind, body, and spirit. The role of the occupational therapist is to be client-centered and occupation-based while encouraging clients to take responsibility for their own health and wellness (Brose & Ord, 2009). Occupational therapists have the ability to enhance the skills of children and adolescents to enable engagement in physical activity and healthy eating among children.

Occupational therapists use a holistic and humanistic approach to treatment. Thus, occupational therapists are taught to consider the individual’s self-perception in reference to meaning and experience (Forhan, 2008). Occupations have specific meanings that differ from person to person (Hinojosa & Blount, 2004). Personal meaning is determined by contextual, temporal, psychological, social, symbolic, cultural, ethnic, and spiritual dimensions.

Occupational therapists must consider the dynamic nature of obesity and the unique meaning of

occupations among children and adolescents because occupations contribute to an enhanced experience of health and well-being for individuals (Forhan, 2008).

Occupational therapists can also be effective advocates for promoting health and fitness, as well as supporting policies of government legislation and third-party payers that provide children and their families with healthier means of living. Occupational therapists can advocate within multiple practice settings to promote health among children. In regards to advocacy, Forhan (2008) suggested that it is an occupational injustice for people of low socioeconomic status to be adversely affected by environmental factors that are beyond their control. Occupational therapy practitioners can advocate for those individuals who are restricted from participating in meaningful occupations because of external barriers.

In the Occupational Therapy Practice Framework, health management is defined as developing, managing, and maintaining routines for health and wellness promotion, such as nutrition, fitness, and decreasing health risks (Brose & Ord, 2009). Wellness programs designed to reduce obesity among children should aim to provide support, enhance self-efficacy, maintain patient accountability, promote mental health, increase awareness of related risk factors, and assist clients in making positive lifestyle choices (Brose & Ord, 2009). By developing effective treatment interventions and advocating for disadvantaged children, the profession of occupational therapy can increase the health and life-satisfaction of obese children and adolescents within the community, nation, and world.

Self-Efficacy Related to Occupation and Obesity

Due to all the negative physical and psychological impacts of obesity, an individual's occupational performance is restricted and his or her self-efficacy can be affected. Self-efficacy is an important determinant of behavior change because of its influence on the initial choice to

participate in a behavior (Bandura, 1997). Obese adolescents may be participating in unhealthy behaviors that consequently do not allow full participation in activities. This theory has been used by many professionals to promote change in those who participate in negative behaviors (Pekmezi, Jennings, & Marcus, 2009).

Bandura's Self-Efficacy Theory

Albert Bandura originally introduced the self-efficacy concept in 1977, which has influenced the work of many researchers (Bandura, 1977). Self-efficacy is developed through learning by examining past performance, observing others, verbal persuasion, and physiological cues (Pekmezi, Jennings, & Marcus, 2009). Self-efficacy affects the course of action an individual chooses, how much effort is put forth in an activity, and how long he or she will face adversity (Bandura, 1997). The important point of self-efficacy is that if a person believes he or she can perform a behavior successfully, he or she is more likely to participate in that activity (Pekmezi, Jennings, & Marcus, 2009).

Research has found that those with high self-efficacy attribute failure to situation or unstable internal factors, in comparison to those with low self-efficacy who attribute failure to stable internal factors (Jerusalem & Schwarzer, 1992). Concurrently, people with high self-efficacy attribute success to personal factors than those who have low self-efficacy. This has a great influence on participation levels in healthy behaviors because if an individual believes failure is due to their own personality traits, he or she may not be motivated to participate.

In a study by Gamble, Parra, and Beech (2009) featuring 168 adolescents of different gender and ethnicity, researchers studied if self-efficacy contributed to levels of physical activity and increased healthful eating. Diet and exercise are primary variables related to obesity and overall BMI. The conclusion drawn by the researchers was that there is an interactive nature

between self-efficacy and obesity risk factors. Adolescents with higher levels of physical activity also engaged in family activity more frequently. A high level of engagement in physical activity and in family activities was related to high levels of self-efficacy for healthful eating. Thus, adolescents with high levels of physical activity and high levels of self-efficacy related to healthy nutrition had lower BMI percentiles. The researchers suggest that more research is needed on self-efficacy and its interaction with physical activity and healthful eating as predictors of adolescent weight status. Future interventions and preventative measures should focus on the interactive nature of these factors.

General Self-Efficacy Scale

Due to the influx of interest in general self-efficacy, many researchers have begun to develop inventories to tap into general self-efficacy beliefs. One of the most common scales is The General Self-Efficacy (GSE) Scale, developed by Jerusalem and Schwarzer in 1981, used to assess an individual's general sense of perceived self-efficacy. This 10-item scale is designed for adolescents and adults, twelve years and older, and has been shown reliable and valid for two decades with Cronbach's alphas ranging from 0.76 to 0.90, a large majority of which were in the high 0.80s (Jerusalem & Schwarzer, 1993). While various language versions have been developed, the English version of the General Self-Efficacy Scale was created in 1993 by Schwarzer and Jerusalem. All versions have been shown reliable and used by many researchers.

In one study, Jerusalem and Schwarzer (1992) found high perceived self-efficacy was positively related with the internal attribution of success. They also found that people with high levels of general self-efficacy were less affected by experiencing failure. Other studies have described how general self-efficacy is related to other psychological states and traits. Mainly two conclusions can be drawn from these findings. First, self-efficacy seems to be positively

correlated with positively valued characteristics, such as self-control, optimism, self-esteem, satisfaction, achievement, motivation, improved adjustment capabilities, and the ability to appraise a stressful situation as a challenge rather than a threat. Second, in comparison, self-efficacy can be negatively correlated with negative psychological states and traits, such as loneliness, anxiety, shyness, low self-esteem, depression, pessimism, and helplessness (Luszczynska, Gutierrez-Dona, & Schwarzer, 2005). Because of these correlations with self-efficacy, the overall functioning of an individual may be determined.

Schwarzer and other researchers gathered evidence from five additional countries regarding the relationship between general self-efficacy and human functioning (Luszczynska, Gutierrez-Dona, & Schwarzer, 2005). The General Self-Efficacy Scale was completed by respondents in 5 countries, including Costa Rica, Germany, Poland, Turkey, and the United States of America. Similar findings of previous research pertaining to the correlation between personality traits and general self-efficacy were found. Although differences were seen between cultures, the overall trends were similar to previous research. Limitations of the study included that the subsample was not representative of the country. The role of culture and socioeconomic status were not controlled, which could have led to biases. In conclusion, the research further indicated that the General Self-Efficacy Scale is connected to many psychological constructs that pertain to function (Luszczynska, Gutierrez-Dona, & Schwarzer, 2005).

Social Support Questionnaire

Researchers are also interested in the area of social support and finding ways to achieve reliable measures with an assessment tool. Sarason, Levine, Bashman, and Sarason (1983) developed The Social Support Questionnaire (SSQ). Reliability was found to be moderately high with this test; however, in 1987, Sarason, Sarason, Shearin, and Pierce reported that lengthy

assessment tools can be a barrier to gathering information. Therefore, these researchers developed The Social Support Questionnaire Short-Form (SSQSR). Research was conducted to determine if differences existed between the SSQ and the SSQSR. No significant differences existed between these questionnaires. Cronbach's alpha for internal reliability is 0.97. Thus, the short-form has been shown to be reliable and valid.

Social Support & Self-Efficacy

There is evidence that social behavior, personal adjustment, and health maintenance can be greatly influenced by a person's access to a supportive group. Social support is the availability of people to whom one can rely on, people who care, who value and who love the individual (Sarason, Sarason, Shearin, & Pierce, 1987). While these factors can be directly related to self-efficacy, the role of self-efficacy and social support has not been studied thoroughly among adolescents. Yet, researchers have found that adolescents have increased resilience to stress when they have available family supports (Goldstein & Brooks, 2005). Thus, children who are better able to be resilient have higher levels of self-efficacy. The following studies further describe the importance of social support in a youth camp setting.

Researchers Walker, Gately, Bewick, and Hill (2003) examined the change in body image, self-esteem, and worries of obese adolescents who attended a weight-loss camp. Fifty-seven campers were given a test of self-esteem, worries, and body shape preferences at the beginning and end of camp. These tests confirmed a poor psychological state in a number of obese adolescents. During the 28 days, campers lost weight and showed a significant positive correlation between BMI and psychological state. The camp improved the campers' psychological state, which was significantly related to the degree of weight loss. However, some limitations were present because the study was not randomized. Also, researchers were unable to

determine which parts of the camp program were responsible for the improvements. Despite these limitations, the researchers suggest that there are many psychological benefits associated with camp participation and weight loss (Walker, Gately, Bewick, & Hill, 2003).

In a follow-up study conducted by Holt, Bewick, and Gately (2005), children's perceptions of attending a weight-loss camp in the United Kingdom were researched. Fifteen children were interviewed and the results indicated that both positive and negative elements surfaced from their camp experience; however, the positive elements outweighed the negative elements of homesickness and dietary concerns. Three factors, which were enjoyment, support from peers and staff, and choice of activities, were reported as the positive components of the camp experience. On the other hand, these responses were given by individuals attending a reunion camp (Holt, Bewick, & Gately, 2005). Campers who had a negative camp experience may not have attended this reunion, causing bias to the results. However, in hopes of creating reliable data, the researchers sampled a range of campers who both had positive and negative experiences at the camp. The researchers suggest that their findings indicate a need for future research pertaining to the development of appropriate weight-loss interventions for children but while also suggesting that incorporating supportive staff, giving choices, and having enjoyable activities in adolescent obesity treatment could prove more positive results (Holt, Bewick, & Gately, 2005).

Conclusion

A person's motivation to modify his or her lifestyle is the most important factor for successful treatment of obesity (Gilchrist & Zametkin, 2006), which can be greatly influenced by family and peer support and involvement. In order to participate in an activity, an individual needs to believe that he or she can succeed in that activity. Self-efficacy theory states that if a

person believes he/she can be successful in a behavior, he/she will be more likely to engage in that occupation. However, overweight and obesity can cause reduced participation in activities, causing decreased feelings of acceptance and self-worth. Research has found that the most successful weight-loss interventions combine diet, exercise, and behavior adaptation, in addition to social support (Epstein & Myers, 1998). Thus, the researchers of this study believe that in order to promote meaningful and purposeful occupations in obese adolescents' lives, these individuals must experience social support and possess high levels of self-efficacy.

Chapter 3: Methodology

Study Design

A mixed methods approach was chosen for this study because it allowed the researchers to obtain both qualitative and quantitative data. A qualitative method was well suited for this study because it allowed the researchers to understand the participants' self-efficacy, self-perceptions, and general feelings of self-worth in relation to adolescent obesity. A quantitative method was appropriate for this study because it allowed researchers to obtain discrete numerical data pertaining to participants' general self-efficacy, which supported the themes found through qualitative analysis.

Quantitative research methods utilized the use of a questionnaire generated from the General Self Efficacy (GSE) Scale and the Social Support Questionnaire (Short Form) (SSQSR). Created by Jerusalem & Schwarzer in 1981, the 10 item GSE Scale was created to assess individuals' general sense of perceived self-efficacy after experiencing stressful life events (Schwarzer, 2009). The SSQSR includes 7 items and was developed by Irwin Sarason, Barbara Sarason, Edward Shearin, and Gregory Pierce (1987) to assess individuals' level of social support. These questionnaire items generate data that allows researchers to recognize individual participants' perceived self-efficacy and social support.

The language of the questions and statements on the GSE Scale and SSQSR were adapted to be more age-appropriate for adolescents ages 11 to 17 years. The statements from the GSE Scale and the SSQSR were combined into one form. Statements taken from the SSQSR included numbers 2, 4, 7, 10, 14, 16, and 17 and statements taken from the GSE Scale included numbers 1, 3, 5, 6, 8, 9, 11, 12, 13, and 15 (see Appendix A).

Qualitative research methods were facilitated through the use of focus group interviews. Focus groups provide powerful interactions with participants to provide researchers a window into how others think and talk, which increases researchers' understanding of a particular reality or phenomenon. Focus groups provide immediate feedback about how participants view a particular phenomenon; this bridges gaps in information and expands ideas about how people respond to life situations. In addition, due to the fact that focus groups open the lines of communication and allow interactive dialogue, focus groups are an appropriate method for data collection when the study focuses on sensitive topics (Morgan, 1998). Thus, focus group interviews were appropriate medium to acquire qualitative data in this study.

A semi-structured interview format allowed the researchers to ask participants a series of five open-ended questions (see Appendix B), facilitating participants to elaborate and generate open discussion within a group. Researchers moderated the focus group discussion and discretely probed for further responses while maintaining an atmosphere through which participants could expand their ideas. An audio recorder was used during each group interview session to assist the researchers in obtaining complete and accurate responses. Maintaining trustworthiness of the participants' responses prevents researcher bias during data analysis and increases the overall integrity of the study (Krueger, 1998).

Rationale for Selection

The researchers used a phenomenological approach to identify the relationship between social support and perceived self-efficacy in overweight and obese adolescents. Phenomenology focuses on the perspective of the individual in relation to personal experience, and through the use of qualitative methods, such as interviews, more personal, "deeper" information may be obtained. It recognizes the importance of personal perspectives, interpretations, and meanings

(Lester, 1999). To be sensitive to the fact that personal perspectives, interpretations, and meanings differ between males and females, genders were separated during the focus groups. The researchers hoped that by separating the male participants from the female participants, possible feelings of discomfort and anxiety resulting from the presence of the opposite gender in such an intimate discussion would be eliminated.

In reference to this study, the phenomenological approach was expected to assist the researchers in obtaining participants' various perspectives regarding social support, social functioning, self-esteem, and overall self-efficacy, as these factors were believed to be interrelated with the participants' weight.

Participants

All participants were recruited from a weight-management camp located in the Midwest. Participants, both male and female, were between the ages of 11 and 17 years of age. The camp enrolled 32 campers; 9 stayed for two weeks and 23 stayed for the four week camp session. Researchers allowed the maximum number of campers between the ages of 11 and 17 years to complete the adapted GSE Scale combined with the adapted SSQSR questionnaire.

Prior to this study, parental consent forms (see Appendix C) were completed by the parents of the research participants for both the questionnaire and the focus group. Random selection of the parental consent forms were used to obtain a total of 13 campers to participate in the focus group interviews. There were 7 female participants selected and 6 male participants selected to participate in the focus groups. This random selection only applied to the focus group interviews.

Sampling Methods

A convenience sample was used to obtain participants for this study. All subjects were enrolled at a weight-management camp and were available for this particular study. Focus group participants were randomly chosen by the researchers on the second day of camp after participants finished the questionnaire. All participants represented overweight or obese teenagers with weight control issues.

Context of Study

This study took place at a weight-management camp. Research questionnaires and interviews took place in a conference room located on site. A structured camp experience was provided for all campers, as there were many activities and social events that campers were expected to attend on a daily basis. The following outline is considered to be a typical day at camp:

Morning:

Breakfast at 8:00

Activity Stations:

Three groups of campers rotate among three different activities:

1. Education (45 minutes/day)
2. Movement (swing dancing, kick boxing, etc.)
3. Miscellaneous Activities (field time, lake time, ropes course, goal setting, and cooking classes)

Afternoon:

Lunch

Pool Time

Rest Hour

Gym Hour (badminton, hand ball, and prison ball)

Group Exercises (balance, core strength, upper extremity strength, and coordination)*

**Takes place every other day*

Evening:

Dinner

Specialty Activities (mountain biking, drama, arts and crafts, and dance)

Shower Hour

Evening Social Program

The directors of the camp choose the activities that campers participate in with the intention of providing a diverse, well-rounded experience by addressing the physical, emotional, and psychological needs of each individual camper. Creating new friendships is a main focus, as is the development of new, health-promoting habits and routines (Tut Gramling, personal communication, 2010).

Instrumentation with Validity and Reliability

The validity and reliability of this research project was enhanced by proper instrumentation. The questionnaire included adapted items from the GSE Scale and adapted items from the Social Support Questionnaire (Short Form) (SSQSR). The SSQSR, developed by Sarason, Sarason, Shearin, and Pierce (1987), has good test-retest reliability. The Cronbach's alpha for internal reliability was 0.97. The GSE Scale, developed by Jerusalem and Schwarzer in 1981, is used to assess an individual's general sense of perceived self-efficacy. The 10-item scale is designed for adolescents and adults, twelve years and older, and has been shown reliable

and valid for two decades with Cronbach's alphas ranging from 0.76 to 0.90, a large majority of which were in the high 0.80s (Jerusalem & Schwarzer, 1993). The researchers made adaptations to both the SSQSR and the GSE Scale in order to make the questions user-friendly and applicable to the adolescent population. Cronbach's alpha was repeated to check the reliability of the adapted survey.

The focus group questions were designed to encourage children to share their views of social-support. Adapted questions from the SSQSR were reintroduced throughout the interviews in order to prompt conversation. The researchers believed this would facilitate more open communication creating more reliable results that are free from bias. Studies that utilize focus group interviews have been shown to be trustworthy when used consistently across different researchers and research projects (Creswell, 2009).

The researchers ensured the accuracy of the study findings through the use of a variety of different strategies. The researchers examined evidence from the various sources and, through literature review and analysis, built a justification for themes portrayed from the perspectives of the participants. Follow-up interviews were used as a strategy to determine the accuracy of the study's qualitative findings and to determine the consistency of the participants' responses. The researchers spent a total of three days at the weight-management camp working with the study's participants obtaining research observations and data to develop an in-depth understanding of the phenomenon under study.

Final analysis and debriefing took place among the researchers and their fellow peers and committee chair members, and bias and negative or discrepant information pertaining to the researchers' data was discussed openly and honestly to the reader. Creswell (2009) states that

these strategies have been confirmed to maintain and enhance trustworthiness and reliability within qualitative research.

Procedures

After initial data collection for the literature review, the internet was used to seek out weight-management programs in the Midwest. Weight-management camps were found and contacted via electronic mail. A weight-management camp located in the Midwest responded and demonstrated interest in collaboration. The camp director indicated she is an occupational therapist and an advocate for weight-management programs. She provided information for the literature review regarding her experience with adolescent obesity and its effect on occupational performance. After committing to participating in research, meeting times were set up for questionnaire administration and focus group assembly.

The researchers drove to the weight-management camp and assisted with check-in on the first day of camp. This provided an opportunity for the researchers to introduce themselves to staff members and to build rapport with adolescent campers that became participants in the research study. During check-in, the adolescents' parents completed consent forms (See Appendix C) and prior to the administration of the GSE Scale and SSQSR, minor assent forms (See Appendix D) were completed. The questionnaires were coded using alpha-numeric coding. Therefore, questionnaires were not anonymous, but confidentiality was maintained. This allowed researchers to match participants' pre- and post-questionnaires during data analysis. Campers, who were between the ages of 11 and 17 years of age and who provided a parental consent form and minor assent form, each completed a questionnaire in a activities room after breakfast on the first full day of camp. Upon completion, the questionnaires were collected by the researchers.

Morgan (1998) indicated that recruiting prospects who are willing to participate in discussion during the focus group is crucial for leading an effective focus group that provides in-depth perspectives about the topic of obesity. The researchers placed all questionnaires in a box, and seven female participants' forms were randomly selected from the box by the researchers. These seven female individuals participated in the focus group. All six males were selected to participate in a separate focus group discussion. The camp director built time into the camp's daily schedule that allowed the researchers to conduct the focus group and allowed the youth to attend.

The two focus groups took place concurrently in private rooms on the camp grounds. These locations were secluded to ensure privacy and confidentiality during the focus groups. It was stressed to the participants that confidentiality was critical, and that what was discussed in the room among the participants was not to be discussed following the focus group meetings. Seven girls participated in one focus group and five males participated in the other focus group, due to the fact that one male declined to participate. When conducting the focus groups, the interviewers and participants sat in a circular chair arrangement and the sessions were audio recorded for future data transcription. Upon completion of the female and male focus groups, all questionnaires and focus group materials, including field notes, were collected and the researchers departed from the camp. Information from the pre-test questionnaires was analyzed and the information from the focus groups was transcribed verbatim by a transcriptionist. Field notes and the transcription sheets were used to code themes and sub-themes by the researchers.

Four weeks later, the researchers returned to the weight-management camp on the second to last day of camp to administer the post-test questionnaire to the same group of individuals who completed the pre-test questionnaire. Participants received the questionnaire that was coded

alpha-numerically so the pre- and post-questionnaires could be matched to the correct participant. After the questionnaires were collected, a focus group of the same seven female participants who previously participated in the focus group were directed to the same private room for an additional discussion on social support. Similarly, the same five male participants from the previous focus group and the one male who originally declined participated in the focus group were directed to the same room that was previously used for more discussion. These focus group discussions were audio recorded for future data transcription. After collection of questionnaires, field notes, and focus group materials, the researchers departed from the camp. Information from the post-test questionnaires was analyzed and the information from the focus groups was transcribed and coded.

All information and data collected from this study was secured and stored in a locked filing cabinet on the campus of Grand Valley State University for at least three years.

Data Analysis Plan

After receiving counsel from the Grand Valley State University Statistical Consulting center, as well as advice from the chairperson of the researchers' thesis committee, a plan was made to analyze the data from this study. For the quantitative portion of the data, the statistical program PASW 17.0.2 was used to analyze and report the frequencies, descriptive statistics, and the demographics. For the following research questions, various analyses were utilized.

1. How much and what kind of social support is available to overweight and obese adolescents at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?
 - For research question 1, researchers analyzed the 7 statements from the SSQSR portion of the questionnaire. This data was analyzed using a two-

sample independent t-test to test the differences in gender compared to the mean score on the social support statements on the questionnaire.

Correlation analysis was used to compare quantitative variables to the mean scores from the social support statements.

2. What is the overall level of self-efficacy among overweight and obese adolescents at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?
 - For research question 2, researchers analyzed the 10 statements from the GSE Scale portion of the questionnaire. This data was analyzed using a two-sample independent t-test to test the differences in gender compared to the mean score on the social support statements on the questionnaire. Correlation analysis was used to compare a quantitative variable to the mean scores from the self-efficacy statements.
3. Is there a relationship between self-efficacy and social support at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?
 - For research question 3, researchers analyzed the 10 statements from the GSE Scale and the 7 statements from the SSQSR portion of the questionnaire. This data was analyzed using a regression analysis to check for relationships between social support and self-efficacy, age and gender. Interactions between variables were also examined.
4. How does a weight-management camp alter adolescents' perceptions about weight-management (i.e. participation in occupations, self-efficacy, and social

support)? Are there differences between ages? Are there differences between genders?

- For research question 4, researchers analyzed the mean scores from the pre- and post-questionnaire statements from the GSE Scale using a paired t-test.
- For research question 4, researchers analyzed the mean scores from the pre- and post-questionnaire statements from the SSQSR Scale using a paired t-test.
- For research question 4, two-sample independent t-test was used to check the differences between age and gender in relation to social support and self efficacy.

For the qualitative portion of the data, a standard thematic analysis of the focus group interviews was coded with open, axial, and final selective coding. This allowed for similar responses to be organized together to develop related themes. Before coding, data from the thematic analysis was decontextualized by removing dialogue from the participants' responses during focus group interviews. This prevented researcher bias when generating themes.

Chapter 4: Results

Quantitative Data Analysis

Quantitative data was collected through the use of the combined survey consisting of modified questions taken from the GSE Scale and SSQSR Scale. The results of this analysis are as follows:

Demographics

At the time of this study, 23 participants were present at the camp; each staying for 4 weeks. One participant left after 3 weeks, so her information collected at the pre-test was not used. Sixteen participants were girls and 6 participants were boys. The mean age for all participants was 13.8 years of age, with girls at 13.9 years and boys at 13.5 years. The racial demographics of the participants were as follows: 15 participants were Caucasian, 4 were Hispanic, and 3 were African American. Due to the small number of minority participants, race was not a variable tested in data analysis. Refer to Table 1.

Table 1

Participant Demographics

Measures		(n)	Mean Age, years
Gender	Male	6	13.5
	Female	16	13.9
	White	African American	Hispanic
Race or Ethnicity, n (%)	15 (68.18)	3 (13.63)	4 (18.18)

Note. The table represents information regarding participant gender, age, and race or ethnicity.

To examine the reliability of the modified SSQSR and the modified GSE Scale, researchers utilized Cronbach's alpha. These surveys were modified to accommodate the younger participants and statistical analysis was completed to determine the Cronbach's alpha for this study. In the researchers' initial literature review, Cronbach's alpha original scores for the SSQSR and for the GSE Scale were found to be 0.97 and 0.76-0.90, respectively. The modified SSQSR pre-test survey was found to have a Cronbach's alpha of 0.884 and the modified SSQSR post-test had a Cronbach's alpha of 0.823. The modified GSE pre-test had a Cronbach's alpha of 0.741 and the modified GSE post-test had a Cronbach's alpha of 0.752. Cronbach's alpha scores found by the researchers are similar to the original scores, confirming that these scales were reliable for use in this study.

Social Support at the Beginning of Camp

Researchers aimed to find out how much and what kind of social support was available to overweight and obese adolescents at the beginning of a weight-management camp. Also, if there were differences between the age and gender of the participants.

A correlation analysis was used to check for differences in age because age and social support are quantitative variables. Results showed that there is not a significant difference due to age ($r = -0.012$, $p = 0.959$) regarding the kind of social support that was available to overweight and obese adolescents at the beginning of camp.

A two-sample independent t-test was used to test for differences in social support due to gender. Social support is a quantitative variable and gender is a categorical variable. For a two sample independent t-test data must come from approximately normal populations. To check this, a Shapiro-Wilk test of normality was completed (females, $p = 0.33$ and males, $p = 0.175$).

Since the p-values are >0.05 , normality can be assumed. Results showed that there was not a significant difference due to gender in relation to social support ($p= 0.692$).

Level of Self-Efficacy at the Beginning of Camp

Researchers aimed to determine what the overall level of self-efficacy among overweight and obese adolescents was at the beginning of a weight-management camp and if there were differences between participants of different age and gender.

A correlation analysis was used to check for differences due to age and self-efficacy. Results showed that there was not a significant difference due to age ($r=0.010$, $p=0.965$) in relation to the overall self-efficacy of overweight and obese adolescents at the beginning of camp.

A two-sample independent t-test was used to test for differences due to gender. A test of normality was assessed through a Shapiro Wilk test (females, $p= 0.292$ and males, $p=0.679$). Due to the fact that the p-values are >0.05 , normality can be assumed. Results showed that there was not a significant difference due to gender ($p=0.288$) in relation to the overall self-efficacy of overweight and obese adolescents at the beginning of camp.

Relationship between Self-Efficacy and Social Support at the Beginning of Camp

Researchers aimed to find if there was a relationship between self-efficacy and social support at the beginning of a weight-management camp and if age and gender affected this relationship. A regression analysis was completed to check for relationships between variables (Age, Gender, Self-efficacy, and Social Support). The dependent variable is the SSQSR score at the pre-test. The independent variables are the GSE score at the pre-test, Age, and Gender. A residual analysis was completed to assess conditions of normality and constant variance. Since

residual plots were random and a histogram of the residuals displayed a normal curve, the conditions were met.

The only significant interaction was between GSE score at the pre-test and age ($p=0.035$). All interactions were checked between Age, GSE score at the pre-test, and Gender. Gender ($p=0.948$) was not significant. There is a relationship between an individual's GSE score at the pre-test and his/her age, which predicts an individual's SSQSR score at the pre-test. Refer to Table 2.

Table 2

Correlation Coefficients of Self-Efficacy and Social Support

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18.506	8.425		-2.197	.043
	GSE_Pre	.719	.276	3.955	2.607	.019
	Age	1.370	.599	3.652	2.286	.036
	Gender	.024	.354	.013	.067	.948
	GSEpre_age	-.045	.020	-5.147	-2.310	.035

a. Dependent Variable: SSQSR_Pre

Note. The regression analysis revealed no significant differences due to gender; however, an interaction effect was found between pre-scores of GSE and age on the SSQSR sub-scale.

Changes in Social Support and Self-Efficacy Following Camp

Researchers aimed to examine adolescents' perceptions of social support and self-efficacy at the end of camp. A paired t-test was used to determine whether or not change occurred in adolescents' social support between the beginning and the end of camp. Normality

was shown by normal distribution of a histogram. A change variable was created for SSQSR (Post-Pre).

Results showed that there was a statistically significant change in adolescents' social support between the beginning and the end of camp ($p < 0.001$). In this study, the average change in social support scores was 0.30 with a standard deviation of 0.515. (See Figure 1).

Figure 1. Changes in Social Support

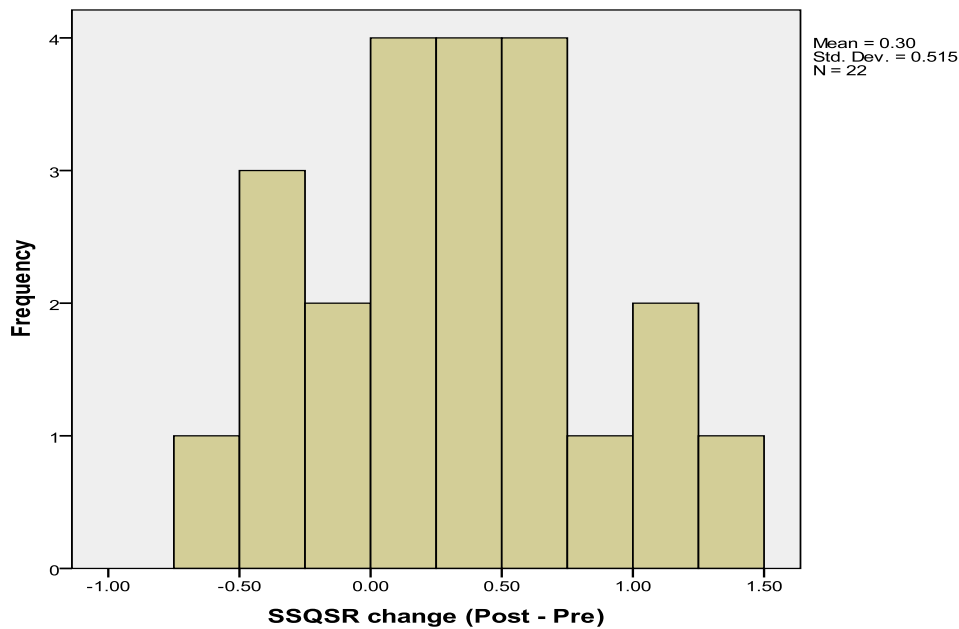


Figure 1. This is the average change in social support scores from pre-test to post-test.

To determine whether or not change occurred in adolescents' self-efficacy between the beginning and end of camp a paired t-test was used. A change variable was created for GSE (Post-Pre). Results showed that self-efficacy improved between the first day of camp and the second to last day of camp ($p = 0.012$). In this study, the average improvement in self-efficacy scores was 0.32 with a standard deviation of 0.302. See Figure 2.

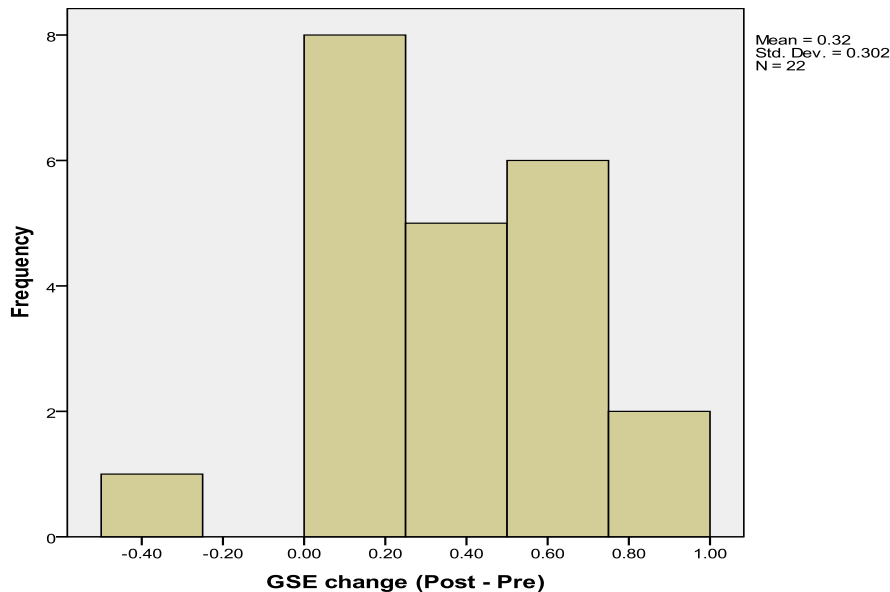
Figure 2. Changes in Self-Efficacy

Figure 2. This is the average change in self-efficacy scores from pre-test to post-test.

A two sample independent t-test was used to check for differences in age and gender in relation to social support and self-efficacy. Participants were categorized into a younger age group (11-13 y/o) and an older age group (14-17 y/o). Normality conditions were checked and determined to have been met. Results showed that there was not a significant difference between age ($p=0.114$) and gender ($p=0.223$) on self-perceptions pertaining to social support and personal health management. Self-efficacy measures were also not significantly influenced by age ($p= 0.092$) or gender ($p= 0.074$). Therefore, changes in social support and self-efficacy scores were not due to age or gender variables.

Change in Number of Friends

Researchers aimed to find if there was a change in number of close friends reported at the beginning of camp when compared to the number of friends reported at the end of camp, and if this change was significant. A paired t-test was used to analyze this data.

Results showed that the number of close friends increased from the beginning and the end of camp ($p=0.016$). In this study, the mean number of close friends at the beginning of camp was 5.71 and the number of close friends at the end of camp was 7.43. See Figure 3.

Figure 3. Number of Close Friends

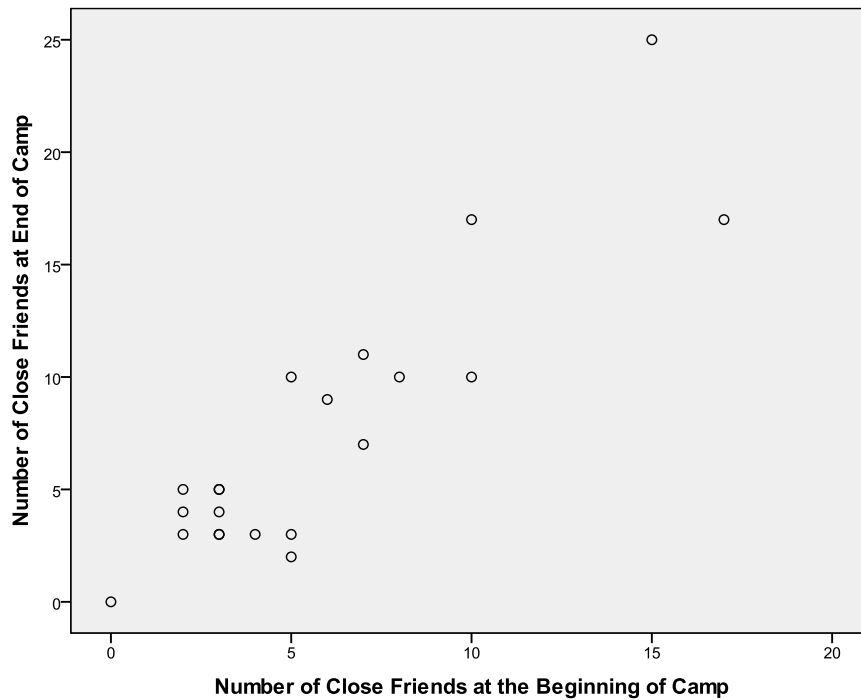


Figure 3. The number of close friends at the beginning of camp compared to the number of close friends at the end of camp.

Qualitative Data Analysis

To enhance the results of the quantitative data, qualitative data was also collected. Four focus groups were conducted, two groups at the beginning of camp, and two groups at the end of camp. One group was made up of seven female participants at both the beginning and the end of camp. The other group was made up of five male participants at the beginning of camp and six male participants at the end of camp.

Data was analyzed using a thematic coding approach. Researchers identified emergent themes and patterns in the data. The three researchers independently reviewed the interviews and field notes and hand coded the data segments into key thematic codes. Four themes emerged with multiple sub-themes within each theme. The researchers met to discuss and create thematic codes and agreed on sub-themes that were developed. All comments were synthesized and discussed until a consensus of a theme was developed, ensuring trustworthiness of the analysis. The objective was to identify themes in the data that characterized social support, self-efficacy, and weight-management in relation to healthy lifestyles.

Themes

How Support Is Shown

Participants discussed the individuals in their lives that they felt provided adequate social support in relation to weight-management, school, and other aspects of life. Two subthemes emerged throughout the discussion, which included family and friend support. Participants also discussed the differences in how family and friends provided support and the various types of support provided.

Family Support.

The term *family*, throughout the focus groups, encompassed parents and siblings. Throughout the discussion it was determined that there were three general ways through which family provided social support, including: physical touch, words of encouragement, as well as showing concern for success in life activities (i.e. academics and sports participation). Some of the comments exemplifying this support are:

One male participant gave the example of attending a funeral and feeling sad. He described how his mom comforted him. “My mom helps me out when, like when you’re feeling

down and then they kind of just like hold you and hold your hand through the problem and help you solve it sometimes. Whatever the problem may be.”

Another participant acknowledged that he is fortunate to receive financial support at times.

Like I'm in sports. And my mom, she pays for the sports and also she has to give me a ride there every time I have practice or a game. She doesn't have to. She could just say, 'walk' or something.

A female participant reflected on support that parents provide in regards to academics.

Other participants expressed that they had similar experiences to the example provided by the female participant. “She (mom) is always emailing my teachers and asking, ‘How is she doing in class? Is she listening and paying attention in class?’”

A second female participant described how proud her parents were to see the progress she had made on “visitors day” at the camp. As supported by the following quote, the participant felt as though her parents would provide continued support following camp. “My mom said that when I get home we're going to be cleaning out cupboards and going shopping...getting all of the right foods.”

Friend Support.

Participants discussed their reliance on friends, both at the weight-management camp and at home. Participants indicated that the new friendships made at camp formed a network of new people who understand the challenges associated with being overweight. Friends from home showed support by being compassionate, sharing encouraging words, and sharing similar interests.

One participant referred to new friendships formed at camp. “It’s just going to be so much easier to call one of the friends that you made here (camp) because they’re probably going to go through the same things that you are.”

Another participant explained that there were some situations in which she turned to friends for support before turning to family members. “When I’m angry I won’t go to my parents, I’ll go to my friends. I’ll text my friends or I’ll call them.”

A male participant stated that he did not have a lot of family support. He described how he utilized community resources to gain support. “A teen center is just basically where teens hang out. They can do homework and play video games. They also do activities and they go on field trips a lot.”

Behavioral Changes of Participants Following Camp

Participants discussed three areas for which they hoped to implement behavioral change following camp: implementing goals pertaining to daily routines, awareness of nutrition, and incorporating exercise into routine. By implementing new knowledge and experiences from camp, the participants aimed to achieve a lasting healthier lifestyle.

One participant explained how concepts learned at camp might lead to changes in common routines at home.

At home I play video games and watch TV and I grab like chips or something and I’ll go get healthier chips, pretzels or something. I’ll go and I’ll eat the serving size and then afterwards think, ‘Oh I want more of those because I’m going to continue to watch TV.’ So now I’ll be like, ‘Wait, I already had a snack...I can watch TV without anything.’

Another participant learned that keeping goals reasonable may make them easier to achieve.

That’s also the thing they’re teaching us is to get used to making little goals. Because instead of saying, ‘Oh I’m going to lose like three pounds today or this week.’ That’s not possible. You have to break it down into smaller steps.

A male participant acknowledged that he could control his actions and choose to engage in more vigorous activities rather than sedentary ones. “If we have a choice between arts and crafts and kickboxing, take the other, the more active one.”

In regards to social media and advertising, one participant explained that he has become more aware that food vendors and advertisements are trying to target his mind. He described it as “forceful advertising.” “And there is two things that I wrote down in my notebook in bolded letters. ‘Get rid of your food thrill and real hunger comes from your stomach, not your mind.’”

Feelings and Perceptions of Weight-Management

Participants expressed that self-perceptions, confidence to engage in social and physical activities, and desire to engage in everyday occupations were enhanced. Participants’ feedback indicated that the camp experience was the primary catalyst for change in feelings and perceptions regarding these aspects of everyday life.

Similar to statements made by several participants, one participant indicated that his self-esteem and confidence had increased. His story demonstrated this increase. “This week I asked someone to dance; and to be honest with you, I wouldn’t have ever done that if this was school... Now I got the self-esteem and confidence of someone who’s really active and charismatic.”

Another participant showed how his self-perception had changed since the beginning of camp. “My metabolism is at its highest. I look better. I feel better about myself.”

One male participant explained how he noticed positive changes in his physical capacity to tolerate exercise.

We’ve been getting a good two hours of play time during the day. When I first got here I got winded after a couple of minutes, but as the days went by I found it more easy to do so. I was breathing well while I was doing my running and stuff. I’m burning calories better than ever.

A participant who had lost forty-pounds over the course of four weeks shared the following.

I've lost forty-pounds...the counselors here pushed me to do my best and they pushed me to excel. I feel really good about that because I have more motivation and drive. And the other thing I like about this camp is, I'm going to go home and be like, 'Yeah, you can eat that...just in moderation, in portioning. That is what I love about it.'

Similarly, another participant described how the camp experience gave individuals the knowledge needed to make healthier decisions. "This is pretty much like education. The kids call it a weight loss management camp or a weight loss camp. It's more of a teaching camp; the weight loss just comes with it."

Barriers to a Healthy Lifestyle

Participants identified barriers to maintaining a healthy lifestyle during camp and at home. Three subthemes that emerged include lack of social support, harassment from parents and peers, and not meeting peer expectations.

Some participants reported positive forms of support, such as sharing gym memberships with family or buying healthy foods together. In contrast, other participants described less supportive environments at home and at school. One female participant explained,

My dad compares me. My mom does that too. I hate that because I am like him and he hates it. And he's with the whole, 'You're lazy or you're stupid and that is why you can't do it. Pick one.'

Another participant expressed her frustration with the food choices available at home.

He (dad) said, 'Oh you're learning to eat healthy. You need to teach us to be healthy.' I'm like 'What? Even if I did, you'd still have a giant box of cookies in the cupboard.' It's like, 'Well, you're being helpful.'

In regards to harassment from peers, one male participant described the frequent aggravation that occurred at school.

A lot of the kids at my school, they know it gets to me, so what they purposely do is they go up to me and they ask me how much I weight or what size clothes I wear. And they do it on purpose and they do it almost every day.

Another female participant elaborated on the expectations from peers at school, especially in regards to participation in physical activity.

So like in gym class they'll be like, 'Oh [name], you're on this team.' And then all the kids on my team are like, 'Oh, darn it.' And so that doesn't really make me feel good. But like I ignore it, but it makes it hard for me to exercise when I'm already going to be bad at it.

Chapter 5: Discussion

Question 1: How much and what kind of social support is available to overweight and obese adolescents at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?

The literature supports the idea that social support influences adolescents' perceptions of weight-management and influences choices regarding healthy lifestyles (Quinlan, Hoy, & Costanzo, 2009; Allon, 1976; Goldstein & Brooks, 2005). The level of reported social support among participants varied at the beginning of camp. However, results from the quantitative testing showed that there was not a significant difference in social support due to age or gender.

While some participants reported receiving adequate social support at home, other campers reported a lack of social support at home. Some participants reported that they lean more on their friends for support rather than family members, while for others the reverse is true. At the end of camp, however, the majority of participants reported an increase in social support due to the new friendships that were formed while at camp. Quantitative analysis showed that participants' reported number of close friends increased between the first day of camp and the second to last day of camp. This finding was found to be statistically significant and suggests that the camp environment promoted friendship development due to participants sharing similar interests and personal characteristics (i.e. weight).

Aside from the social support received from new friendships formed at camp, themes from the discussion suggested that family support received at home has an impact on the level of social support reported by participants. Participants reported that their family members showed support by providing physical touch, words of encouragement, financial support, and by showing concern for participants' interests. Their friends, however, showed support by sharing similar

interests, studying together, and engaging in similar social activities. Both family and friends may influence reported levels of social support, while lending support in different ways.

Participants indicated that their family could show more support regarding healthy lifestyle choices by stocking the fridge with healthy food, exercising together, or providing the financial means necessary to engage in hobbies and sports. The researchers believe it may be important to consider who is providing the social support and the various ways in which the social support is provided in order to better understand lifestyle choices regarding health.

Question 2: What is the overall level of self-efficacy among overweight and obese adolescents at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?

While there is a gap in the literature regarding self-efficacy and obesity among adolescents, there is extensive research pertaining to self-esteem, self-perception, and social functioning. The researchers believe these variables are components of self-efficacy. A robust finding in the literature states that self-esteem, self-perception, and social functioning are greatly impacted by overweight and obesity (Gibson et al., 2008; Nowicka et al., 2008; McCullough, Muldoon, & Dempster, 2009; Walker & Hill, 2009). Due to the fact that these variables are related to self-efficacy, it is reasonable to suggest that obesity does interact with self-efficacy. This particular study supports this assumption.

Gibson et al. (2008) found that children with higher BMI scores had lower levels of self-esteem, as well as decreased self-worth, social acceptance, athletic competence, and behavioral conduct self-esteem. Existing research by Walker, Gately, Bewick, and Hill (2003) found that individuals at a weight loss camp who lost weight had an increased psychological state at the end of camp. These researchers suggested that the change was due to camp participation and weight

loss. Quantitative data showed that age did not significantly influence participants' reported levels of self-efficacy. Gender also did not significantly influence participants' reported levels of self-efficacy. Similarly, during focus group discussions, researchers did not determine there was a difference in the comments made among participants of various ages and genders.

On-site weight testing revealed that each camp participant lost weight during the four weeks of camp. The researchers' quantitative analysis revealed that participants' level of self-efficacy improved between the beginning of camp and the last day of camp. Due to the fact that these qualitative and quantitative findings are in accordance with the literature, the researchers in this study propose that self-efficacy levels reported by participants may have increased as a result of a decrease in weight.

Question 3: Is there a relationship between self-efficacy and social support at the beginning of a weight-management camp? Are there differences between ages? Are there differences between genders?

After quantitative and qualitative analysis, researchers were able to affirm whether or not there was a relationship between self-efficacy and social support at the beginning of camp. When an individual's GSE score at the pre-test interacts with his/her age, the individual's SSQSR score at the pre-test can be predicted. Themes generated from qualitative analysis revealed a relationship at the conclusion of camp, as demonstrated by an increase in close number of friends and reported higher levels of self-esteem and confidence, as well as a greater desire to perform physical activity.

Overweight and obese male and female adolescents have been found to be more likely victims of bullying in comparison to healthy weight peers. In support of these findings, it is plausible that the social support provided at the weight management camp was one key factor in

supporting healthy lifestyle choices, as well as physical and psychosocial health. One study found that 50-70% of teenagers reported being teased for being obese (Walker & Hill, 2009). Overweight boys have been found to be at risk of being victims of teasing and of physical aggression by their peers. Girls, however, according to Gibson et al. (2008), are also at risk of peer victimization, but in a more relational rather than physical form; such as being purposefully excluded from social activities or social groups. As a whole, overweight male and female adolescents have been found to be more likely to be both the victims and perpetrators of bullying in comparison to their healthy weight peers. Throughout focus group discussion, the male participants spoke more about teasing and bullying while girls discussed being excluded from social activity.

Despite the fact that qualitative data did reveal gender differences in the relationship between social support and self-efficacy, quantitative data showed that age did not significantly influence the relationship between self-efficacy and social support. Gender also did not significantly influence the relationship between self-efficacy and social support. The researchers suggest that increased social support and self-efficacy may be a result of the positive interaction between social support and self-efficacy.

Question 4: How does a weight-management camp alter adolescents' perceptions about weight-management (i.e. participation in occupations, self-efficacy, and social support)?

After four weeks of camp, results showed that there was an increase in social support and self-efficacy among the participants. These quantitative and qualitative findings suggest that social support and self-efficacy may be important factors to consider in regards to weight management for obese and overweight adolescents. Participants reported an increase in the number of close friends between the beginning and end of camp. As previous research suggests,

there may be a positive relationship between individuals' number of close friends and reported level of self-efficacy.

During focus group discussion, participants described a perceived increase in abilities both physical and psychological in nature. Many participants described an increase in confidence as it relates to engagement in daily activities. Additionally, participants reported an enhanced motivation to exercise coupled with a desire to eat healthy and control food portions. According to Luszczynska, Gutierrez-Dona, and Schwarzer (2005), self-efficacy is positively correlated with valued characteristics, such as self-control, optimism, self-esteem, achievement, and the ability to appraise a stressful situation as a challenge rather than as a threat. In addition, literature reveals that engagement in physical activities is related to high levels of self-efficacy for healthful eating (Gamble, Parra, & Beech, 2009). The researchers of this study believe that self-efficacy is a key component to maintaining a healthy lifestyle because when participants feel that they will succeed in their endeavors they are more likely to participate in meaningful occupations, including weight-loss behaviors.

Recommendations for Further Research

The researchers recommend that more research be done with overweight and obese adolescents. A longitudinal study or further research at multiple weight-management camps may assist in the attainment of additional data that describes the relationship between social support and self-efficacy, ultimately enhancing researchers' understanding and means for future intervention. Additional weight-management camps or wellness programs could be designed using an organizational model and philosophy similar to this Midwest camp. Additional studies should then be conducted in pilot programs to evaluate the success of similar interventions among larger and more diverse populations of overweight and obese youth.

Research can also be implemented in contexts such as school systems, community youth programs, and local fitness organizations (i.e. YMCA). This research might aim to reveal what activities are most enjoyable and challenging for children and what activities are the most effective at enhancing weight loss results, more specifically, what activities support the development of self-efficacy. Research could also evaluate the success of educational components utilized by professionals leading wellness programs.

Not only should the physical elements of these programs be researched, but also the psychological aspects, including the effects of self-efficacy, self-esteem, coping skills, and depression. Research in these areas will help establish the importance of mental health in regards to weight loss. Further research could also be implemented in correspondence with Michelle Obama's "Let's Move" (2010) initiative, which is a proposal that focuses on fighting the childhood obesity epidemic. This program is engaging many sectors of society to impact the health of children by providing schools, families, and communities the tools needed to help children become more active, eat well, and become healthier. It is the researchers' hope that this research will assist in the development of intervention techniques that will increase the physical and psychological health of overweight and obese adolescents.

Implications for the Field, Practice, and Education

In regards to the profession of occupational therapy, this study's findings may present a potential emerging area of practice for occupational therapists. This research could assist occupational therapists and individuals from other health professions to develop more effective health and wellness programs for youth by viewing obesity and associated interactions holistically. By doing so, therapists can design programs to address concepts that are often overlooked by other weight-management programs. For example, the concept of the "just-right

challenge” is necessary to consider because promoting success in activity can in turn elevate an individual’s perceived level of self-efficacy and promote engagement in other activities both social and physical in nature.

Occupational therapists have the knowledge and skills to address the mental health aspects of obesity and health-related factors. As the director of the weight-management camp in which this study took place stated, overweight youth often hide in their hooded sweatshirts and try to be invisible in social situations. Occupational therapists can assist marginalized obese and overweight youth to develop the communication skills necessary to recognize social cues and to cope with the social stigmas related to obesity. The holistic and humanistic nature of occupational therapy can aid development and increase occupational performance, which will help overweight adolescents find meaning in everyday life. By maintaining this perspective, occupational therapists can focus on the physical, psychological, and social factors that contribute to and that are associated to obesity.

Occupational therapists can also address aspects of social functioning by educating individuals on topics such as social interaction, habits and routines, occupational balance, emotional regulation, and coping skills. By addressing these skills adolescents may be able to form stronger social networks, which may support healthy lifestyle behaviors. The researchers believe that in order to promote participation in meaningful occupations, these individuals must experience social support and possess high levels of self-efficacy.

Limitations

The researchers acknowledge limitations of this study. Primarily, the small and analogous sample of participants reduced the overall generalizability of the results found during the interviews.

The data from the GSE Scale and the SSQSR was gathered from participants through self-report. There may be bias if the participants intentionally or inadvertently provided misleading responses to the interview or survey questions. It is possible that some participants did not follow directions properly or misunderstood the interview or survey questions. Moreover, it is possible that participants attempted to achieve social approval through their responses on the self-efficacy and social support scales or during the focus group interviews.

There are few weight-management camps for youth in the Midwest. As a result, the researchers were restricted to using a convenience sampling method and the number of participants featured in this study was relatively small. Typically, it is difficult to acquire a diverse sample from convenience sampling methods and consequently, the small sample size and lack of diversity within the sample decreased the reliability of the study. Additional limitations of this study were the self-selected focus group samples, lack of follow-up procedures, and the inability to test for confounding variables related to the results of the study.

Participant demographics and other factors that could potentially influence the results of the study were considered after data analysis was completed. Some of the data found through quantitative analysis was shown to be insignificant. This may be due to the large number of females that were in the group and the lack of racial diversity among the participants. Due to this small sample size, a true relationship may be present; however, it was not found using the researchers' sample.

Conclusion

Childhood obesity is associated with increased health risks, such as decreased physical activity, decreased occupational performance capacity, and psychological and social deficits. The prevalence of obesity and related factors in young children emphasizes the importance of

understanding the interaction between physical activity, self-efficacy, and social support.

Researchers' qualitative data was supported by quantitative data and results showed that there was a significant relationship between self-efficacy and social support at the end of camp.

The analysis showed that participants' levels of self-efficacy and social support increased between the beginning and the end of camp. As participants' reported number of close friends and level of social support increased, reported levels of self-efficacy also increased. Areas of self-efficacy that were found to have increased were engagement in physical fitness, confidence in physical abilities, self-perceptions, and ability to generate and/or maintain peer relationships. Given these findings, and acknowledging that each participant at camp lost weight, it may be reasonable to suggest that social support and self-efficacy are important factors to be addressed to promote success in other weight-management programs. Increased knowledge of these factors may lead to more comprehensive studies involving the nature of social support, self-efficacy, and obesity, as well as the development of more effective programs for occupational therapists striving to reduce or prevent obesity among adolescents.

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APPENDIX A

Appendix A
Questionnaire

Response Format: 1 = Not at all true 2 = Hardly true 3 = Somewhat true 4 = Exactly true

Please Circle One Number

1. I can solve difficult problems if I try hard enough.	1	2	3	4
2. I have someone who I can depend on when I need help.	1	2	3	4
3. I can get what I want even if someone tries to stop me.	1	2	3	4
4. When I am really upset, I have someone who can cheer me up.	1	2	3	4
5. It is easy for me to stay focused and reach my goals.	1	2	3	4
6. I am confident that I can make the best out of a "bad" situation, even when it is a surprise.	1	2	3	4
7. I can count on friends and family to help me feel more relaxed when I'm under pressure or tense.	1	2	3	4
8. Thanks to my creativity, I know how to handle unpredicted situations.	1	2	3	4
9. I can solve most problems if I try my best.	1	2	3	4
10. I can count on my friends and family to help me feel better when I am down in the dumps.	1	2	3	4

11. I can remain calm when facing challenges because I can control my emotions.	1	2	3	4
12. When there is a problem, I can usually find more than one answer.	1	2	3	4
13. If I am in trouble, I can usually think of a solution.	1	2	3	4
14. I have someone whom I can trust with information that could get me in trouble.	1	2	3	4
15. I can usually handle whatever situation or challenge that comes my way.	1	2	3	4
16. People accept me, both my best and worst points.	1	2	3	4
17. My friends and family care about me, regardless of what is happening to me.	1	2	3	4

English version by Ralf Schwarzer & Matthias Jerusalem, 1993
I. G. Sarason, B.R. Sarason, & G.R. Pierce, 1987

Please Circle Your Answer to the Following Questions:

Gender: F M

Race: American Indian Asian African American Hispanic Pacific Islander White

Type of Schooling: Public Private Charter Home

Please Answer the Following Questions:

Age: _____

Number of Close Friends: _____

Number of Family Members Living in your Home: _____

Please Do Not Write In This Box

_____	_____	_____	_____
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APPENDIX B

Appendix B

Focus Group Questions

1. Think of the people that you look to for help. How do they show their support and show that they care about you during a difficult time?
 - a. What are the ways that your caregivers and/or friends show you that they care about how you perform in school?
 - b. How do your caregivers and/or friends support you in your hobbies and interests?
 - c. What do you think is the best way to show support and encouragement?
2. Do you look to your friends more often for social support or to your family members more often for social support?
3. When you leave camp, will you want to continue the good habits you learned at camp? If so, what will make you want to continue these good habits?
4. Who will help you continue the good habits you learned at camp? How will these individuals help you?
5. How do you think camp will help you? / How has camp helped you?

APPENDIX C

Appendix C

Parental Permission Form

Hello. Our names are Jenna Bastianello, Matt Epkey, and Katy McMullin and we are occupational therapy graduate students at Grand Valley State University in Grand Rapids, MI. Your child is invited to participate in a research study about the relationship of social support to self-efficacy in adolescents who are overweight and obese. We are asking that your child take part because your child is in the age group on which this study is focused. We ask that you read this form and ask any questions you may have before agreeing to allow your child to take part in this study.

The study: The purpose of this study is to identify the relationship of social support to self-efficacy in overweight and obese adolescents. Self-efficacy and social support have been identified as psychosocial determinants of physical activity and additional occupations that enhance overall health. Thus, this research aims to identify any relationship between social support and self-efficacy in adolescents who are overweight and obese.

If you agree to allow your child to take part, your child will be asked to fill out a 20-question survey. Your child will be asked to rate how much he or she experiences confidence to complete an activity and how much social support he or she is receiving. Your child may also have the opportunity to participate in group discussion. An example of the types of questions includes "It is easy for me to stay focused and reach my goals." The questionnaire will take about 15 minutes to complete and the interview will take about one hour to complete.

Risks and benefits: The risks in this study are that questions about obesity and social support are somewhat sensitive and may create some discomfort. We will approach participants so as to minimize this discomfort. There are no benefits to you or your child if he or she takes part in the study.

Compensation: There will be no tangible compensation to you or your child if he or she takes part in the study.

Confidentiality: The records of this study will be kept confidential, to the extent permitted by law. The survey will only ask for the child's gender and age, and will not include your child's name. It will not be possible to figure out your child's answers. Surveys will be kept securely for three (3) years after this study ends in a locked cabinet and office.

Voluntary Participation: Your child's participation in this study is completely voluntary. Your child may skip any questions he or she does not feel comfortable answering. Your decision whether or not to allow your child to participate will not affect your current or future relationship with Grand Valley State University or with Camp Endeavor. If you decide to allow your child to take part in this study, your child has the option of opting out of the survey, skipping any questions, or stopping at any time. You are free to withdraw your child at any time without affecting your relationship with the University or Camp Endeavor. The contacts for this study are Jenna Bastianello and Cynthia Grapczynski. You may reach Jenna Bastianello at (906) 284-0219, or bastiaje@mail.gvsu.edu and Cynthia Grapczynski at (616) 331-2734, or grapczyc@gvsu.edu. Please feel free to ask any questions you have now, or at any point in the future. If you have any questions or concerns about your child's rights as a research subject, you may contact the GVSU Institutional Review Board (IRB) at (616) 331-3197 or you may access their website at <http://www.gvsu.edu/hrrc/>. This research protocol has been approved by the Human Research Review Committee at Grand Valley State University. File No. 10-240-H Expiration: June 8, 2011.

Please enter your child's name and sign below if you give consent for your child to participate in this study.

Your child's name: _____

Your signature _____ Date _____

Appendix D

