

MOTT CHILDREN'S HEALTH CENTER EATFIT SUMMER CAMP II

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TABLE OF CONTENTS

Chapter I: Introduction

Purpose of Project	3
Mission of Mott Children’s Health Center	4
History of Mott Children’s Health Center	4
Overview of MCHC Services	4
Department of Child and Adolescent Health Services	5
Way To Go Kids	6

Chapter II: Literature Review

Bullying	8
School Lunches	10
Self-Efficacy	11
Environment	12
Cost of Obesity	13
Prevention	14
Framework of Theories	15

Chapter III: Methodology

Recruitment	17
Overview of EatFit Summer Camps	17
Variables	19
Curriculum Review	20
Survey Development	21
Review of Adapted Evaluation Tools	22

TABLE OF CONTENTS

Chapter IV: Potential Results	28
Chapter V: Discussion	30
Limitations	30
Strengths	31
Future Programming	31
Appendix A	33
Table 1	34
Table 2	35
Table 3	36
Appendix B	39
Table 4	40
Mott Children’s Health Center Evaluation Tool	41
References	42

ABSTRACT

The purpose of this study was to design an evaluation tool for EatFit Summer Camp II held at Mott Children's Health Center. This camp is in need of a formal evaluation tool to be utilized by participants thirteen to sixteen years of age. The variables that will be concentrated on are self-efficacy and environment. The final MCHC questionnaire is comprised from questions from three existing evaluation tools. Two of the tools were utilized by children/adolescents. The other questionnaire was utilized by adults; however, questions regarding environment are relevant to population being serviced.

Chapter I: Introduction

The issue of childhood obesity has reached heightened concern in our society. More and more children are affected by this health condition. Health conditions that were once considered “Adult Diseases” have migrated over into our young people’s lives. Hypertension, diabetes, heart disease have become common diagnoses for children/adolescents plagued with weight issues. These chronic conditions and more have created challenges in helping children/adolescents maintain a healthy body. This trend has made obese children/adolescents prone to a reduced quality of life.

The childhood obesity epidemic has been accelerating over the years. According to Center for Disease Control (CDC), “Childhood obesity has more than tripled in the past 30 years. The prevalence of obesity among children 6 to 11 years increased from 6.5% in 1980 to 19.6% in 2008. The prevalence of obesity among adolescents aged 12 to 19 years increased from 5.0% to 18.1% (CDC 2010). The child obesity rate is increasing at an alarming rate.

The Center for Disease Control reported among Michigan students 12% were considered to be obese according to the 2009 Youth Behavioral Risk Survey (CDC 2010). This statistic is based on students who were more than the 95th percentile for body mass index by age and sex based on reference data. In addition, this report indicated the following:

Unhealthy Dietary Behaviors

- 80% ate fruits and vegetables less than five times per day during the 7 days before the survey
- 68% ate fruit or drank 100% fruit juices less than two times per day during the 7 days before the survey
- 88% ate vegetables less than three times per day during the 7 days before the survey

- 28% drank a can, bottle, or glass of soda or pop at least one time per day during the 7 days before the survey (CDC 2010).

The above percentages display dire need to educate Michigan students of the consequences of unhealthy behavior, and also to make alternative food and beverages available for consumption. Many students eat breakfast and lunch at school. Although many schools offer variety of foods, most have a high calorie count.

The Michigan Youth Risk Behavior Survey indicated the following for physical inactivity.

- 14% did not participate in at least 60 minutes of physical activity on any day during the 7 days before the survey
- 75% were physically active at least 60 minutes per day during the 7 days before the survey
- 58% did not attend physical education (PE) classes in an average week when they were in school
- 69% did not attend PE classes daily when they were in school
- 30% watched television 3 or more hours per day on an average school day
- 23% used computers 3 or more hours per day on an average school day

A sedentary lifestyle contributes to obesity in a major way. Inactivity coupled with unhealthy food choices supports this epidemic. The CDC report indicated that possible solutions are better health education, more physical activity programs and healthier school environments (CDC 2010).

There have been a variety of factors that have been suggested as causes of childhood obesity. Among them are reduced physical education at school, increased homework loads, campus vending machines, television, video games, larger portion sizes and other factors (Sturm 2004). All of these variables coupled with a sedentary lifestyle contribute to this epidemic. The influxes

of technology such as video games, computers and other electronic devices have kept young people from becoming physically active. Many have not been spending a substantial amount of time playing and engaging in mobile activities. This behavior has contributed to weight gain among young people.

However, weight gain can be initiated much earlier than adolescence. Sturm reported “A new survey yielded in 2003 for children younger than seven years found that one in five, aged four to six plays computer games in a typical day” (Strum, 2004, p7). This data is disheartening because it illustrates the importance of prevention and helping those already affected by this epidemic. It appears technology is targeting preschools and elementary level students as a viable avenue to entice parents to purchase their products.

Children/adolescents rely on parents/caregivers to provide food for them to consume on a daily basis. Many families have a busy lifestyle between work, errands and afterschool activities. In turn they tend to rely on meals that are fast and easy. Many fast food menu items have a high fat and calorie count. According to U.S. Department of health and Human Services, “Stress and a lack of available healthy and affordable foods are some of the reasons many people turn to fast food to satisfy their hunger.”

Purpose of Project

Mott Children’s Health Center has been offering health services to families for a number of years. Each summer two camps are offered to children/adolescents in Genesee County, Michigan. Neither camp has a formal evaluation tool. The purpose of this project is to design an evaluation tool for the camp that focuses on adolescents from twelve to sixteen years of age. The questionnaire will contain ten questions that will inquire about three variables: self-efficacy, physical activity and environment. This questionnaire will be administered to participants at first

session of EatFit Camp II. The information generated from questionnaire will be used for future programming. It will be used to formulate discussion dedicated to strengthen current and future programming in the area of weight management.

Mission of Mott Children’s Health Center

The mission of Mott Children’s Health Center is “to improve the lives of Genesee County children and adolescents who are at risk for not reaching their full potential by providing for their comprehensive health needs through direct services, indirect services and advocacy within the context of family and community and by joining others to promote the well-being of all children in the county” (www.mottchc.org).

History of Mott Children’s Health Center

Mott Children’s Health Center (MCHC) has been providing health services to children for over sixty years. This agency has maintained its commitment to fill in health care service gaps for children and adolescents. In 1939, Charles Stewart Mott, philanthropist initiated a desire to “serve borderline medically indigent children in Genesee County”. His commitment to families has created MCHC into an agency that this community can rely on for quality services.

Over the years, MCHC has maintained three major departments. Although periodically services have changed based on the current health need of the community, this agency has maintained its pledge to provide quality health services. In addition, to offer services free of charge.

Overview of MCHC Services

Pediatric Dentistry: provides oral health services for Genesee County’s children and adolescents.

Child and Adolescent Psychiatry: offers child/adolescent-centered services that promote the emotional growth of children within the context of their families and community.

Child and Adolescent Health Services: provides audiology, pediatric health education and promotion, weight management and family support services.

The eligibility requirements for MCHC's services are families must have income 150% below poverty level. Most services are offered to children from ten to twenty one years of age.

However, Pediatric Clinic services from birth to eighteen years of age.

Department of Child Adolescent Health Services

The department Child and Adolescent Health Services promotes healthy outcomes in children and adolescents by partnering with and building on the strength of families, schools and neighborhoods through: Audiology Services, Family Support Services, Health Promotion, School-Based Health Centers and Pediatric Clinic. All weight management, nutrition and physical activity services are contained in this department. These services are available to families free of charge to help children/adolescents strive for a healthy lifestyle.

In the early 2000's, MCHC collaborated with Hurley Pediatric Clinic which sponsored "Hurley Fit Kids" program to help overweight children and adolescents focus on behavioral changes. At the time Hurley Pediatric Clinic was located inside MCHC. Referrals were generated from Hurley Pediatricians. Eligibility for the program was for children/adolescents from ten to eighteen years of age who were identified by a pediatrician as being overweight. Parents were required to be present at each appointment. Each appointment consisted of interaction with a physician, nutritionist and social worker. The goal of the program was to provide information and change behavior. Due to the elevated need to service overweight

children/adolescents referrals for the program increased rapidly. In accordance with MCHC's mission, it was decided that another program was needed to address the waiting list.

Way To Go Kids Program

MCHC began offering an eight-week management program for ages eight to sixteen called "Way To Go Kids". This program required parents to be present at each session with their child. This was deemed a necessary step to emphasize importance of parent helping their child embrace a healthy lifestyle. Once a week, parents and children/adolescents met with a health educator in a group setting to learn about ways to become healthy. Each session included a lesson on different topics such as reading labels, food pyramid, water intake, physical activity and other health related topics. The first half of each session is dedicated to lecture/discussion. The second half is dedicated to physical activity in the Teen Wellness Center. Parents reported that they noticed their children were losing weight and making healthier food choices. Due to the success of the "Way To Go Kids" program it became a pre-requisite for the Hurley Program.

The "Hurley Fit Kids" program is no longer in existence. However, the "Way To Go Kids" program is available to families twice a year, in the fall and winter. This program accommodates up to fifteen youth and their parents. There are no weight requirements for this program. There is a graduation ceremony at the end of the last session.

The Teen Wellness Center is open four days a week. It is open Monday through Thursday from 4pm – 7pm. The hours are scheduled to accommodate parents and participants school schedule. Summer hours are from 3pm – 6pm due to staffing schedules. The Teen Wellness Center is open year round excluding holidays and emergency shutdown days. Parent/guardians can drop off participant and wait for them in the lounge area at MCHC.

Referrals for Teen Wellness Center are generated from health care providers, parents, self-made referrals and family members. Parents/guardians have to complete paperwork before participants are allowed to utilize the Center. Participants are encouraged to engage in physical activity up to ninety minutes in the Center. It is staffed by a health educator, nutritionist and personal trainer.

Chapter II: Literature Review

The issue of childhood obesity has become more and more widespread in our society. There are several factors that have an influence on childhood obesity. This literature review will examine data on statistics, costs, school lunches, eating habits, bullying, self-efficacy, environment, built environments and prevention. There are two theories that would be most effective in providing framework for this project: Theory of Reasoned Action/Theory of Planned Behavior.

Many experts agree that obesity is one of the most pressing health problems facing our nation. This crisis affects adults as well as children. According to the Center for Disease Control (CDC) adult rate of obesity has reached a heightened level. The report indicated that the average U.S. adult weighs 24 pounds more than U.S. adults in the 1960's. In addition, there are approximately 73 million adult men and women affected by obesity (CDC 2011).

The rate of childhood obesity has tripled over the last four decades. The CDC report indicated that approximately 12.5 million children and teens are affected by obesity. The 1980's and 1990's display tremendous growth and that obesity prevalence migrated from 5 percent to approximately 15 percent. The CDC indicated that older children and teens tend to be obese compared with preschoolers.

Bullying

Bullying is another issue that children are facing in our society. Most schools have their challenge at every grade level. A study was conducted on a sample of boys and girls (11-16 years old). These children self-reported information on Body Mass Index (BMI) and bullying behaviors (Janssen, et al 2004). The study concluded that overweight and obese school-aged children are more likely to be the victims and perpetrators of bullying behaviors than their

normal weight peers (Janssen, et al, 2004). So not only are these school-aged children faced with weight issues, but also social issues.

Another study conducted on a sample of boys and girls at age 7.5 years of age predict bullying involvement at 8.5 years of age. Data was examined to explore if weight category is a precursor to bullying status. This study concluded that obesity is a variable as it relates to bullying involvement for boys and girls (Griffiths, Walke, Page, Harwood & ALSPAC Study Team, 2006).

Adolescence is a period of growth and development. It is a time when young people are trying to “fit in” with their peers. It can become uncomfortable when faced with weight issues and teasing. Therefore, building self-esteem can be a contributing factor to aid in getting a child/adolescent to think differently about their health.

The former director of the New York State funded Center for Best Practices for the Prevention of Early Childhood Obesity reported on a study that involved a large sample of boys and girls who were between eleven and sixteen years of age. The study yielded that overweight and obese children were more likely to be victims and perpetrators of bullying behavior than their normal weight peers (Stevelos, 2010).

Another study reviewed whether children from different socio-economic classes were more vulnerable to bullying than others. The study looked to inquire if there was a difference in an overweight child who was male, female, African American, Caucasian or Hispanic? Whether the child was rich or poor? Had good grades or bad grades? The lead researcher, Dr. Julie Lumeng reported “the child who was obese was simply more likely to be bullied than the child who was not; none of these things affected it at all” (Lumeng, 2010).

School Lunches

A study was conducted by a team of researchers at U of M Cardiovascular Center. The team administered 1,297 health behaviors questionnaires to sixth graders in Michigan Public Schools over a period of three years. The study concluded that children who consumed school lunches were more likely to be overweight or obese than those who brought lunches from home (Jackson, 2010). Nutrition content of the school lunches was not available. The outcomes of the study reveal the need to promote healthy behaviors and eating within the school environment.

Children/adolescents spend a substantial amount of time on school campuses. Therefore, many eat one or two of their everyday meals at school. The U.S. Department of Agriculture (USDA) provides school meal programs. In the past, food provided by the USDA was the student's only choice for a meal. Currently times have changed to include "competitive foods." According to this study, competitive foods are those sold in vending machines, a la carte lines, school stores, snack bars and fund raisers. Competitive foods are available at all grade levels (Larson & Story, 2010). The temptation to eat non-nutritious foods becomes unbearable for many students. The high calorie count and fat content in "competitive foods" have an impact on childhood obesity epidemic.

A national study reported that having no access to competitive foods such as school store or snack bar reduced consumption by 220 calories per school day with middle school students and by 280 calories per school day among high school students (Larson & Story, 2010). In earlier decades there was no access to competitive foods. Children/teens were a lot healthier because of it. Many school administrators claim to make decisions in the child's best interest, but neglect the fact that offering healthier food for students is paramount in helping this generation live longer. No longer having competitive foods available encourages healthier food choices.

Self-Efficacy

The area of self-efficacy and childhood obesity has been explored in several studies. The definition of self-efficacy according to Banduru is “Perceived self-efficacy is defined as people’s belief about their capabilities to produce designated levels of performance that exercise influences over events that effect their lived” (Banduru, 1994). According to this definition it is important for children/adolescents to believe that they have power to change unhealthy behaviors. This can be achieved through healthy eating and physical activity. However, in order for change to occur, one must believe they have the power to change.

A study conducted on a sample of adolescent girls examined direct and indirect effects of perceived equipment accessibility, neighborhood safety, and social support on self-reported physical activity among older adolescent girls. The study was conducted on 12th grade girls. The girls were given several questionnaires that included self-report measures of the perceived physical environment, social support, barriers, self-efficacy, and physical activity. The study focused on 12th grade girls due to the fact that physical inactivity is elevated in 12th grade girls compared with 9th grade adolescent girls. This information is based on a study that was conducted previously. The study reported that relations of physical activity with perceptions of social and physical environments might be different in the 9th and 12th grades because of potential influence of self-efficacy late in high school. Physical activity increasingly becomes a personal leisure choice and physical activity levels decline (Motl, Dishman, Saunders, Dowda, Pate, 2007).

Although this study focused on adolescent girls, it is relevant because older adolescents are serviced through EatFit Summer Camp II and Teen Wellness Center. In addition, results from this study will help us prepare with presenters and/or information to help motivate and encourage

physical activity. We service both genders every year. Therefore, this study helps reveals insight into potential challenges with adolescent girls that bring awareness to staff.

Another study focused on parental influences on child physical activity and screen viewing time. A sample population of parents of kindergarten, grades 2nd and 4th, and older children in grades 6th, 8th and tenth were recruited for this study. The scope of the study was to determine magnitude of parental self-efficacy and perceived barriers associated with children's physical activity and television time. An additional part of this study was examined how these relationships differ according to children's age and household socio-economic and demographic characteristics (Smith, Grunseit, Hardy, King, Wolfenden and Milat 2010). A survey administered to parents measured perceived barriers and self-efficacy to influence their child's physical activity participation (Grunseit, Hardy, King, Wolfenden and Milat 2010). The questionnaire collected information on child's sex, date of birth, school year, household income, and maternal education.

Environment

A study conducted by the 2007 National Survey of Children's Health reported that the odds of a child being obese or overweight were 20-60 percent higher among children in neighborhoods with the most unfavorable social conditions such as unsafe surroundings, poor housing, and no access to sidewalks, parks, and recreation centers than among children not facing such conditions. A telephone survey was conducted that identified a child to be the subject of survey. The respondent was the parent or guardian that provided health information on the child. All of the data were based on parental report. However, results yielded that those living in neighborhoods with the most unfavorable social conditions were 50 percent more likely to be physically inactive.

Many children do not have access to “green space”. The influx of buildings, shopping malls, schools have created an atmosphere of limited play areas. One study described that neighborhoods that have more greenness contributed a lower BMI to children and youth. Researchers reported that perhaps this is the result of accessibility to parks, playfields, or other open spaces that foster physical activity or increased time spent outdoors for active play. The BMI results indicate that having access to outdoor play areas is a factor to reduce childhood obesity.

A study conducted by the National Center for Health Statistics and Center for Disease Control conducted a telephone survey. The sample size consisted of 91,642 children from birth through seventeen years of age. This sample also included about 1,800 children per state. All data was based on parental reports. There were several variables examined in this study. According to Singh, Siapush, Kogan (2010), “Neighborhood environmental factors were the primary covariates of interest. These included neighborhood socio-economic conditions such as perceived neighborhood safety and area deprivation. This study reported that there is a correlation between having access to one or more recreational facilities and reduced obesity and increased physical activity among adolescents (Sing, et al, 2010).

Cost of Obesity

The Robert Wood Johnson Foundation reported that obese children place a tremendous burden on the health care system. The care for an obese child is approximately three times more than the average child. Those children without health care coverage place an even heavier burden on the health care system (Robert Woods Johnson Foundation, retrieved 6/24/11). The following are statistics on Economic Consequences of obesity as reported from Robert Woods Johnson Foundation:

- Childhood obesity is estimated to cost \$14 billion annually in direct health expenses, and children covered by Medicaid account for \$3 billion of those expenses
- The average total health expenses for a child treated for obesity under private insurance is about \$1,108
- Annually, the average total health expenses for a child treated for obesity under Medicaid is \$6,730, while the average health cost for all children on Medicaid is \$2,446
- Among adults, the increased prevalence of obesity was responsible for almost \$40 billion of increased medical spending through 2006, including \$7 billion in Medicare prescription drug costs. The medical costs of adult obesity were estimated at \$147 billion per year by 2008
- Between 1999 and 2005 there was a near doubling in hospitalizations of children with a diagnosis of obesity and an increase in costs from \$125.9 million to \$237.6 million between 2001 and 2005 (Robert Woods Johnson 2011).

The major healthcare costs make an astounding impact to develop prevention measures to help eradicate the obesity problem. Although it is nearly impossible to eliminate obesity measures should be formulated to help reduce and prevent other children/adolescents to be impacted by this epidemic. It is by far less expensive to provide access to healthy foods and physical activity than to endure expensive health care cost in future.

Prevention

There are several factors that have been attributed to childhood obesity. One study describes poverty and education as having a large potential impact on health. There are several strategies mentioned as ways to improve food environment. The strategies are altering relative food prices, shifting our exposure to food, and improving the image of healthy food while making unhealthy

food less attractive (Frieden, Dietz & Collins, 2010). The researchers suggest changing food policies as a means to reduce childhood obesity. The focus would be on providing more healthy food choices.

Another concept that researchers mentioned is that children should be the priority population to focus on as far as intervention methods. The rationale behind this point is that it is harder to reduce weight in adults once it has been established. The study offers strategies for reducing childhood obesity. Some of the target institutions are preschool, schools or after school care services for influencing diet and physical activity promoting good nutrition (Dehghan, Akhtar-Danesh, Merchant, 2005).

The obese child has great potential to develop into an obese adult. The health behaviors of children/adolescents need to be established early to diminish obesity in adult years. A study conducted by the Department of Pediatrics Division based in Florida reported that more than two thirds of children 10 years and older who are obese will become obese adults. Also, obesity in young adults decreases life expectancy by 5-20 years (Miller, J, Rosenbloom, Arlan, Silverstein, Janet, 2004). Everyone deserves to live to their full potential. This epidemic is clearly curtailing lives before it is enjoyed to the fullest.

Framework of Theories

The Theory of Reasoned Action/Planned Behavior epitomizes why people would or would not engage in health behaviors. Both theories allude to the concept of studying attitudes towards behaviors more than just focusing on behaviors themselves. In the arena of trying to encourage youngsters to embrace a healthy lifestyle it is important for them to have a (1) positive attitude towards nutrition and physical activity (2) support group (parents, peers, etc) believing that nutritional foods and physical activity are important (3) influence of their opinion on behavior

(Butler, 2001, p. 240). The Theory of Planned Behavior recognized that not all behavior is totally voluntary. According to J. Butler, “This element is considered a result of past experience and anticipated problems that determine the person’s perceived ease or difficulty to execute are less likely to be attempted” (Butler, 2001, p. 240). A child/adolescent contemplating losing weight is faced with many challenges. First of all, motivation to lose weight has to be a major factor. A child/adolescents quest to eat healthier and engage in physical activity is a defining moment in their lives. A positive support group is crucial to helping them stay encouraged and become successful.

Programs that build upon strengths of an individual, and offers productive activities based upon needs of child/adolescent help foster positive outcomes. Incorporating an evaluation tool that monitors attitudes and behaviors will strengthen participant’s self-confidence.

Chapter III: Methodology

Recruitment

Each year MCHC has two summer camps that are available to children and adolescents from eight to sixteen years of age. Both camps are offered free of charge. It is available to those living in Genesee County. *EatFit* Camp I focuses on children from eight to twelve. For the purpose of this project the focus will be on *EatFit* II. This camp focuses on adolescents from thirteen to sixteen years of age.

Recruitment for this camp is made three months prior to start date. Fliers are mailed to healthcare facilities, current and past participants of the camp. In addition, fliers are distributed to various departments inside of MCHC. The MCHC school-based health clinics also receive fliers to distribute to clients.

Overview of Summer Camps

EatFit I Summer Camp I is held Monday through Thursday at Cedar Street Children's Center in Flint, Michigan. It is held from 9:00am – 1:00pm for two weeks. This camp is for children eight to eleven years of age. As stated earlier, there is preliminary paperwork that must be completed by parent/guardian prior to camp. The following is an example schedule for *EatFit* Summer Camp I.

- Sign-In: (by parent/guardian)
- Walk to Michigan School for the Deaf (utilize track and playground)
- Snack
- Health Topic Lesson
- Healthy lunch
- Health Topic Lesson and/or craft

- Organized play activities at Cedar Street Children’s Center*
- Sign out (by parent/guardian)

*Cedar Street Children’s Center is utilized due to access to playground equipment on grounds and other child-related amenities that are conducive to this population of participants.

EatFit Summer Camp II is held Monday through Thursday. It is held from 12:00 – 4:00pm for two weeks. This camp is for adolescents from twelve to sixteen years of age. Parents are not required to stay for duration of camp day. However, there is preliminary paperwork that must be completed by parent/guardian prior to camp. The following is an example schedule for EatFit

Summer Camp II:

- Sign In (by parent/guardian)
- Health Topic Lesson and/or craft project
- Utilization of Teen Wellness Center for workout
- Healthy Lunch
- Health Topic Lesson
- Snack
- Outdoor Physical Activity (weather permitting) includes volleyball, football, jump rope, and a variety of other outdoor activities
- Parent/guardian sign out

This camp includes a graduation ceremony at the end of camp. Family members are invited to hear about activities, accomplishments and challenges that were apparent during camp. A certificate of completion is given to each child. All participants receive a water bottle, snacks, pedometer and other health related information. Participants and their families are encouraged to embrace a healthy lifestyle. There is not a formal evaluation for either camp.

This camp has been in existence for a number of years. During this time certain issues have surfaced as it relates to their health behaviors. Self-efficacy has been brought up in relation to physical activity. Camp staff offers encouragement to strengthen participants mentally and physically. Also, accessibility to outdoor play has surfaced verbally between staff and participants. However a formal evaluation tool is not in place.

Variables

The student researcher chose to look at the following two variables: self-efficacy and environment. Selections of these two variables are important on different levels. First of all, self-efficacy relates to how one believes that they have capabilities to reach their goals. The participants of camp need to be able to feel that they can accomplish their health goals. One of the goals of the camp is for participants to choose health foods for consumption. The camp fosters this goal by providing nutritional information on a variety of foods. However, participants should feel empowered to select nutritious foods on their own.

Physical activity is another health goal. Each participant should engage in some form of physical activity on a daily basis. They are encouraged to participate in at least 60 minutes of activity. The activity can be in the form of walking, vacuuming, washing windows and other forms of body movement. The combination of healthy nutrition and physical activity provide for a healthier lifestyle. This is the main objective of EatFit Summer Camp II. Therefore, self-efficacy plays a key role to help participants believe that they can engage in physical activity and become healthier.

The student researcher chose environment as a variable because it relates to accessibility to outdoor activity. They are also encouraged to engage in outdoor activity at home. However,

there is not any information acquired from participants of accessibility and availability of outdoor space.

Curriculum Review

The process for conducting study began with reviewing curricula that was available to agency (MCHC). The student reviewed curricula that fit the guidelines of nutrition and physical activity for children/adolescents. From this process, very little success was accomplished for acquiring needed information to develop evaluation tool. The second step was survey development. A questionnaire style format was chosen for this evaluation tool. Certain questions were selected from three existing evaluation tools. The third step was developing MCHC EatFit Summer Camp II questionnaire.

The student researcher was interested in reviewing curricula and questionnaires that included information on nutrition, physical activity and environment. The student researcher began with reviewing familiar curricula that was available through agency. There were three curriculums reviewed for potential use in study. Curricula and questionnaires were reviewed in attempts to retrieve psychometric properties however, attempts were unsuccessful.

The “Way To Go Kids” curriculum was utilized by MCHC for years as an effective weight management program. This program had a questionnaire to be completed at the end of eight weeks. However, inquires about psychometric properties of questions were not available. This student researcher found that “Way To Go Kids” staff acquired questionnaire based on a pilot study and their experience with children and their parents. Therefore, validity and consistency of questions were unclear.

A second potential curricula that was reviewed in the study was “Plant Health”. This curricula is a weight management program that focuses on middle school students. The focus is

on science theories and behavior change. Behavioral choice theory is used by allowing youth to choose among alternative activities, a strategy that both increased a sense of control and reinforces healthy behavior. The Planet Health message encourages students to:

- Be physically active everyday
- Limit your screen time to no more than two hours per day
- Eat five or more servings of fruits and vegetables (combined) daily
- Eat more whole grains, less added sugar
- Eat food low in saturated fat and containing no trans fat

(Carter, Wiecha, Peterson, Nobrega & Gortmaker, 2007, p.3).

Several attempts were made to retrieve psychometric properties from questionnaires, but were unsuccessful.

The third curriculum reviewed was “Eat Well and Keep Moving”. This is a school-based program that provides children with knowledge and skills to make healthier food choices and to become physically active. This program focuses on elementary school children. The questionnaire used with this curriculum had the potential to be utilized by adolescents. However, attempts to retrieve psychometric properties were unsuccessful.

Survey Development

The student researcher chose a questionnaire style format for this evaluation tool. This design was chosen because student researcher felt it would be easier for adolescents to complete. Also, student researcher wanted evaluation tool to be concise. The ten questions address two variables: self-efficacy and environment. The focus on these two variables will give insight of adolescent’s perception on their health behavior and environment. This information will help in designing effective strategies to help them overcome barriers.

Survey questions were adapted from a review of existing instruments that have been tested and evaluated. By using validated instruments ensured that the questionnaire was a consistent and stable scale to assess the theoretical constructs. The three instruments that questions were adapted from are titled “Instrument Development and Validation of Perceived Physical Activity Self-Efficacy Scale for Adolescents”, “Environmental Supports for Physical Activity Questionnaire (Social and Physical Environment Survey) and Structure Analysis of the Children’s Eating Attitude Test in Overweight and At Risk for Overweight Children and Adolescents. These three instruments were chosen because they address variables that will improve programming for the camp and other weight management programs held at MCHC. More importantly, it will help foster strategies to aid young people in having a healthy lifestyle.

Review of Adapted Evaluation Tools

Instrument Development and Validation of Perceived Physical Activity Self-Efficacy Scale for Adolescents

The student researcher reviewed psychometric properties of a perceived self-efficacy scale for physical activity. This survey utilized a sample population formed of two hundred and six racially diverse adolescents at a Midwestern U.S. public middle school. An 11-item Perceived Physical Activity Self-Efficacy Scale was used to determine participant’s confidence in ability to overcome challenges related to physical activity. This survey was relevant because population being services is of U.S. Public Health system which mirrors the population being serviced by MCHC (Wu, Robbins, Hsieh 2011). Cronbach’s Alpha coefficient of .86 according to Cronbach’s Alpha standard, this number reveals a high level of internal consistency. A test-reliability was conducted and revealed results of .61. The results of the study revealed self-efficacy was not related to physical activity. (See Appendix A)

Structured analysis of The Children's Eating Attitudes Test in overweight and at-risk for overweight children and adolescents

The Children's Eating Attitudes Test (ChEAT) is a test that examines eating and dieting attitudes and behaviors. The survey was implemented with adolescents from six to eighteen years of age. They were recruited through newspaper advertisements and mailings to families and physicians for studies of the physiological, metabolic and molecular bases of childhood obesity (Ranzenhofer LM, Tanofsky-Kraff, Menzie, Gustafson, Rutledge, Keil, S. Yanovski, J. Yanovski, 2008).

The reliability analysis revealed adequate internal consistency was demonstrated for ChEAT total score (Cronbach's Alpha was $=.78$) and the body/weight concern subscale (Cronbach's Alpha $=.74$), but the food preoccupation, dieting, and eating concern subscales were less consistent (Cronbach's score $=.66$, $.55$ and $.52$ respectively) (Ranzenhofer, Kraff, Menzie, Gustafson, Rutledge, Keil, S. Yanovski, J. Yanovski, 2008). This evaluation tool is relevant to my population because the study was implemented with adolescents who are overweight. This is the same population that is being serviced through EatFit Summer Camp II. Camp participants must be in the 95th percentile to be considered a candidate for camp. Statements used in the study are relevant to the variables that are being use for this study.

Environmental Measures of Physical Activity Supports Questionnaire (Social and Physical Environment Survey)

In this study a survey was designed to gather data on perceptions of the environment at neighborhood and community levels. These variables were assessed for (1) to determine validity by comparing respondent perceptions to objective measures and (2) to determine test-retest reliability of the survey (Kirtland, Porter, Addy, Neet, Williams, Sharpe, Neff, Kimsey,

Ainsworth, 2003). The methodology of this study was delivered in a telephone survey. It was administered to a stratified sample of adults. The results yielded that safety of environment plays a key role in physical activity. Although this study used an adult sample population, questions are relevant to illicit responses from EatFit Summer Camp II participants.

This next section will review the three original evaluation tools used to develop the MCHC EatFit Summer Camp II evaluation tool. The review will evaluate psychometric properties of each questionnaire. The MCHC's version was comprised of select questions from all three questionnaires.

Instrument Development and Validation of Perceived Physical Activity Self-Efficacy Scale for Adolescents

The original survey had eleven statements. There were five statements adapted from this survey. A reliability analysis using Cronbach's Alpha reliability analysis scores to measure internal consistency among a set of items was conducted. Below is a list of statements that were adapted from original survey. (See Table 1)

Please show how true each statement is regarding how sure you are that you can exercise, be active or do sports when you face certain barrier problems.

Table 1

Question	Response	Alpha Score
I feel self-conscious or concerned about my looks when I exercise	Not at all true Not very true Sort of true Very true	.86
I have to exercise alone	Not at all true Not very true Sort of true Very true	.84

I am afraid to fail	Not at all true Not very true Sort of true Very true	.84
I am tired	Not at all true Not very true Sort of true Very true	.85
It was very hard work	Not at all true Not very true Sort of true Very true	.85
I am sure that I can still exercise, be active, or do sports, even if I face certain barriers or problems	Not at all true Not very true Sort of true Very true	.84

I chose to use a 4-point Likert Scale. This is what the researchers decided to use although originally a 5-point Likert Scale was used in pilot work (Wu, et al)

All statements had high internal consistency.

Structure Analysis of the Children's Eating Attitudes Test in Overweight and At-Risk for Overweight Children and Adolescents

The original survey had 26 items. There were two items adapted from this survey for MCHC EatFit Summer Camp II version. A reliability analysis using Cronbach's Alpha reliability analysis scores to measure a set of items was conducted. (See Table 2)

Table 2

Question	Response	Alpha Score
I am scared about being overweight	Never Really Sometimes	.60
I think a lot about wanting to be thinner	Never Really Sometimes	.79

Exercise, be active, or do sports...even if I face certain barriers or problems	Never Really Sometimes	.79
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The original survey used a 6-point Likert Scale. However, the tool was modified.

Environmental Supports for Physical Activity Questionnaire

The original survey had thirteen questions. There were five questions adapted from this survey. A reliability analysis using Spearman's Rho was used to measure internal consistency. Spearman's Rho is a statistical calculation that takes two rankings and produces a numerical relation from 1 to -1. A score of 1 means that the lists are identical (1 2 3 4 vs. 1, 2, 3, 4). A score of -1 means that the lists are reversed (1, 2, 3, 4 vs. 4, 3, 2, 1). A score of 0 (zero) means that there is no relation whatsoever between the two lists. (See Table 3)

Table 3

Question	Response	Spearman's rho
Overall, how would you rate your neighborhood as a place to walk?	Very pleasant Somewhat pleasant Not very pleasant Not at all pleasant	.66
Does your neighborhood have any sidewalks?	Yes No	.74
Do you use walking trails, playgrounds, sports field or physical activity?	Yes No My community does not have these facilities	.56

The original MCHC EatFit Summer Camp II evaluation tool is comprised of all of the statements/questions mentioned earlier. There are eight self-perception and two environment questions. The statements/questions selected from original surveys are based on variables that

MCHC has capabilities to impact with children/adolescents. There are more self-perception questions because before a person can engage in a healthier lifestyle they must have confidence that they are capable of succeeding.

Chapter IV: Potential Results

There are no results to report at this time because tool is being developed. Mott Children's Health will have results at a later date. However, there are potential results that be reviewed in using this tool.

The results of this evaluation tool will be used to strengthen future programming. One aspect to look for in self-efficacy and environment tool is a pattern in responses from participants. The results from tool might show consistent pattern from both genders. There might be a need to strengthen self-efficacy issues. Perhaps focus on ways to empower participants to conquer challenges they face in this area.

Potential results from environment questions should be used to strengthen outdoor activity during camp if necessary. This will help those limited in outdoor activity in their neighborhoods due to lack of sidewalks and/or safety issues. We should be looking for trends in this area because regular physical activity is an important part of a healthy lifestyle. The convenience of a participant's neighborhood can be a key factor in engaging in physical activity during weather conducive months.

Potential results would be used to look at ways to monitor eating behavior. A significant number of children/adolescents that attend EatFit Summer Camp II verbally report that they have struggled with eating nutritious foods. This tool would be used to identify specific thoughts related to self-efficacy and environment. The population being served through summer camp has expressed concern with being able to participate in some of the physical activity exercises.

This tool will be used to identify patterns related to the participant's responses. The responses would aid in designing strategies to help them lead a healthy lifestyle. This tool incorporates self-efficacy and environment questions. Both variables are important to determine

weaknesses and strengths in their behaviors. The environment questions explore their outdoor environment. The camp promotes outdoor activity therefore, questions related to this area give insight into access and safety of neighborhood.

Evaluation accessibility to outdoor activity should be used with this tool. Results from potential responses would be used to assess availability to outdoor activity. The camp is offered in summer months. Staff encourages outdoor activity. This tool will help identify accessibility and safety issues. This will help with future programming.

Chapter V: Discussion

Limitations

In order for this evaluation tool to be effective, it would need to be test piloted. A test pilot would determine that the evaluation tool would be useful for this population. The sample population that should be tested would be participants in the thirteen to sixteen year olds. For the most part, they should have very little trouble understanding the statements/questions. However if the need arises, staff would be available to accommodate them in reading and understanding each question.

A second limitation is lack of a focus group. A focus group would maximize opportunity to retrieve data from the population that camp is focused on. There would need to be two different groups that would be divided by age groups and gender. Males who are eight to twelve year old would be in one group and females eight to twelve years old would be in the other. The same format would be for the thirteen to sixteen year olds.

Another limitation to this applied project is that answers to the questionnaire would be self-reported. Therefore, answers might not be accurate. Providing answers on the self-efficacy part of the survey may be a sensitive subject to adolescents. Caregivers would have to be given a survey into their child's health habits.

The readability levels for all three original surveys were not available. However two of the surveys: Instrument Development and Validation of Perceived Physical Activity Self-Efficacy Scale for Adolescents and Structure Analysis of the Children's Eating Attitudes Test in Overweight and At Risk for Overweight Children and Adolescents were developed for those under eighteen years of age. The Environmental Measures of Physical Activity Supports Perception versus Reality was developed to be used in households with adults. However,

questions could readily be answered by youth. There is a possibility that some youth might not feel comfortable responding to questionnaire.

A parent/guardian focus group would provide information on their perception of their child's health behavior. It would help gain insight on areas that may have been overlooked in helping young people lead healthy lifestyles. Children/adolescents health behaviors are often modeled from parents. Therefore, it seems practical to get feedback from parents on their child's health behaviors.

Strengths

First and foremost, strength of this evaluation tool is that it was developed specifically for adolescents. Specifically, to gather data to enhance EatFit Summer Camp II. Although, data would also be used to benefit other weight management programs that MCHC sponsors. MCHC has resources to address needs of childhood obesity in this community.

Secondly, this tool was comprised to focus on two different variables. This is important because many programs focus only on nutrition and physical activity. This is a tool that might challenge the agency to offer more self-empowerment exercises and presentations. Before one can begin to change unhealthy behaviors one has to feel that they have power to change.

Another strength of this project is that reliability and validity was already established either by Cronbach's Alpha or Spearman rho. These two evaluation methods are credible and offer validity of statements/questions used in MCHC EatFit Summer Camp II evaluation tool. The set of items chosen to be used with participant will illicit responses to strengthen evaluation tool. In turn, responses will help enhance strategies to provide effective services.

Future Programming

First of all this tool will be shared with Child Adolescent Health Department Head and other

MCHC staff. The nutritionist will also be privy to this information. The Department Head and nutritionist are key people in deciding which resource tools should be utilized in weight management programs. Strategic planning will take place on the best way to administer tool.

Future programming should include school administrators. Research suggests that a substantial amount of unhealthy eating takes place on school campuses. Although this didn't focus on nutrition, data gathered should be shared with school administrators. They should be aware of data to possibly change school lunch policy in future.

Childhood obesity is a condition that permeates across all states in this country. This condition does not distinguish between social classes, race or any other classification. It has become a stable epidemic in our society. It's imperative that we provide adequate support to children and adolescents to combat this issue plaguing our children. The time and attention we invest now in educating our children on the importance of a healthy lifestyle will help them learn to grow and thrive into healthy adults. The ultimate goal is for young people to overcome barriers that prohibit living a long healthy life.

The readability level of a questionnaire is important. In order for a document to be effective in eliciting responses, participants should be able to read and understand it based on reading level. The *EatFit* Summer Camp II Mott Children's Health Center version is based on a fifth grade readability level for all ten questions. The participants in *EatFit* Summer Camp II are in middle school. This tool will be administered in a group setting; however, each question will be read aloud by MCHC Staff. This ensures that lower functioning readers will have opportunity to hear each question and respond accordingly.

APPENDIX A

TABLE 1

TABLE 2

TABLE 3

Original Version

Instrument Development and Validation of Perceived Physical Activity Self-Efficacy Scale for Adolescents

Table 1

	Mean	SD	Corrected Item-Total Correlation	Cronbach's Alpha if item Deleted
I'm sure that I can still do my exercise even if				
1. I feel self-conscious or concerned about my looks when I exercise.	2.37	1.28	.39	.86
2. I am not motivated or feeling too lazy to exercise at the time.	2.81	1.13	.55	.85
3. I am too busy	2.63	1.02	.56	.85
4. I have to exercise alone.	3.13	1.17	.61	.84
5. I am afraid to fail.	2.89	1.24	.55	.85
6. The weather is bad.	2.80	1.18	.53	.85
7. I have minor aches and pains from activity.	2.62	1.08	.49	.85
8. I am tired.	2.77	1.06	.53	.85
9. I have a bad day at school.	3.04	1.10	.64	.84
10. It is very hard work.	3.14	1.10	.61	.84
11. I am sure that I can still exercise, be active, or do sports, even if I face certain barriers or problems.	3.10	1.10	.62	.84

**Structured Analysis of the Children's Eating Attitudes Test in Overweight and At-Risk for
Overweight Children and Adolescents**

Table 2

Item	Description	Loading
<i>Factor 1: Body weight concern</i>		
I	<i>I am scared about being overweight</i>	.60
11	<i>I think a lot about wanting to be thinner</i>	.79
12	<i>I think about burning up energy (calories) when I exercise</i>	.68
14	<i>I think a lot about having fat on my body</i>	.73
<i>Factor 2: Food preoccupation</i>		
3	<i>I think about food a lot of the time</i>	.72
4	<i>I have gone on eating binges where I feel that I might not be able to stop</i>	.63
21	<i>I give too much time and thought to food</i>	.62
<i>Factor 3: Dieting</i>		
5	<i>I cut my food into small pieces</i>	.51
6	<i>I am unaware of the energy (calorie) content in foods that I eat</i>	.48
7	<i>I try to stay away from foods such as breads, potatoes, and rice</i>	.70
17	<i>I eat diet foods</i>	.71
23	<i>I have been dieting</i>	.47
<i>Factor 4: Eating concern</i>		
2	<i>I stay away from eating when I am hungry</i>	.60
8	<i>I feel that others would like me to eat more</i>	.67
15	<i>I take longer than others to eat my meals</i>	.43
20	<i>I feel that others pressure me to eat</i>	.39

**BRFSS Environmental Supports for Physical Activity
Original Version**

Table 3

ITEM	VALIDITY (GIS) Kappa	RELIABILITY (Test-Reset) Spearman's rho	MOD-VIG PA Odds Ratio (p-value)		WALKING Odds Ratio (p-value)	
			Regular MVPA	Irregular MVPA	Regular Walking	Irregular Walking
In general, would you say that the people in your neighborhood are... 1. Very physically active 2. Somewhat physically active 3. Not very physically active 4. Not at all physically active	0.03	0.47	1.84	1.26	2.37	1.71
			P = 0.0380			
Overall, how would you rate your neighborhood as a place to walk? 1. Very pleasant 2. Somewhat pleasant 3. Not very pleasant 4. Not at all pleasant	0.14	0.66	2.12	2.00	1.92	2.001
			P = 0.0160			
For walking at night, would you describe the street lighting in your neighborhood as ... 1. Very good 2. Good 3. Fair 4. Poor 5. Very poor	0.19	0.73	Good 1.12 Fair 1.33 Poor 1.00	Good 0.86 Fair 1.92 Poor 1.00	Good 1.47 Fair 1.49 Poor 1.00	Good 2.18 Fair 2.05 Poor 1.00
			0.0238			

*Question highlighted relate to environment

**BRFSS Environmental Supports for Physical Activity
Original Version**

ITEM	VALIDITY (GIS) Kappa	RELIABILITY (Test-Retest) Spearman's rho	MOD-VIG PA Odds Ratio (p-value) Inactive OR = 1.00		WALKING Odds Ratio (p-value) None OR = 1.00	
How safe from crime do you consider your neighborhood to be? Would you say... 1. Extremely safe 2. Quite safe 3. Slightly safe 4. Not at all safe	0.22	0.58	Regular MVPA 1.45	Irregular MVPA 1.46	Regular Walking 1.31	Irregular Walking 1.08
			P = 0.2026			
Generally speaking, would you say most people in your neighborhood can be trusted? 1. Yes 2. No	0.20	0.56	Regular MVPA 2.10	Irregular MVPA 3.56	Regular Walking 0.72	Irregular Walking 1.15
			P = 0.0002			
Does your neighborhood have any sidewalks? 1. Yes 2. No	0.37	0.74	Regular MVPA 1.45	Irregular MVPA 1.27	Regular Walking 1.25	Irregular Walking 2.00
			P = 0.01			
For physical activity, do you use any private or membership only recreation facilities? 1. Yes 2. No	Unable To Validate	0.47	Regular MVPA 6.43	Irregular MVPA 3.14	Regular Walking 1.98	Irregular Walking 1.49
			P < 0.0001			

*Question highlighted addresses environment

**BRFSS Environmental Supports for Physical Activity
Original Version**

ITEM	VALIDITY (GIS) Kappa	RELIABILITY (Test-Retest) Spearman's rho	MOD-VIG PA Odds Ratio (p-value) Inactive OR = 1.00		WALKING Odds Ratio (p-value) None OR = 1.00	
			Regular MVPA	Irregular MVPA	Regular Walking	Irregular Walking
Do you use walking trails, parks, playgrounds, sports fields for physical activity? 1. Yes 2. No 3. My community does not have these facilities	0.01	0.56	Use 2.74	Use 2.87	Use 1.88	Use 2.66
			No use 0.71	No use 1.01	No use 0.59	No use 1.28
			P < 0.0001			
Do you use shopping malls for physical activity and/or walking programs? 1. Yes 2. No 3. My community does not have shopping malls	0.25	0.42	Use 1.75	Use 2.19	Use 0.96	Use 2.07
			No use 0.82	No use 1.01	No use 0.64	No use 0.96
			P = 0.0217			
Do you use any public recreation centers in your community for physical activity? 1. Yes 2. No 3. My community does not have public recreation facilities	0.01	0.40	Use 1.90	Use 1.70	Use 3.70	Use 3.72
			No use 1.17	No use 1.55	No use 1.16	No use 1.51
			0.0923			
Do you use schools that are open in your community for public recreation activities? 1. Yes 2. No 3. Schools in my community are not open for the public to use	0.00	0.36	Use 2.40	Use 2.28	Use 3.13	Use 2.99
			No use 1.19	No use 1.17	No use 1.44	No use 1.57
			P = 0.2618			

APPENDIX B

TABLE 4

Table 4

Questions	Variable	Source
Question 1 Question 2 Question 3 Question 4 Question 5 Question 6	Self-efficacy	Instrumental Development and Validation of Perceived Physical Activity, Self-efficacy
Question 7 Question 8	Self-efficacy	Structure Analysis of the Children Eating Attitudes Test in Overweight and At-Risk for Overweight Children and Adolescents
Question 9 Question 10	Environmental	Environmental Supports for Physical Activity

Mott Children's Health Center Summer Camp II

Please read each questions carefully.

Please show how true each statement is regarding how sure you are that you can exercise, be active, or do sports when you face certain barriers, problems.

I am sure that I can still do my exercise even if:

1. I feel self-conscious or concerned about my looks when I exercise.
2. I have to exercise alone.
3. I am afraid to fail.
4. I am tired.
5. It is very hard work.
6. I am sure that I can still exercise, be active, or do sports, even if I face certain barriers or problems.
7. I am scared about being overweight.
8. I think a lot about wanting to be thinner.
9. Overall how would you rate your neighborhood as a place to walk?
10. Does your neighborhood have any sidewalks?

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Children Who Eat School Lunches More Likely to Be Overweight
<http://www2.med.umich.ed.edu/prmc/media/newsroom/details.cfm?ID=1514>