2015

Community Based Programming Promoting Physical Activity

Jennifer Hight M.S. OTR/L
Eastern Kentucky University, Jennifer_Hight@mymail.eku.edu

COMMUNITY BASED PROGRAMMING PROMOTING PHYSICAL ACTIVITY

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Occupational Therapy

Eastern Kentucky University
College of Health Sciences
Department of Occupational Science and Occupational Therapy

Jennifer Hight
2015

EASTERN KENTUCKY UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY

This project, written by Jennifer Hight under direction of Shirley O'Brien, Faculty Mentor, and approved by members of the project committee, has been presented and accepted in partial fulfillment of requirements for the degree of

DOCTOR OF OCCUPATIONAL THERAPY

CAPSTONE COMMITTEE

Shirley O'Brien 07-21-15

Faculty Mentor Date

Colleen Schneck 7-21-15

Committee Member Date

Jennifer Hight

EASTERN KENTUCKY UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY

Certification

We hereby certify that this Capstone project, submitted by Jennifer Hight, conforms to acceptable standards and is fully adequate in scope and quality to fulfill the project requirement for the Doctor of Occupational Therapy degree.

Approved:

Dana Howell 7/21/15

Dana Howell, PhD, OTR/L — Date
Program Coordinator, Doctor of Occupational Therapy

Colleen Schneck 7-21-15

Colleen Schneck, ScD, OTR/L, FAOTA — Date
Chair, Department of Occupational Science and Occupational Therapy

Executive Summary

Background: Childhood obesity is a growing health concern, negatively impacting a child's quality of life, and ability to engage in daily occupations; while contributing to rising healthcare costs. This Capstone Project is a community based program encouraging the development of gross motor skills in the four year old population of a local childcare center to promote engagement in physical activity for less engagement in sedentary daily activities.
Purpose: Although many causal factors have been linked to childhood obesity, current review of the literature demonstrating effective interventions to decrease obesity in the pediatric population is limited, and there is a scarcity of research in the occupational therapy literature addressing obesity prevention and health promotion. This Capstone Project seeks to identify: 1) perceived change in physical activity or movement for a population after participation in physical activity/gross motor programming, 2) local resources for continued engagement in movement activities by children and their families.
Theoretical Framework: Health Belief Model and the Model of Human Occupation
Methods: Descriptive Programs Outcomes Approach
Results. According to the program outcomes survey, most parents reported engaging in more movement activities together, being more comfortable engaging in movement activities with their child, and increased comfort in accessing resources in the community to engage in physical activity. Most parents indicated the program provided new opportunities for family-centered movement activities, and their child was more active after participating in the program.
Conclusions: This Capstone Project demonstrated the opportunity provided through community based programming to collaborate with other professions; and relative ease of incorporating gross motor skill development through movement to promote increased physical activity in a classroom curriculum. Parents responded positively to participation in the program promoting movement/physical activity. This provides implications for potential interventions among other preschool populations in the community setting, as well as other educational settings with collaboration from occupational therapists and educators.

Acknowledgements

I wish to thank my Capstone Committee Members, Dr. Shirley O'Brien, Dr. Colleen Schneck, and Dr. Leslie Hardman for all their time, and assistance in guiding me through this programming and research. I want to thank Dr. Christine Myers for all her support and encouragement as I developed and refined my Capstone Programming.

I want to thank the director and classroom teachers at the childcare facility for all their time and assistance, as I implemented programming at their facility. I wish to thank all the families who chose to be a part of my program, and all the children who I enjoyed "moving" with and getting to know during the program. You will forever be in my heart.

Thanks to the Pioneering Healthier Advisory Board Members for assisting in compilation of needs relevant to the community.

Finally, I want to thank my family members who have demonstrated love, patience, support and encouragement as I have pursued my professional goals. Special thanks to my Mom who has helped me in ways too numerous to count, my grandmother who has always expected great things of me, and my son, who has been patient and proud of his mother. I also want to remember those family members who have passed on, but whose presence is ever near in my heart and memories. I take comfort in knowing I am honoring them with my life, and am assured they would be proud.

EASTERN KENTUCKY UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY

CERTIFICATION OF AUTHORSHIP

Submitted to (Faculty Mentor's Name): Dr. Shirley O'Brien
Student's Name: Jennifer Hight
Title of Submission: Community Based Programming Promoting Physical Activity

Certification of Authorship: I hereby certify that I am the author of this document and that any assistance I received in its preparation is fully acknowledged and disclosed in the document. I have also cited all sources from which I obtained data, ideas, or words that are copied directly or paraphrased in the document. Sources are properly credited according to accepted standards for professional publications. I also certify that this paper was prepared by me for this purpose.

Student's Signature: Jennifer Hight

Date of Submission: 7/21/15

Table of Contents

List of Tables

Section 1: Nature of Project and Problem Identification

Introduction

Kentucky's childhood obesity rate contributes to rising healthcare costs while negatively impacting a child's quality of life, and the ability to engage in daily occupations (Blankenua, 2009; Burchett, 2013; Eisenmenger, 2013; Healthy Americans, 2009; Kaiser, 2013; Kaprowy, 2012; Mattingly, 2013; Tai-Seale & Chandler, 2003). Nationwide, preschool and adolescent obesity has doubled since the 1970's and tripled among children six to 11 years old (Mattingly, 2013; Ogden, Flegal, Carroll & Johnson, 2002, as cited in Wang, Orleans, & Gortmaker, 2012). Currently one in eight preschoolers are obese, and as a result, are more susceptible to being overweight or obese as an adult (Centers for Disease Control and Prevention, 2013). Kentucky currently ranks 42nd in obesity rates for America, and 46th for sedentary lifestyles or lack of physical activity (United Health Foundation, 2014). Almost half of the children and teens in Kentucky, 42%, do not exercise regularly (KidsCount, 2014b). Preschool aged children, two to four years old, have an obesity rate of 15.9% (KidsCount, 2014a). Obese children are the "first American generation to live a shorter life than their parents," (Kaprowy, 2012, para 4).

Obesity has become so widespread nationwide, the American Medical Association has declared it a disease in need of "medical interventions" (Moran, 2013, para. 1). Obesity increases the risk of coronary heart disease, is linked to Type II Diabetes, hypertension, stroke, asthma, some cancers, can contribute to sleep apnea, and is the second leading cause of death (Blankenua, 2009; Kaprowy, 2012; Mattingly, 2013). Obese children have a four times higher chance of having high blood pressure as adults (Burchett, 2013). It is estimated that "one in three children born in the year 2000 will develop Type II Diabetes at one point in their lives, in large part because of the food choices they make" (Kaprowy, 2012, para. 3). Obesity can impact

emotional health by lowering self-esteem and producing depression (Blankenua, 2009; Kaprowy, 2012). Healthy People 2020 identify nutrition, physical activity, and obesity as a Leading Health Indicator, seeking to reduce the prevalence of childhood obesity 14.6 % by 2020 (U.S. Department of Health and Human Services, 2013).

Healthcare costs have risen 80% over the past decade (Woodruff, 2013). According to the executive director of The Trust for America's Health, Dr. Jeff Levi reports, "Our health care costs have grown along with our waist lines, the obesity epidemic is a big contributor to the skyrocketing health care costs in the United States," (Healthy Americans, 2009, para. 3). According to the Kaiser Institute, chronic diseases account for 75% of national health expenditures (Kaiser, 2013). "In particular, there has been tremendous focus on the rise in rates of overweight and obesity and their contribution to chronic illnesses and health care spending" (Kaiser, 2013, para. 5). Approximately $100 billion a year is spent on obesity-related illness (Tai-Seale & Chandler, 2003). Risa Lavizzo Mourey, M.D., M.B.A. of the Robert Wood Johnson Foundation identifies a need to address childhood obesity in order to help control healthcare costs and promote a healthy population with an improved quality of life (Healthy Americans, 2009). Nationwide policy agencies have identified the link between obesity and healthcare.

This Capstone Project employed occupation-based methods to raise awareness of resources available in the community to support physical activity, and empower parents of preschool aged children to make healthier lifestyle choices by incorporating physical activity into their family's daily occupations to address the needs of the preschool population as it relates to Healthy People 2020's Leading Health Indictor of Nutrition, Physical Activity, and Obesity (U.S. Department of Health and Human Services, 2013). The project also aligned with the

Kentucky Governor's Health Goals for 2019 seeking to target obesity by reducing physical inactivity in the preschool population through collaboration with early child care providers (Commonwealth of Kentucky, 2015). As a model, this project demonstrates a role for occupational therapists in local community programing, responding to state and national policy initiatives.

This Capstone Project was implemented with the four year old population at a Madison County Kentucky childcare facility, as a community outreach program to promote healthy lifestyle choices for children and their families. The Capstone Project employed the use of programming to promote physical activity, and target gross motor skills through exercise/movement opportunities for preschool participants and their families.

Problem Statement

Kentucky's childhood obesity rate negatively impacts a child's quality of life, and ability to engage in daily occupations, while contributing to rising healthcare costs (Blankenua, 2009; Burchett, 2013; Eisenmenger, 2013; Healthy Americans, 2009; Kaiser, 2013; Kaprowy, 2012; Mattingly, 2013; Tai-Seale & Chandler, 2003). Although many causal factors have been linked to childhood obesity, current review of the literature demonstrating efficacious interventions to decrease obesity in the pediatric population is limited. There is a paucity of research in the occupational therapy literature addressing obesity prevention and health promotion.

Purpose of the Project

The purpose of this Capstone Project was to employ occupation-based methods to raise awareness of resources available in the community to support physical activity, and empower parents of preschool aged children to make healthier lifestyle choices by incorporating physical

activity into their family's daily occupations to address the needs of the preschool population as it relates to Healthy People 2020's Leading Health Indicator of Nutrition, Physical Activity, and Obesity (U.S. Department of Health and Human Services, 2013). The Capstone Project sought to influence change in the preschool aged child and their parents/caregivers' daily routines, roles, habits, and contextual factors supporting, or limiting, occupational engagement in activities supporting physical activity.

This Capstone Project was completed with the four year old pediatric participants at a childcare facility in Central Kentucky. The program utilized a collaborative approach between an early child care provider facility, and their four year old preschool population to provide increased opportunities for physical activity and movement within the classroom curriculum, formerly influenced by Head Start. The second level of programming included parents and caregivers to raise awareness and empower caregivers to make healthier lifestyle choices for their child.

Kielhofner's continuum of stakeholder involvement, of a medium level of participation, was used to allow for collaboration between stakeholders and the occupational therapy practitioner in terms of programming (Taylor, Suarez-Balcazar, Forsyth, & Kielhofner, 2006). This approach invited an open line of communication between participants and the facilitator/investigator, while allowing for ongoing review, consultation, and advisement (Taylor, Suarez-Balcazar, Forsyth, & Kielhofner, 2006). The focus of the Capstone Project was to identify familial perceived change in physical activity or movement for a population after participation in physical activity programming along with providing resources for ongoing engagement after the pilot project.

Project Objectives

Following participation in a pilot program, parents would: (1) identify changes in physical activities/movement activities with their preschool child after participating in physical activity/gross motor programing embedded in naturalist environments (2) demonstrate increased awareness of resources available in the community to support physical activity and empower parents of preschool aged children to make healthier lifestyle choices by incorporating physical activity into their family's daily occupations to address the needs of the preschool population.

Theoretical Framework or Scientific Underpinnings

The theoretical framework guiding this program is the Health Belief Model, as it is appropriate for programming related to preventive health and wellness, and the Model of Human Occupation (Health Belief Model, 2014; Kielhofner, 2004b). By incorporating these theoretical foundations, this Capstone Project has the potential to influence change in the community through promotion of physical activity to promote less sedentary lifestyles. The Health Belief model seeks to first understand attitudes and beliefs related to effect change, focusing on a person's perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy blending seamlessly with the pilot programming targeting parental perceptions about their child's engagement in physical activity or movement after participation in physical activity or gross motor programming (Health Belief Model, 2014). This model also considers possible hindrances to positive health change, by incorporating increased awareness on the topic, and education to empower the participants, another component of the Capstone Project, addressed through parent education about community resources available for engagement in physical activity/movement.

The Model of Human Occupation, (MOHO), as developed by Kielhofner, (2004a & 2004b) considers the way people occupy their time through activities of daily living, play, and productivity, while viewing through the lens of volition, habituation, performance capacity, and environmental contexts. MOHO's includes "three interrelated components": "Volition, Habituation, and Performance Capacity", all influenced by the Environment (Kielhofner, 2004b, p. 12). Volition includes "personal causation, values and interest", "Habituation" or "habits", and "Performance Capacity" or the ability to engage in various activities (Kielhofner, 2004b, p. 12-18). Of particular interest is the emphasis Kielhofner (2004b) placed on the "environment" for its potential to impact an individual's "motivation, pattern and performance" (p. 12). Kielhofner (2004b) describes the environment as an ever present factor "influencing occupation" (p. 12). This Capstone Project sought understanding of the way children engaged in physical activity through their daily occupations to better understand the role of their environment.

Significance of the Study

Influencing change in the community through promotion of physical activity to promote less sedentary lifestyles is within the scope of occupational therapy. The Capstone Project provided an opportunity for improved understanding of performance patterns, performance skills, activity demands, client factors, and contextual factors currently supporting or acting as barriers to physical activity in the preschool population, and had potential to enact change for improved health and wellness. It had the potential to decrease healthcare costs and improve the quality of life of the participants in the community by increasing engagement in physical activity.

The American Occupational Therapy Association (AOTA) published a formal paper addressing the prevalence of obesity, factors influencing obesity, and health conditions related to

obesity (AOTA 2012). It identifies the role of occupational therapy in relation to obesity, identifies its correlation with the first goal of Healthy People 2020, and explores the definition of disability as discussed by the World Health Organization as it influences the individuals' ability to participate in daily life (AOTA, 2012). AOTA identifies the prevalence of obesity and severe obesity, as well as the increased risk of obesity for individuals with disabilities, individuals with fewer years of education, poorer economic or job status, and minority groups (2007b). It addresses the effectiveness of long-term and short-term weight loss, and the unique way occupational therapy can provide intervention to address weight management that is both effective and sustainable by addressing daily habits, roles and patterns (AOTA, 2007b). The document discusses the potential occupational therapy has to address obesity in a wide array of settings, its qualification to address bariatrics, and potential sources of reimbursement (2007b). Thus, a role has been established for occupational therapists within their scope of practice.

Occupational therapists help "clients who may be experiencing disease, impairment, disability, dissatisfaction, or adverse circumstances to participate in their daily life in a manner that supports their health and well-being," (AOTA, 2013, p. S39). AOTA's position on obesity asserts the profession is able to prevent and address obesity concerns using a holistic and client-centered approach to engage in activities to promote health (2007b). Occupational therapists are uniquely equipped to look at performance patterns related to daily life activities to find meaningful, effective, and motivating interventions to "modify life habits, roles, and patterns that contribute to the chronic condition of obesity" (Clark, 2000; Quiroga, 1995, Wilcock, 1998; Yerxa, 2002, as cited by AOTA, 2007b, p. 702). This Capstone Project sought to utilize the unique skillset of occupational therapy to promote a healthier community.

AOTA recognizes in its Centennial Vision that "occupational therapy is a powerful, widely recognized, science-driven, and evidence-based profession with a globally connected and diverse workforce meeting society's occupational needs," (2007a, p. 614). Addressing nutrition, physical activity, and obesity through intervention provides opportunities to meet society's occupational needs, contribute to the profession's evidence base, promotes further research, facilitates collaboration with other professions, while aligning with Kentucky Governor's Health Goals for 2019 seeking to target obesity by reducing physical inactivity in the preschool population through collaboration with early child care providers; and Healthy People 2020's Leading Health Indicator of Nutrition, Physical Activity, and Obesity (AOTA 2007a; Commonwealth of Kentucky, 2015; U.S. Department of Health and Human Services, 2013). It also promoted increased visibility of occupational therapy in the community.

Summary

Kentucky's obesity rates are on the rise contributing to a variety of health problems, and a decreased quality of life in the pediatric population, while contributing to rising health care costs (Blankenua, 2009; Burchett, 2013; Eisenmenger, 2013; Healthy Americans, 2009; Kaiser, 2013; Kaprowy, 2012; Mattingly, 2013; Tai-Seale & Chandler, 2003). Although childhood obesity has been identified as a problem with many potential contributing factors, a paucity of research is available addressing effective strategies to prevent or reduce childhood obesity. This Capstone Project was designed to address integrating key policies supporting physical activity with the preschool population. Further, it aligns with occupational therapy's Centennial Vision by meeting society's occupational need contributing to the profession's evidence base, promoting further research, and facilitating collaboration with other professions to promote change, while empowering families and children in the community to adopt healthy eating

strategies and engage in physical activity in the preschool population through program design and implementation (AOTA, 2007a; Commonwealth of Kentucky, 2015; U.S. Health and Human Services, 2013). An extensive review of literature will follow in the next section to better provide the background for the Capstone Project.

Section 2: Review of the Literature

Introduction

Background information relating to current childhood obesity rates were retrieved through an internet search of current periodicals using the keyword of "childhood obesity", "healthy eating", and "obesity". Academic Search Complete was used to review current research, identify strategies, and effective interventions/programming was identified using the keyword search of "childhood obesity". The Cochrane Library was also explored. This literature review sought to identify:

- Prevalence of Childhood Obesity in Kentucky
- Confounding Factors Contributing to Childhood Obesity
- Identification of Political Policy Targeting Childhood Obesity
- Occupational Therapist's Perceptions Related to Provision of Obesity Intervention
- Potential Intervention Approaches for Obesity
- Examples of Community Program to address Obesity Related Factors
- Review of the Evidence Base Related to Obesity

Childhood Obesity Prevalence

Kentucky has the 3rd highest childhood obesity rate in the United States (Kaprowy, 2012). Statistics from the 2002 Pediatric Nutrition Surveillance System show about 17 percent

of children between the ages of two and four are already overweight, and can benefit from a nutritional counseling program targeting obesity and encouraging physical activity (Kentucky Cabinet for Health and Family Services, 2013). In Kentucky, 16% of children two to five years old are overweight and 15.6% are obese (Centers for Disease Control and Prevention, 2010). More than one in four children in Kentucky are now living in poverty (Aschbacher, 2013). Obesity is a common nutritional concern among low-income preschool children, one of the target programs of the WIC program (Kentucky Cabinet for Health and Family Services, 2013). Kentucky's youth are second in soft drink consumption, drinking approximately 89 gallons per person (Kaprowy, 2012). Susan Zepeda, President/CEO of the Foundation of a Healthy Kentucky says, "Lowering childhood obesity is a positive lever for overall health change, reduced risk of chronic disease and an improved quality of life," (Eisenmenger, 2013, para. 2). Thus, Kentucky as a state has a high prevalence for obesity.

Contributing Factors

Studies suggest children at a high risk for unhealthy lifestyles, health problems, and at a greater risk of becoming overweight include low income households, urban areas, and working class African American and Latino communities (Veugelers & Fitzgerald, 2005 as cited in Cahill & Suarez-Balcazar, 2005, Ogden & Carroll, 2010). Childhood obesity in its simplest terms comes down to reducing caloric intake "or increasing calories expended from physical activity," (Wang, Orleans, & Gortmaker, 2012, p. 437). Factors influencing healthy lifestyles include: ease of access to high calorie foods with little nutrients, reduced opportunities for physical education, sedentary lifestyles, access to safe areas to play, parental schedules, poor modeling of healthy eating habits by parents/caregivers, lack of parental cooking skill, excessive food marketing of innutritious foods on television, affordable food and drinks, access to free drinking

water in public parks, recreation areas, schools, and daycares (Kaprowy, 2012, Harkin, 2007, Mattingly, 2013; Ogden & Carroll, 2010). The Centers for Disease Control, (CDC), also recommends improved nutrition and physical activity in daycares, and partnering with community members to "promote healthy eating and active living," (CDC as cited by Mattingly 2013). Kentucky residents are at risk for many of these contributing factors.

Political Policy

The provision of opportunities for physical education to reduce childhood obesity have been influenced by the United States Surgeon General, President Barack Obama and First Lady Michelle Obama, as well as foundations committed to the health of American citizens (Amis, Wright, Dyson, Vardaman, & Ferry, 2012). Senator Tom Harkin has called for nutritionally balanced lunches, and implementation of updated federal nutrition for snacks, or other foods sold at school, sponsored the Child Nutrition Promotion and School Lunch Protection act, co-chaired the FCC Task Force on media and Obesity with Senator Brownback to address food marketing of candy, sugary, salty, and fatty foods (Harkin, 2007). He partnered with Senator Hillary Clinton in 2007 to introduce the *PLAY Every Day Act* to promote 60 minutes of physical activity every day, and promote community resources for creation of coalitions "to remove barriers that prevent children and families from living healthy, active lives" (Harkin, 2007, p. S165-S166).

Kentucky Youth Advocates, (KYA), have identified three obesity policies aimed at reducing obesity issues in the state including: shared-use agreements, *Complete Streets*, and Body Mass Index (BMI) Monitoring (Kentucky Youth Advocates, 2013). The shared-use agreements provide community agencies, and schools after hours for opportunities to engage in physical activity (Kentucky Youth Advocates, 2013). Kentucky Youth Advocates successfully helped with Passage of SB 110 in 2012's General Assembly encouraging more schools to open

up their facilities to the communities after hours, while minimizing liability if someone were to get hurt while on the property (Kentucky Youth Advocates, 2013). *Complete Streets* encourages building and designing roads to accommodate all users to increase opportunities for people to safely exercise on streets in their communities (Kentucky Youth Advocates, 2013). *Complete Streets* failed to pass the Kentucky General Assembly in 2008 and 2012, but Kentucky towns and cities, such as Berea in Madison County have taken steps to become more bicycle and pedestrian friendly (Kentucky Youth Advocates, 2013). KYA has identified a need for BMI monitoring in health, education and community settings. This is not mandated for physicians (Kaprowy, 2012; Kentucky Youth Advocates, 2013). Currently no county level data on child obesity is available for school aged children in Kentucky (Kentucky Youth Advocates, 2013). KYA worked on a bill that failed to pass in 2011 to implement body mass index monitoring, but the Kentucky Department of Education, has committed to implement body mass index monitoring administratively by including BMI on school physical forms for children entering Kindergarten and 6th grade (Kaprowy, 2012, Kentucky Youth Advocates, 2013). Several bills were introduced in 2012 relating to Healthy People 2020's Leading Health Indicator of Nutrition, Physical Activity, and Obesity in Kentucky (U.S. Department of Health and Human Services, 2013). Of these, one bill out of 13 was enacted, promoting enhanced opportunities for outdoor activity for Kentucky's children including Safe routes to Schools, Bicycling; Parks, Recreation and Trails (Centers for Disease Control, 2013). The *Complete Streets* program receives federal funding, oftentimes with matching state funds (Eyler, Nguyen, Kong, Yan & Brownson, 2012). As demonstrated in this section, policies exist however implementation has been a challenge. Set evaluation techniques of policy implementation is needed.

Occupational Therapy's Role in Obesity Prevention and Treatment

Occupational therapists have developed interest and possess knowledge and skills in obesity prevention and treatment. The AOTA Societal Statement on Obesity (2012) clearly identifies a role for occupational therapists in their education and preparation to move into health promotion activities. Haracz, Ryan, Hazelton, and James' (2013) research related to obesity found a need for occupational therapists to promote health with clientele while advocating for health policies including "creating supportive environments and strengthening community action" while considering the person, environment, and occupation to support sustainable behavior change" (p. 363). The American Occupational Therapy Association identifies childhood obesity as an emerging niche, while additional research in the Australian Occupational Therapy Journal found many occupational therapists did not believe weight management was in their scope of practice although a majority of their clientele were overweight or obese (AOTA, 2014; Lang, James, Ashby, Plotnifkovv, Guest, Kable, Collins, & Snodgrass, 2013). AOTA further has developed fact sheets reinforcing the role OT can support in school-based, mental health and prevention with children. Thus, through the support documents provided by the professional association, occupational therapists have a role for intervention with the condition of obesity.

Considerations for Intervention

Christiansen and Matuska (2006) have identified a need for research related to lifestyle patterns to promote health and wellness, while Townsend et al. (2009) identify a need to consider "culture, economics, geography, organization and policies that govern occupational experiences and social inclusion" to be considered for improved health outcomes (Christiansen & Matuska, 2006; Townsend et al., 2009). Wicks and Jamieson (2014) have identified obesity as a "complex

socio-environmental issue" requiring a less traditional approach to research (Brown et al., 2010 as cited by Wicks & Jamieson, 2014, p. 82). Larson, Ward, Neelon, and Story (2011) identify the potential for influence child care settings can have on a preschooler's diet and exercise.

Children with difficulty successfully performing motor activities may be more sedentary (Williams et al, 2008; Wrotniak, Epstein, Dorn, Jones & Kondilis, 2006, as cited by Bellows, Davies, Anderson, & Kennedy, 2013). Bellows, Spaeth, Lee, and Anderson (2013) found mothers of preschool aged children are more amenable to physical activity programs when approached from the lens of "gross motor development", because their perception is physical activity occurs naturally, as opposed to gross motor skills that must be nurtured and developed (p. 364 & 365). Shasby and Schneck (2005) have found use of Sensorimotor Theme Groups, (SMTG), as an appropriate method to assist preschool aged children in developing skills in their natural occurring classroom environment, while allowing the occupational therapy practitioner opportunities to assess progression of skills, and collaborate with other professionals.

Community Programming Addressing Childhood Obesity

A literature search within the profession of occupational therapy revealed efficacy for a *Food Friends* program by demonstrating an increase in a child's willingness to try new foods, and improved gross motor skills in preschool children participating in a physical activity intervention program called *Mighty Moves* without significant changes in weight or physical activity levels (Bellows, Davies, Anderson, & Kennedy, 2013). Another study by Cahill and Suarez-Balcazar (2009) identified environmental influences in urban communities that place children at a high risk for unhealthy lifestyles and health problems.

A pilot study in upstate New York, utilizing a community-based participatory research approach to address childhood obesity in children ages two to five years demonstrated significantly lower obesity rates, increased engagement in light and moderate physical activity, and decreased television viewing (Davison, Jurkowski, Li, Kranz, & Lawson, 2013). Davison et al. (2013) further identified improved parental self-efficacy in regard to provision of healthy foods, increased frequency of offering fruits and vegetables to their child and improved support for physical activity (Davison et al., 2013). This research exemplifies the potential for improved healthy eating and physical activity outcomes when employed through action research.

A randomized controlled trial addressed the efficacy of early intervention provided in the home environment on two-year-old children's BMI (Wen, Baur, Simpson, Rissel, Wardle, & Flood, 2012). The program, called *Healthy Beginnings,* focused on five areas: "1) Breast is best, 2) No solids for me until 6 months 3) I eat a variety of fruits and vegetables each day. 4) Only water in my cup 5) I am part of an active family" (Wen et al., 2012). Results of home intervention included lower BMI for children participating in the home intervention, as well as consumption of more vegetables, and less eating in front of a television set or television viewing in general (Wen et al., 2012). The study supports incorporation of programming targeting obesity in early intervention practice.

Evidence Review

Review of the Cochrane Library using key phrases, "childhood obesity", "healthy eating", and "obesity" yielded two systematic reviews for *Interventions for Preventing Obesity in Children* and *Interventions for Treating Obesity in Children* (Luttikhusi, et al., 2009; Waters et al., 2011). Results of these reviews addressed obesity as a health concern at the national and state level, with many causal factors being identified, and highlighting the need for more

research isolating effective intervention strategies to address this problem (Blankenua, 2009; Burchett, 2013; Centers for Disease Control and Prevention, 2010; Eisenmenger, 2013; Kaprowy, 2012, Kentucky Cabinet for Health and Family Services, 2013; Luttikhusi, et al., 2009; Mattingly, 2013; Ogden, Flegal, Carroll & Johnson, 2002, as cited in Wang, Orleans, & Gortmaker, 2012; Woodruff, 2013; Waters et al., 2011). In addition, the implications for childhood obesity are far reaching impacting not only the preschool population's health, but also, the healthcare system overall (Eisenmenger, 2013; Kaiser, 2013; Luttikhusi, et al., 2009; Tai-Seale & Chandler, 2003; Woodruff, 2013).

Results of the systematic analysis demonstrated limits to many studies, including small study sizes, and no ongoing data to determine if the children who demonstrated a decreased BMI, were able to maintain these results over time (Waters et al., 2011). Interestingly, results indicated promising results of behavioral interventions as opposed to medical or self-help interventions, while acknowledging a further need for appropriate interventions and more research (Luttikhusi et al., 2009).

Conclusion

The systematic reviews supported the need for intervention focusing on childhood obesity to promote a sustainable health care system and healthier population. Although calls to action have been raised in public policy, and programs developed to promote obesity awareness; Kentucky's obesity rate remains a concern, supporting the systematic analysis' call for more research determining efficacious intervention to address childhood obesity in naturally occurring environments (Luttikhusi et al., 2009; Waters et al., 2011). The profession of occupational therapy identifies a role for participation of practitioners in obesity programming by their knowledge base and supporting association documents. Occupational therapists must

acknowledge and explore options for collaborative community programming to support health and wellness with the childhood population.

Section 3: Methods

Project Design

Healthy People 2020 identify nutrition, physical activity, and obesity as a Leading Health Indicator (U.S. Department of Health and Human Services, 2013). This Capstone Project was designed to support physical activity in the community through family-centered exercise and gross motor programming embedded in the classroom curriculum formerly influenced by Head Start for preschool aged children. The Capstone Project was initiated in the community, incorporating parents' initial perceptions of family centered physical activity engagement, and ascertaining parental perceptions of their child's participation in physical activity or movement after participation in physical activity programming. It incorporated a parental survey with open ended questions, parent/child physical activity logs, pre and post-testing of parental perceptions about their child's engagement in physical activity and available local community resources for engagement in physical activity, to obtain program data throughout the length of the program. A parent education component was included with handouts/correspondence distributed monthly. Parents provided initial information about their child's involvement in physical activity or movement, and completed an outcomes survey of the program. The ultimate goal of the Capstone Project was to influence change by helping its participants adopt healthier lifestyle choices through enhancement of preschool aged children's gross motor skills, and provisions of opportunities to be more physically active; as well as raising awareness of local community resources available for engagement in physical activity.

Setting

This project was implemented at a childcare facility located in Madison County. Madison County has a relatively homogenous population of approximately 80,000 people, with 92% of its residents being Caucasian, 4.5% African American, 2.2% are Hispanic, 1% are Asian, and less than .5% are American Indian and Alaska Native (U.S. Census Bureau, 2014). The average household income is $42,020, with 21% of the population living below the poverty level (U.S. Census Bureau, 2014). The majority of the population, 84%, are a high school graduate or higher, and about a quarter, 26.7%, have a Bachelor's degree or higher (U.S. Census Bureau, 2014). Madison County has 2,004 preschool aged children, three to four years old, and 157 four-year-olds living below the poverty level (Kentucky Center for Education and Workforce Statistics, 2014). According to the 2014 Early Childhood Profile for Madison County, over half of the children entering Kindergarten are not academically ready as defined by the Kentucky Center for Education and Workforce Statistics, (KCEWS) (Kentucky Center for Education and Workforce Statistics, 2014).

The childcare facility provided services for children four years of age whose parents work during the day. The Capstone Project took place in the four year old classroom with the involvement of parents/caregivers and the classroom teacher. The childcare facility holds a License Type I, and is a two STARS related facility (Child Care Center US, 2014). STARS for KIDS NOW, or STARS, is a voluntary rating system for child care centers in Kentucky using a scale of one to four STARS with four being the highest ranking available (Commonwealth of Kentucky, 2014; Commonwealth of Kentucky, 2012b). Child care centers eligible for STARS ranking exceed minimum licensure requirements for operations (Commonwealth of Kentucky, 2012b).

In Madison County, about half, or 19 out of 37, child care facilities have a STARS rating level (Kentucky Center for Education and Workforce Statistics, 2014). Eligible child care centers must meet and maintain standards set forth by the Cabinet for Health and Family Services Child Care Division, including administrative practices, staff professional development, "staff/child ratios", class sizes, "curriculum, and parent involvement" to keep their STARS ranking (Commonwealth of Kentucky, 2014, para. 2).

The STARS for KIDS NOW program is designed to promote quality child care, and a firm educational foundation by aligning with early childhood standards (Commonwealth of Kentucky, 2012a; Commonwealth of Kentucky 2012b). Included in the developmental areas for school readiness is *Health and Physical Well-Being,* identifying a need for preschool aged children to be able to do "activities that help develop large muscles and provide exercise" (KY Early Childhood Standards, 2013, p. 3). *The Kentucky Early Childhood Standards* identify a need to address "Physical Education" including "gross and fine motor skills" to help prepare preschool aged children for school (KY Early Childhood Standards, 2013, p. 13). The Capstone Project aligned with *Kentucky's Early Childhood Standards*, Kentucky Governor's Health Goals for 2019 seeking to target obesity by reducing physical inactivity in the preschool population through collaboration with early child care providers, and Healthy People 2020's Leading Health Indicator of Nutrition, Physical Activity, and Obesity (Kentucky Early Childhood Standards, 2013; U.S. Department of Health and Human Services, 2013).

Identification of Participants

This Capstone Project used a descriptive method approach in program development and evaluation, and began with a needs assessment using semi-structured, open-ended interviews and a SWOT (Strength, Weaknesses, Opportunities, Threats) analysis with board members of

Pioneering Healthier Communities in Madison County, to explore relevant causal factors impacting the ability of community members to engage in activities supporting a healthy lifestyle, including nutrition and physical activity to support a healthy weight (Doll, 2010; U.S. Department of Health and Family Services, 2013). The semi-structured, or open-ended, interview was initiated with board members to promote collaboration and open dialogue about healthy eating habits, physical activity, obesity, fiscal responsibility, to determine the focus and implementation of sustainable community programming. Many factors identified by board members were themes echoed in the literature, including barriers in the physical environment, safety concerns, lack of motivation, sedentary lifestyles, excessive screen time, unhealthy eating, soft drink consumption, convenience of fast foods, and the lack of food preparation knowledge. Results of the semi-structured, open-ended interview identified sedentary lifestyles as a barrier to engaging in physical activity in the local community, and a lack of exercise and fitness as a primary contributing factor to obesity. Board members of *Pioneering Healthier Communities,* recognized a need for research and programming to increase physical activity. Further, analysis did not reveal any current programming demographically targeting the preschool aged population to address physical activity. Results of the SWOT analysis acknowledged Second Sunday, (2S), as an existing program occurring annually, and sponsored by the University of Kentucky's Cooperative Extension office as a resource encouraging community member's to be more physically active through specially scheduled movement activities for the entire family (Second Sunday, 2014). Opportunities included improving educational opportunities for the community, increased collaboration for the activities and programs that already exist, additional focus on disease management and the impact of a healthy lifestyle on all areas of health, and improved understanding and promotion of programs/services that exist. The Capstone Project

sought to provide regular physical activity opportunities for preschool aged children, and in doing so fulfill a need in the community, while taking advantage of the opportunities recognized in the SWOT analysis.

Participants in the Capstone Project included, a convenience sample of children in the four year old childcare classroom at a childcare facility, and their parents/caregivers. The four year old age category at the childcare facility was chosen, because one in eight preschoolers are obese (Centers for Disease Control and Prevention, 2013; Mattingly, 2013). These preschool aged children are more susceptible to being overweight or obese as adults (Centers for Disease Control and Prevention, 2013). Additionally, access to occupational therapy services are limited in Madison County, Kentucky after children age out of early intervention services. If a child is able to receive occupational therapy services in an educational setting the services are related solely to educational needs. This program afforded the opportunity to meet needs related to nurturing gross motor skills in the preschool aged population, to facilitate physical activity and movement, which might otherwise go unaddressed. It also provided an opportunity to introduce occupational therapy to populations who may not be aware of the types of intervention or scope of practice encompassed by occupational therapy, and promoted its benefits in the community.

Ethical Considerations

This Capstone Project received approval in February 2015, through Eastern Kentucky University's Institutional Review Board (see Appendix A). Strict adherence to the AOTA Code of Ethics was observed (AOTA, 2010). Participation in the study was voluntary, and all potential participants were provided with full disclosure of the purpose of the study. Parents/caregivers completed informed consent forms, and preschool aged children participating completed informed assent. No consent forms were coerced, and respect for cultural norms of

diverse individuals was observed. Information related to the study was shared with stakeholders in a timely manner while being disseminated honestly, maintaining confidentiality, and avoiding disclosure of harmful information (Creswell, 2014, pp. 95-101).

Resources

The occupational therapist facilitating the project used a locked file cabinet in Eastern Kentucky University's Department of Occupational Science and Occupational Therapy to store data related to the program. The computer used for the Capstone Project was password protected. Resources from the childcare facility, and occupational therapist were used to implement physical activity and gross motor components. A gift card(s) for the program prize drawing was donated from *Pioneering Healthier Communities*.

Evidence of Site Support

The director of the childcare facility granted permission for the programming to take place at the center. The letter of support is attached in the appendix (Appendix B) of the Capstone Project proposal.

Data Collection Methods

Data collection included instituting a precursory semi-structured/open-ended interview and SWOT analysis with board members of *Pioneering Healthier Communities,* acting as key stakeholders, to ascertain primary barriers in the community related to nutritious food consumption and physical activity. This included assessment establishment priority areas for the Capstone Project, and feedback as to appropriate research design and feasibility. The Capstone Project implemented programming with active intervention using descriptive research as a part of the program (Doll, 2010). The Capstone Project sought to include a convenience sample of

fifteen preschool aged children four years of age, and their parents and/or caregivers, serving as a pilot study (Creswell, 2014). The study's independent variables were implementation of a program to promote increased physical activities, and participation in gross motor movement activities.

The Capstone Project partnered with early child care providers and integrated the classroom curriculum, formerly influenced by Head Start, into sensorimotor theme groups providing opportunities for development of gross motor skills and physical activity embedded into a child's naturally occurring environment and daily routine. The investigator, an occupational therapy practitioner in early intervention, attempted to utilize a consultative approach, incorporating parents to the greatest extent possible in the Capstone Project. This was done through provision of opportunities for parents and caregivers to engage in movement activities with their child at daycare each month, and share their family's physical activity or movement experiences in the home. The program afforded opportunities for the researcher to provide information and feedback to parents and caregivers to support their child's gross motor development and engagement in physical activity through monthly newsletters. The researcher provided information and feedback to parents and caregivers to support their child's gross motor development and engagement in physical activity through monthly newsletters.

The Capstone Project took place over a four month time span, beginning in March and ending in June of 2015. It incorporated parental survey, and parent/child movement logs to collect data. The Canadian Occupational Performance Measure (COPM) was intended to be used. However, no forms were returned by parents at the childcare facility. The investigator made personal contact with several parents and the classroom teacher to explore potential reasons for lack of submission. Parents did not see the value in completing these surveys, thus

the COPM as a data measurement was dropped from the program. Parents had the opportunity to compete a parental survey and activity log at the beginning and end of the program to identify the types of movement activities they engaged in with their child.

Based upon literature and current health initiatives, a parent survey was constructed using Likert scales and open ended questions for use prior to the program and after the program was completed. The surveys were reviewed by experts for clarity and content information. The initial parent survey (see Appendix C) sought to identify current movement activities the family participates in together, ascertain how often the family engages in movement activities together, recognize community resources used for movement activities, acknowledge any physical activities they would like to include in their daily activities, and identify barriers and supports for participation in family-centered movement activities. A program outcomes survey (Appendix D) was administered at the end of the program to determine if the programming helped improve the parents' comfort engaging in movement activities with their child, increased the parent ease of accessing resources for physical activity in the community, provided awareness of new movement activities for the family to participate, and identified the perceived level of physical activity after their child participates in the program.

In addition to the sensorimotor groups incorporated into the child's daily routine, parents were invited to partake in movement activities with their child during monthly classroom parties at the childcare center throughout the program, and rate the activity sessions. The investigator also attended the monthly classroom parties. Data was projected to be collected to determine the perceived quality of the session, relevance or age appropriateness of the movement activity to the child, and to determine if the physical activity is something the parents or caregivers would be comfortable engaging in with their child at home. No forms were returned because parents did

not attend the movement component during classroom parties, thus this data collection step was also eliminated. Prolonged exposure and a detailed audit trail promoted validity, and ongoing journaling of investigator's experiences were kept throughout the research process. This ongoing collaboration and visibility of the investigator and the parents was meant to increase visibility of the investigator in the setting, enable the preschool aged children and their families to engage in healthy lifestyle choices and establish rapport.

Procedures

The Capstone Project included parent and child components. Parents completed informed consent on behalf of themselves and their children, as well as liability releases for themselves and their children to participate in the movement programming with the four year old preschool classroom at a Madison County childcare facility. Parents were asked to complete a survey using a Likert scale and open ended questions at the beginning at the program to provide information about the parents' perceptions of engagement in movement activities. This survey can be found in Appendix C. The survey targeted identification of current movement activities the family engaged in together, or co-occupations, identify community resources used for movement activities acknowledge any movement activities they would like to include in their daily activities, identify barriers and supports for participation in family-centered exercise. The survey also ascertained how often the family engages in movement activities together. Parents were also invited to participate and rate in four different movement activities with their child during monthly classroom parties provided at the childcare center during the months of March, April, May, and June. Parents were asked to record their child's engagement in physical activity or movement over a week's time prior to the start or at completion of the movement program. Parents were asked to complete and return the activity log to receive a BINGO card which would

be stamped for completion of the activity log, and all subsequent completions of surveys, assessments, and parental participation in movement activities provided during classroom parties at the daycare. Parents would be able to turn in a winning/completed BINGO card at the end of the movement program to have a chance to win a $25 gift card during a randomized drawing.

The children completed informed assent, and were invited to participate in eight different sensorimotor groups incorporating movement/gross motor activities incorporated into the child's daily routine during the months of March, April, and May. These physical activities promoted development/refinement of gross motor skills for promotion of less sedentary behaviors. The preschoolers engaged in sensorimotor theme groups (Shasby & Schneck, 2005) integrated into the classroom curriculum over a period of four months to promote movement opportunities and target gross motor skills for promotion of less sedentary behaviors. The occupational therapy investigator served as a consultant in the implementation of the material in the classroom setting. Clinical observation and anecdotal information was recorded by the investigator to further identify progress, and provide feedback to parents for further follow through in the home setting, to build movement activities.

Parents were provided information about the movement programming incorporated in the child's daily activities and classroom curriculum through monthly newsletters, based upon investigator observations. At the conclusion of the programming, parents were asked to complete an outcomes survey to evaluate the programming, determine if the programming helped improve the parents' comfort engaging in movement activities with their child, increased the parent or caregivers ease of accessing resources for physical activity in the community, provided awareness of new movement activities for the family to participate, and identify the perceived level of physical activity after their child participates in the program. All parents were

invited to complete a survey at the end of the program, regardless of submission of the initial parent survey. A sample of the survey is located in Appendix D.

Parents received a stamp for each completed data form, and/or participation in a monthly parent/child movement activity at the childcare center. After review of the submitted BINGO cards, it was determined, no parent had provided enough data to have a winning/completed BINGO card. This portion of the Capstone Project Procedures was modified, to provide a ticket to each parent for each individual activity recorded on the Bingo sheet. Each ticket was entered into a randomized drawing for the potential to win a $25 gift card. One gift card was awarded.

Outcome Measures

The Capstone Project served as a pilot program in Madison County, Kentucky. The program's active intervention employed use of a variety of descriptive methods to measure change in a convenience sample of homogenous preschool aged children at a local childcare facility.

The project's active intervention employed use of a variety of methods to measure change. The research sought to include a convenience sample of homogenous preschool aged children, 4 years of age enrolled in the classroom, at a childcare facility, and served as a pilot study (Creswell, 2014). The study's independent variable was implementation of a program to promote increased movement opportunities or physical activities, and provision of parent education about community resources for engagement in physical activity and other ways to engage in developmentally appropriate movement with their child.

Data was used to identify a raised awareness of community resources promoting physical activity, changes in parental perception of their child's participation in movement activities or

physical activity after participating in the program. Ongoing information about the program was shared with participants' families, primarily through monthly newsletters to promote ongoing reflection, to reflect changes to make the program better, and to ensure the program was effectively meeting the needs previously identified. At completion of the program a Likert type outcomes survey was completed for further reflection and modification of the program to better address the needs of its participants during future use. Targeted outcomes for the exercise/movement program were:

- Identification of perceived change in physical activity or movement for a population after participation in physical activity/gross motor programming.
- Identification of local resources for continued engagement in movement activities by children and families/caregivers

This project was designed to be implemented in a manner that was sustainable with potential for growth and expansion. Ongoing assessment and reflection was utilized throughout the process for constant refinement to best serve the needs of the community participants. Through this process the project could be ever evolving to better serve the physical activity needs of the community to promote a healthier population, and support program outcomes.

Data Analysis

The program employed a pretest/posttest design to gather data about the amount of physical activity engaged in, as well as a follow-up at completion of the study to track changes over time. Fifteen preschool aged children enrolled in the four year old classroom at the childcare facility were involved in the program along with their parents. Nominal scales were used to record variable data; coding of sex, race, age, and categorical indicators (Tomita, pp.

215-216). Means, standard deviation, percentages and ranges of scores were calculated for the quantitative data using Microsoft Excel (2013).

Validity

Validity was supported through access to the facility, prolonged exposure, reflexivity, a detailed audit trail, and journaling of the experiences of the researcher adding trustworthiness in data analysis (Lysack, Luborsky, & Dillaway, 2006, p. 352-353). Validity was enhanced during the quantitative program through incorporation of a pretest and posttest, and ongoing collection of data (Nelson, 2006, p. 68). The program took place in the child's naturally occurring environment to minimize artificiality, a threat to external validity (Nelson, 2006, p. 75).

Section 4: Results and Discussion

Introduction

This Capstone Project employed occupation-based methods to support physical activity, and empower parents of preschool aged children to make healthier lifestyle choices by incorporating physical activity into their family's daily occupations to address the needs of the preschool population as it relates to Healthy People 2020's Leading Health Indictor of Nutrition, Physical Activity, and Obesity. It was implemented with the four year old population at a childcare facility in Madison County, Kentucky as a community outreach program to promote healthy lifestyle choices for children and their families. This program has the potential to influence change in the community through promotion of physical activity to promote less sedentary lifestyles.

Results of Evaluation of Project Objectives

Fifteen students were enrolled in the four year old classroom at the childcare facility during spring 2015, and all enrolled students participated in the classroom program. No children were excluded from participation. Nine of the children were female and six were male. Fourteen of the children were Caucasian and one child was identified as Bi-racial. Students in this classroom were four years of age; if a child had a birthday during the year, they would be moved to a five year old classroom, following their birthday. The students enrolled in the four year old classroom were homogenous, representing the composition of Madison County, as identified by U.S. Census data (U.S. Census Bureau, 2014). A confounding variable in the setting was that in the month of May five students aged up (turned 5), and either left or moved to another classroom. During the 4 month period for data collection in the Capstone Project, six students moved up and no additional students joined the Capstone Project.

Although forms were intended for completion by parents or caregivers to allow for increased participation, only parents were involved in this program. Fifteen parents agreed to participate in the program. The participating families reported having between two and seven members in their household. All parents had access to transportation, and delivered their children to the childcare facility daily by personal vehicles. Not all parents completed the survey information, thus Table 1 reflects only the data submitted voluntarily. Reminders were sent to parents to return surveys, however not all parents completed the surveys and/or planned data collection forms. Data is presented in aggregate form. Demographic information about the families is presented in Table 1. None of the 15 parents, participated in the movement component offered during the monthly classroom party family activities. Many parents worked during the day impacting their ability to attend classroom functions. The childcare facility

served working parents. Thus, participation in daytime activities should not be viewed as disinterest. Participation of working parents may be an additional confounding variable.

Table 1

Parent Demographic Information

Table 1. Parent Demographic Information

Characteristic	**n**
Gender	
Pretest	
Male	1
Female	5
Posttest	
Male	2
Female	7
Marital Status	
Pretest	
Married	5
Domestic Partner	1
Posttest	
Married	3
Single	3
Divorced	2
Domestic Partner	1
Educational Preparation	
Pretest	
High School	0
College	6
Posttest	
High School	1
College	8
Age	
Pretest	32-38
Posttest	*24-51*

*The parents that completed the pre and post program surveys may not have been the same individuals. As noted, fifteen families agreed to participate in the program with their children. Data represents those that chose to turn in their forms. This data is shared to get a general picture of participants.

Pretest information received from the parent survey provided information on (Questions 1-5). This data is presented in Table 2. The table presents total responses by percent to the

question, the mean scores along with the range of scores recorded. The range of scores is reflective of the minimum and maximum responses to the five statements on a Likert Scale with Strongly Disagree (1) and Strongly Agree (5). The pretest provided demographic information, and information about parent or caregiver engagement in physical activity, while identifying supports and barriers to physical activity in their home environment and community. Initially, all parents who chose to be involved in the movement/physical activity programming promoting gross motor skills has some college education. Observational data gathered during the initial assessment suggested a relationship exists between a parent or caregiver's educational background, age, accessibility to transportation, and engagement in movement or physical activities, as parents or caregivers who chose to be involved in the program all had some college education, were in there thirties, and had access to transportation.

Data from the parents or caregivers indicated engaging in movement or physical activities such as cleaning house, vacuuming, walking their dog, helping shop for groceries, playing tag, swimming, skating, indoor soccer, hiking, outdoor play, running, playing in the snow, jumping on a trampoline, biking, dancing with the *Wii Just Dance* program, and playing at parks with their children. Parental awareness of health and wellness influences activity choices. Of interest on the pretest data, families identified a high level of comfort engaging in movement/physical activities with their children. Parents indicated they engaged in movement/physical activity with their children at least three or more days a week. The majority of parents reported having adequate outdoor space for large motor physical activity. Parental perceptions were divided in regards to the community providing opportunities and/or resources for movement, and their use of community resources to engage in movement. Parents reported a desire to walk and bike more.

Community Resources

One question on the pretest survey asked about the community resources the families used in the local community. Initial data identified four community resources in Madison County by parents or caregivers utilized for engagement in physical activity with their child. These included the Telford YMCA, Lake Reba Park and Pool, Million Park, and Richmond Skate Center. A visual representation of this data (see appendix) offers a method of interpretation.

Table 2

Parental Perceptions Prior to Capstone Project

	Percentile	**Mean**	**Min**	**Max**
Comfortable Engaging in Movement Activities with Preschooler	**100%**	**5**		**5**
Engage in Movement Activities 3 or more days a week	**90%**	**4.5**	**4**	**5**
Engage in Movement Activities 5 or more days a Week	**70%**	**3.5**	**2**	**5**
Adequate Outdoor Space for Large Motor Physical Activity	**83%**	**4.2**	**2**	**5**
Community Provides Opportunities and/or Resources for Movement	**77%**	**3.8**	**1**	**5**
Family uses Community Resources to Engage in Movement	**70%**	**3.5**	**1**	**5**

Note: Strongly Disagree =1 and Strongly Agree = 5 on Likert scale responses to each question.

Post Test data received from the parent survey provided information to determine if the programming helped improve the parent or caregiver's comfort engaging in movement activities with their child, increased the parent or caregiver's ease of accessing resources for physical activity in the community, provided awareness of new movement activities for the family to participate, and identify the perceived level of physical activity after their child participates in the program. This information is presented in Table 3. The table presents total responses by percent of responses to the question, the mean scores along with the range of scores recorded. The range of scores is reflective of the minimum and maximum responses to the five statements on a Likert Scale with Strongly Disagree (1) and Strongly Agree (5). Of note in this data is the range of scores.

Parents reporting after their child participated in the movement component of the Capstone Project indicated an increased level of comfort engaging in movement activities with their child. The parents reported the program had provided new opportunities for family-centered movement activities. The majority of parents reported a higher level of physical activity for their child after participating in the movement/gross motor component of the Capstone Project. Parents also reported a higher level of comfort accessing community resources for engagement in movement/physical activity.

Table 3

Program Outcomes Survey at Conclusion of Capstone Project

	Percentile	Mean	Min	Max
After participating in the program my family engaged in more movement activities together.	**78%**	**3.9**	**3**	**5**
After participating in the program I am more comfortable engaging in movement activities with my child.	**80%**	**4**	**3**	**5**
After participating in the program I am more comfortable accessing resources in the community to continue to engage in movement activities.	**80%**	**4**	**3**	**5**
The program has provided new opportunities for family-centered movement activities.	**80%**	**4**	**3**	**5**
My child is more active after participating in the program.	**82%**	**4.1**	**3**	**5**

Note: Strongly Disagree =1 and Strongly Agree = 5 on Likert scale responses to each question.

Parent activity logs were received for three participants. The activity log provided qualitative data about types of activities the children and their families engaged in during the project. The logs were intended to be prior to the beginning of the program, and again at the conclusion for pre and posttest comparison. However, parents did not adhere to this request. Incentives were used, however were not effective with this group.

Activity logs were analyzed using apriori coding of data categorizing the data using the Occupational Therapy Practice Framework III (AOTA, 2014b). Most frequently noted was play participation involving co-occupations with other family members such as a parent or sibling (AOTA, 2014b). Another area addressed was Individual Activities of Daily Living, (IADL's), including care of pets, home establishment and management, shopping, and most identified as co-occupations with a parent (AOTA, 2014b, S19).

Discussion of Findings of the Project

Initially, all parents who chose for their children to be involved in the movement/physical activity programming project promoting gross motor skills possessed some college education. This is typical of Madison Co. Kentucky (U.S. Census Data, 2014). It further suggests parental awareness of health and wellness influences activity choices. The preliminary results suggest education is critical in changing behaviors for a healthy society. Based upon the Health Belief Model an understanding of individual perceptions is key for change to take place, followed by empowerment through education and awareness (Health Belief Model 2014). It indicated increased accessibility of community resources could be helpful to promote increased physical activity and movement. Initial data identified four community resources in Madison County by parents or caregivers utilized for engagement in physical activity with their child. These included the Telford YMCA, Lake Reba Park and Pool, Million Park, and Richmond Skate Center. Parent's work commitments impeded their ability to participate in movement programming embedded into the classroom schedule.

MOHO considers the way people occupy there time through activities of daily living, play, and productivity, while viewing through the lens of volition, habituation, performance capacity, and environmental contexts (Kielhofner, 2004a, p. 5; Kielhofner, 2004b, p. 12).

Incorporation of this model provided a more "holistic" insight into daily occupations of the child, and their family, as well as potential barriers to engagement in physical activity/movement (Kielhofner, 2004a, p. 1). According to the program outcomes survey, most parents/caregivers reported engaging in more movement activities together, being more comfortable engaging in movement activities with their child, being more comfortable accessing resources in the community to engage in physical activity. Most parents indicated the Capstone Project provided new opportunities for family-centered movement activities, and there child was more active after participating in the program. Thus the outcomes of the Capstone Project were met.

Strengths and Limitations

This pilot programming provided an opportunity to provide opportunities to enhance the gross motor skills of a preschool population to enable and equip preschool aged children with the skills needed to engage in movement and physical activity. It afforded an opportunity for the profession of occupational therapy to raise awareness of its ability to meet needs in community based programming. Programming with sensorimotor groups could be aligned with the classroom curriculum, and utilize existing resources allowing programming to be implemented at a relatively low cost. Sensorimotor groups can be refined, adapted, and reused in other preschool aged classroom settings. Limitations of the study included a small sample size, lack of control group, and parental work schedules impacting their ability to participation in classroom based movement opportunities. Other limitations included attrition rates, as the childcare setting had children transitioning to other classrooms or moving throughout the duration of the program.

Implications for Practice

AOTA's *Societal Statement on Obesity* addresses the prevalence of obesity, factors influencing obesity, and health conditions related to obesity, and the potential role of occupational therapy in effectively and sustainably addressing weight management by addressing daily habits, roles, and patterns (AOTA, 2007b; AOTA, 2012). AOTA discusses the potential occupational therapy has to address obesity in a wide array of settings, its qualification to address bariatrics, and potential sources of reimbursement (2007b). AOTA's position on obesity asserts the profession is able to prevent and address obesity concerns using a holistic and client-centered approach to engage in activities to promote health (2007b).

Occupational therapy practitioners have the unique opportunity to be a part of the changing face of healthcare due to implementation of the Affordable Care Act (Rosenbaum, 2011). Healthcare delivery is moving from a "fee-from-service" system to a "pay for performance", where emphasis is placed on accountability through meeting outcomes and providing effective health care interventions (James, Dambert, Ryan, Agres, Schwartz, & Dentzer, 2012 para 1 & 4; Rosenbaum, 2011). The Affordable Care Act provides a wider range of opportunities for healthcare professionals, including occupational therapists, to address population health through "community investments" promoting health and 'wellness" (Rosenbaum, 2011, para 4 & 12).

AOTA recognizes in its Centennial Vision that "occupational therapy is a powerful, widely recognized, science-driven, and evidence-based profession with a globally connected and diverse workforce meeting society's occupational needs," (2007a, p. 614). Addressing nutrition, physical activity, and obesity through intervention provides opportunities to meet society's occupational needs, contribute to the profession's evidence base, promotes further research,

facilitates collaboration with other professions, while aligning with Kentucky Governor's Health Goals for 2019 seeking to target obesity by reducing physical inactivity in the preschool population through collaboration with early child care providers; and Healthy People 2020's Leading Health Indicator of Nutrition, Physical Activity, and Obesity (AOTA 2007a; Commonwealth of Kentucky, 2015; U.S. Department of Health and Human Services, 2013). It also promoted increased visibility of occupational therapy in the community. Occupational therapists must stay aware and involved in policy creation and implementation at all levels. This Capstone Project reinforces the need for understanding policy, and evolving to meet the changing needs of our population and healthcare system.

Future Research

This Capstone Project demonstrated the opportunity provided through classroom curriculums to collaborate with other professions; and relative ease of incorporating gross motor skill development through movement to promote increased physical activity in a classroom curriculum. Parents responded positively to participation in the programming promoting movement. This provides implications for potential interventions among other preschool populations in the community setting, as well as other educational settings with collaboration from occupational therapists and educators. Caregivers should also be considered, as many grandparents and foster parents are providing engagement with young children as a proxy for parents.

Assessments within the field of occupational therapy and other health sciences were limited in regards to obesity and community based programming. Current assessments related to occupations were approached from a deficit standpoint, and were not necessarily relevant to community based programming (Lin, 2015). There is a newer approach in occupational therapy

mental health practice for use in community mental health settings following the "client-centered" "solution and strength focused" assessment appropriate for mental health practice (Ghul, n.d., p. 1 & 5). This demonstrates a need for further development of assessments/evaluations related to community programming in areas related to health promotion.

Summary

This program was designed to address Kentucky Governor's Health Goals for 2019 seeking to target obesity by reducing physical inactivity in the preschool population through collaboration with early child care providers, Healthy People 2020's Leading Health Indicator of Nutrition, Physical Activity, and Obesity, aligning with occupational therapy's centennial vision by meeting society's occupational need contributing to the profession's evidence base, promoting further research, and facilitating collaboration with other professions to promote change, while empowering families and children in the community to adopt healthy eating strategies and engage in physical activity through program design and implementation (AOTA, 2007a; Commonwealth of Kentucky, 2015; U.S. Health and Human Services, 2013).

The Capstone Project's targeted outcomes were identification of perceived change in physical activity or movement for a population after participation in physical activity/gross motor programming; and identification of local resources for continued engagement in movement activities by children and families/caregivers. Results of the pilot program indicated most parents/caregivers reported engaging in more movement activities together, being more comfortable engaging in movement activities with their child, being more comfortable accessing resources in the community to engage in physical activity. Most parents indicated the program provided new opportunities for family-centered movement activities, and there child was more active after participating in the program. The Capstone Project demonstrated the feasibility of

incorporating gross motor activities into a classroom curriculum to enable children to more fully participate in physical activity, rather than engaging in sedentary behavior/play placing them at risk for childhood obesity and co-occurring medical conditions. Limitations of this pilot program included a small sample size, and lack of a control group. Other limitations included attrition rates, as the childcare setting had children transitioning to other classrooms or moving throughout the Capstone Project.

References

American Occupational Therapy Association (2014a). Emerging niche: Childhood obesity. *Practice.* Retrieved from http://www.aota.org/en/Practice/Children-Youth/Emerging-Niche/Childhood-Obesity.aspx

American Occupational Therapy Association (2014b). Occupational therapy practice framework: Domain and Process (3rd ed.). *American Journal of Occupational Therapy, 68*(Suppl. 1.), S1-S48. http://dxloi/org/10.5014ajot.2014.682006).

American Occupational Therapy Association (2013). Obesity and occupational therapy. *American Journal of Occupational Therapy, 67*(6), S39-46.

American Occupational Therapy Association (2012). AOTA's societal statement on obesity. *American Journal of Occupational Therapy, 66*(6), 581-582.

American Occupational Therapy Association (2010). *Occupational therapy code of ethics and ethics standards*. Retrieved from http://www.aota.org/~/media/Corporate/Files/AboutOT/Ethics/Code%20and%20Ethics%20Standards%202010.ashx

American Occupational Therapy Association (2007a). AOTA's centennial vision and executive summary. *American Journal of Occupational Therapy, 61*, 613-614.

American Occupational Therapy Association (2007b). Obesity and occupational therapy (Position paper). *American Journal of Occupational Therapy, 61*(6), 701- 703.

Amis, J., Wright, P., Dyson, B., Vardaman, J., & Ferry, H. (2012, July). Implementing childhood obesity policy in a new educational environment: the cases of Mississippi and Tennessee. *American Journal of Public Health, 102*(7).

Aschbacher, G. (2013, September 19). New data shows child poverty remains high. *Kentucky Youth Advocates.* Retrieved from http://kyyouth.org/new-data-shows-child-poverty-remains-high/

Bellows, L., Davies, P., Anderson, J., & Kennedy, C. (2013). Effectiveness of a physical activity intervention for Head Start preschoolers: A randomized intervention study. *American Journal of Occupational Therapy, 67*, 28-36.

Bellows, L., Spaeth, A., Lee, V., Anderson, J. (2013). Exploring the use of storybooks to reach mothers of preschoolers with nutrition and physical activity messages. *Journal of Nutrition, Education, and Behavior, 45*(4), 362-367.

Blankenau, J. (2009). Nutrition, physical activity, and obesity in rural America: A series examining health care issues in rural America, *Center for Rural Affairs (1),* 1-6. Retrieved from http://files.cfra.org/pdg/Nutrition-Physical-Activity

Burchett, M. (2013). Study says obese children may have quadruple the risk of having high blood pressure as adults. *The Lane Report.* Retrieved from http://www.lanereport.com/24347/2013/09/study--says-obese-children-may-have-quadruple

Cahill, S.M., & Suarez-Balcazar, Y. (2009). The Issue Is—Promoting children's nutrition and fitness in the urban context. *American Journal of Occupational Therapy, 63,* 113-116.

Centers for Disease Control (2013). *Chronic disease policy*. Retrieved from http://apps.nccd.cdc.gov/CDPHPPolicySearch/Default.aspx

Centers for Disease Control and Prevention (2013). Progress on childhood obesity. *CDC vital signs.* Retrieved from http://www.cdc.gov/vitalsigns/childhoodobesity/

Centers for Disease Control and Prevention (2008). *Kentucky obesity statistics*. Retrieved from http:/www.belly-fat-health-news.com/Kentucky-obesity.html

Centers for Disease Control and Prevention (2010). *Kentucky's response to obesity.* Retrieved from http://www.cdc.gov/obesity/stateprograms/fundedstates/kentucky.html

Child Care Center US (2014). *Information for Richmond child care center, a child care center licensed type I in Richmond KY*. Retrieved from http://childcarecenter.us/provider_detail/57027_richmond_child_care_center_richmond_ky

Christiansen, C., & Matuska, K. (2006). Lifestyle balance: A review of concepts and research. *Journal of Occupational Science, 13*(1). 49-61.

Commonwealth of Kentucky (2014). About STARS. *Kentucky cabinet for health and family services: Department for community based services.* Retrieved from http://chfs.ky.gov/dcbs/dcc/stars/aboutstars.htm

Commonwealth of Kentucky (2012a). Early childhood standards: 2013. *Kentucky governor's office of early childhood.* Retrieved from

http://kidsnow.ky.gov/School%20Readiness/Pages/Early-Childhood-Standards-2013.aspx

Commonwealth of Kentucky (2012b). STARS for kids now. *Kentucky governor's office of early childhood*. Retrieved from http://kidsnow.ky.gov/Improving-Early-Care/Pages/STARSforKIDSNOW.aspx

Creswell, J. (2014). The selection of a research approach. In J. Creswell (Ed.), *Qualitative, Quantitative, and Mixed Methods Approaches.* (4th Ed.). Thousand Oaks, CA: Sage.

Commonwealth of Kentucky (2015). *Kyhealthnow 2019 goals.* Retrieved from http://governor.ky.gov/healthierky/kyhealthnow/pages/default.aspz

Davison, K., Jurkowski, J., Li, K., Kranz, S., & Lawson, H. (2013). A childhood obesity intervention developed by families for families: results from a pilot study. *International Journal of Behavioral Nutrition and Physical Activity, (10)*3, 1-11 http://www.ijbnpa.org/content/10/1/3

Doll, J. (2010). Program development and grant writing in occupational therapy: Making the connection. Sudbury, MA: Jones and Bartlett.

Eisenmenger, S. (2013). National childhood obesity awareness month, *WAVE3 news.* Retrieved from http://northeastkentucky.wave3.com/news/health/444603-national-childhood-obesity-awareness

Eyler, A., Nguyen, L., Kong, J., Yan, Y., & Brownson, R. (2012). Patterns and predictors of enactment of state childhood obesity legislation in the United States: 2006-2009. *American Journal of Public Health, 102*(12).

Ghul, R. (n.d.). Introduction. In Duncan, Ghul, Mousley, (Ed.), *Creating Positive Futures: Solution Focused Recovery From Mental Distress*. (p. 1-11.) United Kingdom: BTPress. Retrieved from http://www.btpress.co.uk/0014_Creating_Positive_Futures_sample.pdf

Haracz, K., Ryan, S., Hazelton, M., & James, C. (2013). Occupational therapy and obesity: An integrative literature review. *Australian Occupational Therapy Journal, 60,* 356-365.

Harkin, T. (2007). Preventing childhood obesity: The power of policy and political will. *American Journal of Preventive Medicine, 33*(4S), S165-S166.

Health Belief Model. (2014). Health belief model. *University of Twente.* Retrieved from http://www.utwente.nl/cw/theorieenoverzicht/theory%20clusters/health%20communication/health_belief_model/

Healthy Americans (2009). New report finds Kentucky has 7th highest percent of obese adults and 4th highest percent of obese and overweight children in the US. Retrieved from http://healthy americans.org/reports/obesity2009/release.php?stateid_KY

James, J., Damberg, C., Ryan, A., Agres, T., Schwartz, A., Dentzer, S. (2012). Health policy brief: Pay-for-performance. *Health Affairs (34)*7. Retrieved from http://www.heatlhaffairs.org/healthpolicybriefs/brief.php/brief_id-78

Kaiser Education (2013). *U.S. healthcare costs*. Retrieved from http://www.kaiseredu.org/Issue-Modules/US-Health-Care_Costs/Background-Brief.aspx

Kaprowy, T. (2012) Child obesity in KY a deep rooted problem. *NPR Kentucky.* Retrieved from http://healthyamericans.org/newsroom/news/?Nesid-2475

Kentucky Cabinet for Health and Family Services. (2013). CDC obesity. *Obesity grants.* Retrieved from http:chfs.ky.gov/dph//mch/ns/CDC+Obesity+Grants

Kentucky Center for Education and Workforce Statistics. (2014). 2014 early childhood profile. *Madison County.* Retrieved from: http://kcews.ky.gov/Reports/EarlyChildhoodProfile/EarlyChildhood2014.aspx

Kentucky Early Childhood Standards (2013). Alignment of standards and benchmarks. Retrieved from http://issuu.com/kidsnow/docs/kyecs?e=8827074/4741174

Kentucky Youth Advocates (2013). Obesity. Retrieved from http://kyyouth.org/health/obesity

KidsCount (2014a). Early childhood obesity. Retrieved from http://datacenter.kidscount.org/data/tables/6684-early-childhood-obesity?loc=19&loct=2#detailed/2/any/false/133,38,35,18,17/any/13739,13740

KidsCount (2014b). Children and teens not exercising regularly. Retrieved from http://datacenter.kidscount.org/data/tables/28-children-and -teens-not-exercising-regularly?loc=19&loct=2

Kielhofner, G. (2004a). Introduction to the model of human occupation. In Kielhofner, (4th Ed.), *Model of Human Occupation: Theory and Application.* (p. 1-7.) Philadelphia: Lippincott Williams & Wilkins.

Kielhofner, G. (2004b). The basics of human occupation. In Kielhofner, (4th Ed.), *Model of Human Occupation: Theory and Application.* (p. 10-23.) Philadelphia: Lippincott Williams & Wilkins.

Lang, J., James, C., Asby, W., Plotnifkoff, R., Guest, M., Kable, Collins, C., & Snodgrass, S. (2013). The provision of weight management advice: An investigation into occupational therapy practice. *Australian Occupational Therapy Journal*, *60*, 387-394.

Larson, N., Ward, D. Neelon, S., Story, M. (2011). What role can child-care settings play in obesity prevention? A review of the evidence and call for research efforts. *Journal of the American Dietetic Association 111*(9), 1343-1362.

Lin, D. (2015, June 10). Any holistic strengths-based assessments out there? [AOTA Blog Post]. Retrieved from https://www.linkedin.com/grp/post/164655-6006203096122802176#commentID_-1

Luttikhusi, H., Baur, L, Jansen, H., Shrewsbury, V., Malley, C., Stolk, R., & Summerbell, C. (2009). Interventions for treating obesity in children. Retrieved from http://onlinelibrary.wile.com/doi/10.1002/14651858.CD001872.pub2/abstract

Lysack, C., Luborsky, M., & Dillaway, H., (2006). Gathering qualitative data. In Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiry for enhancing practice.* Philadelphia: F.A. Davis.

Mattingly, J. (2013). Health: Kentucky steady on childhood obesity rate. *Health Department.* Retrieved from http://www.state-journal.com/specturm/2013/08/17/health-kentucky-steady-childhood-obesity-rate

Microsoft Excel (2013). [Computer software]. Redmond, Washington: Microsoft.

Moran, M. (2013). AMA declares obesity disease requiring treatment. *Psychiatric news.* Retrieved from http://psychnews.psychiatryonline.org/doi/full/10.1176/appi.pn.2013.7b16

Nelson, D. (2006). Group comparison studies: Quantitative research designs. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiries for enhancing practice* (p. 478-485.) Philadelphia: F.A. Davis.

Ogden, C., & Carroll, M. (2010, June). Prevalence of obesity among children and adolescents: United States, trends 1963-1965 through 2007-2008. *Centers for Disease Control: National Center for Health Statistics.*

Rosenbaum, S. (2011). The patient protection and affordable care act: Implications for public health policy and practice. *Public Health Report 126*(1); 130-135. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3001814/

Second Sunday (2014). Events. *University of Kentucky Cooperative Extension Office.* Retrieved from http://2ndsundayky.org/about-2s.htm

Shasby, S., & Schneck, C. (2005). Use of sensorimotor theme groups to enhance developmental skills in preschool and kindergarten children. *School System: Special Interest Section Quarterly*, *12*(4), 1-3, 6.

Tai-Seale, T., & Chandler, C. (2003). Nutrition and overweight concerns in rural areas: A literature review. *Rural Healthy People 2010: A companion document to healthy people*

2010. Volume 2. College Station. TX: The Texas A&M University Health Science Center, School of Rural Public Health. Southwest Rural Health Research Center. Retrieved from http://srph.tamhac.edu/centers/rhp2010/09Volume1nutrition%20.htm

Taylor, R., Suarez-Balcazar, Y., Forsyth, K., & Kielhofner, G. (2006). Participatory Research in Occupational Therapy. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiry for enhancing practice* (pp. 620-631). Philadephia, PA: F.A. Davis.

Tomita, M., (2006). Making meaning from numbers: Measurements and descriptive statistics. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiries for enhancing practice* (p. 214-231.) Philadelphia: F.A. Davis

Townsend, E., Stone, S., Angelucci, T., Howey, M., Johnston, D., & Lawlor, S. (2009). Linking occupation and place in community health, *Journal of Occupational Science, 16*(1), 50-55.

United Health Foundation. (2014). Kentucky. *America's Health Rankings.* Retrieved from www.americashealthrankings.org/KY

U.S. Census Bureau (2014). *Madison county quickfacts*. Retrieved from http://quickfacts.census.gov/qfd/states/21/21151.html

U.S. Department of Health and Human Services. (2013). *Healthy People 2020*. Retrieved from: http://www.healthy people.gov/2020/default.aspx

Wang, Y., Orleans, T., & Gortmaker, S. (2012). Reaching the healthy people goals for reducing childhood obesity: Closing the energy gap. *American Journal of Preventative Medicine, 42*(5). 437-444.

Waters, E., Sanigorski, A., Vurford, B., Brown, T., Campbell, K., Gao, Y., Armstrong, R., Prosser, L, & Summerbell, C. (2011). Interventions for treating obesity in children. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001871.pub3/abstract

Wen, L., Baur, L., Simpson, J., Rissel, C., Wardle, K., Flood, V. (2012). Effectiveness of home based early intervention on children's BMI at age 2: Randomized controlled trial. *BMJ, 344e3732.* Doi: 10.136/bmju.e3732

Wicks, A., & Jamieson, M. (2014). New ways for occupational scientists to tackle "wicked problems" impacting population health. *Journal of Occupational Science. 21*(1). 81-85.

Woodruff, M. (2013). Health care costs are still rising faster than workers can keep up. *Business Insider.* Retrieved from http://www.businessinsider.com/health-care-costs-are-still-rising-faster-than-workers-can-keep-up-2013-8

IRB Protocol Number:

Institutional Review Board
Application for Expedited/Full Review

1. **Title of Project:**
   Community Based Programming Promoting Movement
2. **Principal Investigator/Faculty Advisor:**
   Principal Investigator Name: Jennifer Hight, M.S. OTR/L
   Department: Occupational Therapy
   Email Address: Jennifer_Hight@mymail.eku.edu
   Mailing Address: [redacted]
   Campus Phone #: _____ Off Campus Phone #: [redacted]
   Faculty Advisor (required if PI is an EKU student): Dr. Shirley O'Brien and Dr. Colleen Schneck
3. **Other Investigators:** Identify all other investigators assisting in the study. Attach additional pages if needed.
   Name:_____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
   Name: _____ Authorized to obtain consent? ☐YES ☐NO
   Responsibility in Project: _____
4. **Study Period of Performance:** upon IRB approval through 8/31/2015
   Note that research may not begin until IRB approval has been granted.
5. **Funding Support:** Is the research study funded by an external or internal grant or contract?
   ☒NO ☐YES
   Funding Agency: _____
   Copy of funding application narrative attached? ☐YES (required if study is funded)
6. **Risk Category:**
   ☒Not greater than minimal risk. Minimal risk means, "The probability and magnitude of physical or psychological harm that is normally encountered in the daily lives, or in the routine medical, dental, or psychological examination of healthy persons."
   ☐Greater than minimal risk, but of direct benefit to individual participants
   ☐Greater than minimal risk, no direct benefit to individual participants, but likely to yield generalizable knowledge about the subject's disorder or condition
   ☐Research not otherwise approvable which presents an opportunity to understand, prevent, or alleviate a serious problem affecting the health or welfare of participants
7. **Type of Review:** ☐Full Review (skip item #8 below) ☒Expedited Review (complete item #8 below)
8. **Expedited Review Categories:** If the proposed study represents not greater than minimal risk, and all activities fall within one or more of the categories below, the study is eligible for expedited review. Please check all applicable categories of research activities below.
   1) ☐ Clinical studies of drugs and medical devices only when condition (a) or (b) is met.
      (a) ☐ Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review.)
      (b) ☐ Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.
   2) ☐ Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows:

1

Appendix A

IRB Documents

(a) ☐ From healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or
(b) ☐ From other adults and children considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

3) ☐ Prospective collection of biological specimens for research purposes by noninvasive means. Examples: (a) Hair and nail clippings in a nondisfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.

4) ☒ Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications.) Examples: (a) Physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy; (b) weighing or testing sensory acuity; (c) magnetic resonance imaging; (d) electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography; (e) moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

5) ☒Research involving materials (data, documents, records, or specimens) that have been collected or will be collected solely for non-research purposes (such as medical treatment or diagnosis). (Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45.CFR 46.101(b)(4). This listing refers only to research that is not exempt.)

6) ☒Collection of data from voice, video, digital, or image recordings made for research purposes.

7) ☒Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects 45 CFR 46.101 (b)(2) and (b)(3). This listing refers only to research that is not exempt.)

8) ☐Continuing review of research previously approved by the convened IRB as follows:
(a) ☐Where (i) the research is permanently closed to the enrollment of new subjects; (ii) all subjects have completed all research-related interventions; and (iii) the research remains active only for long-term follow-up of subjects; or
(b) ☐ Where no subjects have been enrolled and no additional risks have been identified; or
(c) ☐ Where the remaining research activities are limited to data analysis.

9) ☐ Continuing review of research, not conducted under an investigational new drug application or investigational device exemption where categories two (2) through eight (8) do not apply but the IRB has determined and documented at a convened meeting that the research involves no greater than minimal risk and no additional risks have been identified.

2

Appendix A

IRB Documents

9. Background:

a. Provide an introduction and background information for the study and provide a discussion of past research findings leading to this study. Cite literature that forms the scientific basis for the research.

Kentucky's childhood obesity rate negatively impacts a child's quality of life, ability to engage in daily occupations, while contributing to rising heathcare costs (Blankenau, 2009; Burchett, 2013; Eisenmenger, 2013; Healthy Americaans, 2009: Kaiser, 2013: kaprowy, 2012; Mattingly, 2013; Tai-Seale & Chandler, 2003). Nationwide, preschool and adolescent obesity has doubles since the 1970's and tripled among children six to 11 years old, with one in eight preschoolers obese (Mattingly, 2013; Ogden, Flegal, Carroll & Johnson, 2002, as cited in Wang, Orleans, & Gortmaker 2012). Kentucky currently ranks 42nd in obesity rates for America, and 46th for sedentary lifestyles or lack of physical activity (United health Foundation, 2014). Kentucky has the third highest childhood obesity rate in the United States (Kaprowy, 2012). Most Kentucky counties have obesity levels over 30% (Centers for Disease control as cited by Kentucky Obeisty Statisitics, 2008; Kaprowy, 2012). Statistics form the 2002 Pediatric Nutrition Surveillance System show about 17 percent of children between the ages of two and four are already overweight, and can benefit from a nutritional counseling program targeting obesity and encouraging physical activity (Kentucky Cabinet for Healthy and Family Services, 2013). In Kentucky, 16% of children two to five years are overweight and 15.6% are obese (Centers for Disease Control and Prevention, 2010). Obesity increases the risk of coronary heart disease, is linked to Type II Diabetes, hypertesion, stroke, some cancers, can contribute to sleep apnea, asthma, and is the second leading cause of death (Blankenau, 2009; Kaprowy, 2012; Mattingly, 2013). Obese children have a four times higher chance of having high blood pressure as adults (Burchett, 2013). Obesity can impact emotional healthy by lowering self-esteem and producing depression (Blankenua, 2009: Kaprowy, 2012).

According to the Kaiser Insititute, chronic diseases account for 75% of national health expenditures (Kasier, 2013). "In particular, there has been tremendous focus on the rise in rates of overweight and obesity and their contribution to chronic illnesses and health care spending" (Kaiser, 2013, para 5). Approximately $100 billion a year is spent on obesity-related illness (Tai-Seale & Chandler, 2003). Risa Lavizzo Mourey, M.D., M.B.A. of the Robert Wood Johnson Foundation identifies a need to address childhood obesity in order to help control healthcare costs and promote a healthy population with an improved quality of life (Healthy Americans, 2009). Many causal factors have been linked to childhood obesity including lack of physical activity (Kaprowy, 2012; Mattingly, 2013). Factors influencing healthy lifestyles include: reduced opportunites for physical education, sedentary lifesyles, access to safe areas to play, and parental schedules (Kaprowy, 2012, Harkin, 2007, Mattingly, 2013, Ogden & Carroll, 2010). The Centers for Disease Control, or CDC, recommends improved nutrition and physical activity in daycares with limited screen times, and partnering with community members (CDC as cited by Mattingly 2013).

Healthy People 2020 identify nutrition, physical activity, and obesity as a Leading Health Indicator, seeking to reduce the prevalence of childhood obesity 14.6% by 2020 (U.S. Department of Health and Human Services, 2013). The American Occupational Therapy Associations Societal Statement on Obesity addresses the prevalence of obesity, facors influencing obesity, and health contitions related to obesity (AOTA, 2012). It idenfities the role of occupational therapy in relation to obesity, identifies its correlation with the first goal of Healthy People 2020, and explores the definition of disability as dicussed by the World Health Organization as it influences the individuals' ability to participate in daily life (AOTA, 2012). The statement addresses the effectiveness of long-term and short-term weight loss, and the unique way occupational therpay can provide intervention to address weight management that is both effective and sustainbable by addressing daily habits, roles, and patterns (AOTA, 2007). AOTA's position on obesity asserts the profession is able to prevent and address obesity concerns using a holistic and client-centered approach to engage in activities to promote health (2007). Although childhood obesity has been identified as a problem with may contributing factors, a paucity of research is available addressing effective strategies to prevent or reduce childhood obesity.

The focus of this pilot community based programming using a mixed-methods research approach is to raise awareness of resources available in the commuity to support movement, empower parents of preschool children to make healthier lifestyle choices by incorporating movement in their family's daily occupations, and promote movement to reduce sedentary activities in the preschool population (Williams et al., 2008: Wrotniak, Epstein, Dorn, Jones, & Kondilis, 2006, as cited by Bellows, Davies, Anderson, & Kennedy, 2013). It will be implemented with the four year old population at the [redacted] Kentucky as a community outreach program to promote movement opportunities for children and their families, as supported by the classroom curriculum and STARS for KIDS NOW (STARS)

3

Appendix A

IRB Documents

a voluntary rating system for child care centers in Kentucky (Commonwealth of Kentucky 2014; Commonwealth of Kentucky, 2012).

[redacted]

The program will use a mixed-method approach to assess program outcomes, and change over time. The research will use a covenience sample of preschoolers four years of age, and their parents and/or caregivers, serving as a pilot study (Creswell, 2014). The study's independent variable will be implementation of a program to promote parental perception of increased movement.

Parent surveys will be administered to identify current movement activities the famiy engages in together, or co-occupations, identify community resources used for movement activities, acknowledge any movement activities they would like to include in their daily activities, identify barriers and supports for participation in family-centered exercise. Participants will complete the Canadian Occupational Performance Measure, or COPM, an assessment commonly used in occupational therapy, to measure the family's perceived "performance and satisfaction" in "self-care, productivity, and leisure over time" (Canadian Occupational Performance Measure, 2014). A family movement log will be completed a week prior to the exercise program's kickoff. Parents will be asked to provide a list of family-centered movement activities for one seven day week (Sunday - Saturday). Upon returning the family movement log, the parents will receive a Bingo Card. The participants will get a space stamped for completing the family movement log. Each time the parent and child participates in a movement activity of their choice during the duration of the program (February, 2015 - May, 2015) they can earn a stamp, including activities provided [redacted] A completed/winning BINGO card will be accepted alongside another family movement log as part of a drawing for the grand praize (gift card for a local establishment) at the summation of the program. The family movement logs will provide pretest/posttest data to determine if changes of "statistical signigicance" have occurred (Polit & Beck, 2012, as cited by Wilson, 2014, p. 495).

10. Research Objectives:

a. List the research objectives.

* Does participation in movement programming demonstrate perceived change in movement for a population?

11. Subject Population:

a. What criteria will be used to determine the *inclusion* of participants in the study?

Convenience sample of preschoolers four years of age or in the four year old classroom [redacted] and their parents or caregivers.

b. What criteria will be used to determine the *exclusion* of participants in the study?

No children or parents/caregivers outside of the four year old classroom [redacted]

c. Anticipated Number of Participants *(maximum):* 28 preschoolers, 56 parents/caregivers, 84 total

d. Age Range of Participants: 4 years or inclusion in four year old classroom [redacted] and their parents/caregivers

e. Gender of Participants: ☐ Male ☐ Female or ☒Gender not relevant to study

f. Ethnicity of Participants: _____ or ☒Ethnicity not relevant to study

g. Health Status of Participants: According to the classroom teacher [redacted], all pediatric participants are healthy with no pre-existing health conditions. or ☐Health status not relevant to study

4

Appendix A

IRB Documents

b. What procedures will be followed to ensure that potential participants are informed about the study and made aware that their decision to participate is voluntary?

Inlcusionary statement in letter inviting participation

c. How will consent be documented?

Signed documentation, Informed Consent and Assent Forms, Parental/Caregiver Permission

d. What consent documents will be used in the study? (Attach copies of all). ☒Informed Consent Form, ☒Parent/Guardian Permission Form, ☒Child/Minor Assent Form, ☐ Oral Script, ☐Other:

15. Research Procedures

a. Describe in detail the research procedures to be followed that pertain to the human participants. Be specific about what you will do and how you will do it. If applicable, differentiate between standard/routine procedures not conducted for research purposes from those that will be performed specifically for this study.

The research will implement programming with active intervention using quantitative research to measure change. The program will seek to include a convenience sample of fourteen preschool aged children four years of age [redacted], and their parents and/or caregivers, serving as a pilot study (Creswell, 2014). The study's independent variables will be implementation of a program to promote increased participation in movement activities.

Initially, parent surveys entitled, "Parental Perceptions of Movement Activity" will be administered to identify current movement activities the family engages in together, or co-occupations, identify community resources used for movement, acknowledge any movement activities they would like to include in their daily activities, identify barriers and supports for participation in family-centered movement opportunities. The survey will gather demographic information and use a Likert type rating scale, asking parents to respond to statements indicating strongly agree, agree, neither disagree or agree, disagree, or strongly disagree. Open ended questions will be included to gather information about current movement activities the family currently engages in, community resources utilized for movement opportunities, and identification of any family-centered physical activities the family would like to participate.

Participants will complete the Canadian Occupational Performance Measure, or COPM, an assessment commonly used in occupational therapy, to measure the family's perceived "performance and satisfaction" in "self-care, productivity, and leisure over time" (Canadian Occupational Performance Measure, 2014). A family movement log will be completed a week prior to the movement program's kickoff beginning in February, 2015 during Heart Health month. Parents will be asked to provide a list of family-centered movement activities for one seven day week (Sunday – Saturday). Upon returning the family movement log, the parents will receive a Bingo Card. The participants will get a space stamped for completing the survey.

As a part of the STAR's program, parent involvement is encouraged. These movement focused sessions will be a part of typical programming [redacted]. Each time the parent and child participates in a family centered movement activity [redacted] over the duration of four months (February – May, 2015), they can earn another stamp for the Bingo card. Participants will have the opportunity to rate the physical activity session using the "Parental Perceptions of Movement Activity Session using a Likert scale to score the session as very good, good, fair, poor, or very poor with the opportunity to elaborate on the strengths and weaknesses of the session with open ended questions.

A completed/winning BINGO card will be accepted alongside another physical activity log as part of a drawing for the grand prize at the summation of the program in May of 2015. Participants will complete a reassessment using the COPM, and a "Program Outcomes Survey" using a Likert type scale rating statements relating to particpation in the program as strongly agree, agree, neither agree or disagree, disagree, or strongly disagree and open ended questions. The COPM, and activity logs will provide pretest/posttest data to determine if changes of "statistical significance" have occurred (Polit & Beck, 2012, as cited by Wilson, 2014, p. 495).

In addition to the family centered movement component, the preschool aged children will engage in a program targeting movement for promotion of less sedentary behaviors as part of typical

6

Appendix A

IRB Documents

b. **Will there be any costs to the subjects for participating?** ☒ No ☐ Yes: Describe any costs that would be the responsibility of the subjects as a consequence of their participation in the research. Parents will have the option to participate in movement opportunities that cost money, but will be encouraged to identify activities that are free.

18. Research Materials, Records, and Confidentiality

a. **What materials will be used for the research process?** Include a description of both data collected through the study as well as other data accessed for the study.

1. Parental Perceptions of Family Physical Activity Assessment Survey
2. Family Physical Activity Log
3. Canadian Occupational Performance Measure (COPM)
4. Parental Perceptions of Physical Activity Session
5. Program Outcomes Survey

1. Parental Perceptions of Family Physical Activitiy Assessment Survey:
This survey was designed identify current physical activities the family engages in together, or exercise co-occupations, identify community resources used for physical activity, acknowledge any physical activities they would like to include in their daily activities, identify barriers and supports for participation in family-centered exercise. It will be distributed to participants at the beginning of the program, or February, 2015. The survey will gather demographic information and use a Likert type rating scale, asking parents to respond to statements indicating strongly agree, agree, neither disagree or agree, disagree, or strongly disagree. Open ended questions will be included to gather information about current physical activities family currently engages in, community resources utilized for physical activity, and identification of any family-centered physical activities the family would like to participate.
2. Family Physical Activity Log:
The Family Physical Activity Log will be distributed for participant completion at the beginning and end of the program (February, 2015 and May, 2015 for pre/posttest data). Parents will be asked to provide a list of family-centered physical activity for one seven day week (Sunday – Saturday).
3. Canadian Occupational Performance Measure, or COPM
Participants will complete the Canadian Occupational Performance Measure, or COPM, before intiation of the program and after, an assessment commonly used in occupational therapy, to measure the family's perceived "performance and satisfaction" in "self-care, productivity, and leisure participation over time" (Canadian Occupational Performance Measure, 2014).
4. Parental Perceptions of Physical Activity Session Survey
Participants will complete a "Parental Perceptions of Physical Activity Session" Survey after each monthly family-centered physical activity from February, 2015 - May, 2015, to rate the physical activity session using a Likert scale to score the session as very good, good, fair, poor, or very poor with the opportunity to elaborate on the strengths and weaknesses of the session with open ended questions.
5. Program Outcomes Survey
Particpants will complete a "Programs Outcome Survey" at its conclusion. The survey will include demongraphic information and use a Likert type scale rating statements relating to particpation in the program and identifying change over time as strongly agree, agree, neither agree or disagree, disagree, or strongly disagree and open ended questions. Open ended questions include idenfication of strengths and weaknesses of the program.

b. **Who will have access to the data?** If anyone outside the research team will have access to the data, provide a justification and include a disclaimer in consent documents.

The researcher, Jennifer Hight, M.S. OTR/L and her Capstone Project committee members, Shirley O'Brien, and Colleen Schneck will have access to the research/data.

c. **Describe how and where research records will be stored.** Note that all research-related records must be maintained for a period of three years from the study's completion and are subject to audit. Following the completion of the study and throughout the records retention period, student research records must be maintained by the faculty advisor who signs the application.

8

Appendix A

IRB Documents

Appendix A

All data will be stored in a locked file in the department of Occupational Science and Occupational Therapy at Eastern Kentucky University.

d. How will data be destroyed at the end of the records retention period (i.e., shredding paper documents, deleting electronic files, physically destroying audio/video recordings)?

After three years all data will be shredded.

e. Describe procedures for maintaining the confidentiality of human subjects data.

All participants' names will be compiled in an alphabetical list with a number assigned to the name. This master list will be stored in a locked file separate from the data. Names will not be used on data, but rather the assigned number. Only the research team members will have acess to this information.

19. Application Components *(Check all items that are included)*:

A completed application package must include the following:

- ☒ Application Form
- ☒ CITI Training Completion Reports for all investigators, key personnel, and faculty advisors
- ☒ If applicable: Form M: Research Involving Minors/Children
- ☐ If applicable: Form P: Research Involving Prisoners
- ☐ If applicable: Form I: Research Involving Decisionally-Impaired Individuals
- ☐ If applicable: Form W: Research Involving Wards of the State
- ☒ If applicable: recruitment materials (i.e., advertisements, flyers, telephone scripts, verbal recruitment scripts, cover letters, etc.)
- ☒ If applicable: Consent form (required in most all cases), assent form (for subjects who are minors), and parent/guardian permission form (if subjects are minors)
- ☒ If applicable: Instrument(s) to be used for data collection (i.e., questionnaire, interview questions, or assessment scales)
- ☐ If applicable: grant/contract proposal narrative (required if study is funded)
- ☒ If applicable: letter(s) granting permission to use off-campus facility for research

20. Principal Investigator Statement:

I certify that this document fully discloses the involvement of human subjects in this research study and that human subjects will not be involved in any other way. I agree to follow the approved protocol in the conduct of this study and to abide by EKU Policy 4.4.12: Protecting Human Subjects in Research (http://www.policies.eku.edu/academic/human_subjects/4.4.12_protecting_human_subjects_in_research_bor_1.11.pdf).

I agree:

A. to accept responsibility for the scientific and ethical conduct of this research study;
B. to obtain prior approval from the Institutional Review Board before implementing any changes to the research protocol or the study's documents, including those approved for recruitment, consent, and data collection;
C. to immediately report to the IRB any serious adverse reactions and/or unanticipated effects on subjects which may occur as a result of this study;
D. to maintain records related to this protocol for a period of three years following the project's completion;
E. to adhere to IRB reporting requirements, including annual continuing reviews and filing the final report.

Jennifer Hight — Jennifer Hight — 1/16/15
Name — Signature — Date

21. Department Chairperson's Approval: (If the PI is also the Department Chair, the Dean or equivalent must sign.)

I have reviewed this application and attest to the scientific merit of this study and the competency of the investigator(s) to conduct the project.

Colleen Schneck — Colleen Schneck — 1-16-15
Name — Signature — Date

9

Appendix A

IRB Documents

22. Faculty Advisor's Approval: (required if PI is an EKU student)

I have reviewed this application and attest to the scientific merit of this study and the competency of the investigator(s) to conduct the project. I understand that, as faculty advisor, I am responsible for guiding work on this project to ensure that the research protocol and EKU Policy 4.4.12: Protecting Human Subjects in Research (http://www.policies.eku.edu/academic/human_subjects/4.4.12_protecting_human_subjects_in_research_bor_1.11.pdf) are followed. I understand that I am responsible for maintaining records related to this study for a period of three years from the study's completion. I understand that, as faculty advisor, I am responsible for ensuring that reports are filed with the IRB in a timely manner and agree to file reports on behalf of the student researcher if necessary.

Shirley P O'Brien — Shirley P O'Brien — 1-16-15

Name — Signature — Date

10

Appendix A

IRB Documents

Institutional Review Board
Form M: Research Involving Minors/Children

This form is a required attachment to applications for projects involving children. In Kentucky, a child is an individual who is less than 18 years of age unless the individual has been legally emancipated. Some federal agencies and other states define children differently. If the study is to be funded by a federal agency, that agency's definition applies; if a study it to be conducted outside Kentucky, that state's definition applies.

1. **Investigator Name:** Jennifer Hight, M.S. OTR/L
2. **Research Project Title:** Community Based Programming Promoting Movement
3. **Risk Level:** Minimal risk means that the probability and magnitude of the harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological exams or tests. **Classify the proposed research into one of the following categories (A-C below) and respond to the applicable items that follow.**

X☐ **A.** The proposed research **does not involve greater than minimal risk** to the subjects.

i. Explain why the research is classified in this category.
The research incorporates developmentally appropriate gross motor activities.

ii. Describe procedures for soliciting the assent of the children and the permission of at least one parent/guardian.
Letters will be provided to parents describing the programming and research. Parents will be able to review the letters, and provide voluntary consent.

☐ **B.** The proposed research **presents greater than minimal risk and a prospect of direct benefit** to the subjects.

i. Explain why the research is classified in this category.

ii. Justify the risks by explaining the anticipated benefit to the subjects.

iii. Explain how the relation of the anticipated benefit to the risk is at least as favorable as that presented by available alternative approaches.

iv. Describe procedures for soliciting the assent of the children and the permission of at least one parent/guardian.

☐ **C.** The proposed research **presents greater than minimal risk and no prospect of direct benefit** to the subjects, but is **likely to yield generalizeable knowledge about the subject's disorder or condition**.

i. Explain why the research is classified in this category.

ii. Describe how the risks represent a minor increase over minimal risk.

iii. Describe how the research procedures present experiences to the subjects that are reasonably commensurate with those inherent in their actual or expected medical, dental, psychological, social, or educational situations.

iv. Explain why the intervention or procedure is likely to yield generalizeable knowledge about the subjects' disorder or condition which is of vital importance for the understanding or amelioration of the subjects' disorder or condition.

Appendix A

IRB Documents

v. Describe procedures for soliciting the assent of the children and the permission of both parents/guardians (unless only one parent has legal responsibility for the child).

4. **Suitability of Subjects:** Explain why children are suitable subjects for this research.
This programming seeks to address strategies to promote movement within the typical classroom curriculum to promote the health and wellness of the preschool population, a population currently vulnerable to childhood obesity and its physical and mental effects.

5. **Previous Research on Adults:** Has this research been previously conducted with adults as subjects?
☐ Yes (respond to A below) X☐ No
A. Explain indications that the proposed research will benefit or at least not be harmful to the children.
The programming promotes incorporation of movement in the typical classroom curriculum of four year old, preschool children, to reduce sedentary activity choices, and fosters parent/child interaction through engagement in family-centered movement.

6. **Number of Children Subjects:** Provide a justification for the number of children proposed for enrollment in the project.
The program targets the four-year-old preschool class [redacted]. This class currently has an enrollment of 14 children, and provides a convenience sample for the pilot study.

7. **Understandable Language:** Describe what efforts have been made to present information about the study in a language that is understandable to the minor population being recruited (i.e, informational documents, recruitment flyers, assent forms, data collection instruments).
Flyers, parent handouts, and letters including have been designed to inform parents. Informed assent has been included for the preschoolers. Informed consent has been included for the parents or caregivers.

Appendix A

IRB Documents

Consent to Participate in a Research Study

Community Based Programming Promoting Movement

Why am I being asked to participate in this research?

You are being invited to take part in a research study promoting movement. You are being invited to participate in this research study because you are the parent of a four year old child at [redacted] If you take part in this study, you will be one of about 84 people to do so.

Who is doing the study?

The person in charge of this study is Jennifer Hight, M.S. OTR/L at Eastern Kentucky University. She is being guided in this research by Dr. Shirley O'Brien. There may be other people on the research team assisting at different times during the study.

What is the purpose of the study?

By doing this study, we hope to learn what role parental involvement plays in promoting movement in preschoolers.

Where is the study going to take place and how long will it last?

The research procedures will be conducted at [redacted] You will need to come once monthly for a total of 4 times during the next four months (February, 2015 – May, 2015). Each of these visits will take about 30-45 minutes. The total amount of time you will be asked to volunteer for this study is approximately four hours over the next 4 months.

What will I be asked to do?

Parent surveys will be administered to identify current movement activities the famiy engages in together identify community resources used for movement, acknowledge any movement activities they would like to incude in their daily activities, identify barriers and supports for participation family-centered movement activities. The Canadian Occupational Performance Measure questionnaire will provide additional information. A "Family Movement Log" will be completed a week prior to the exercise program's kickoff. Parents will be asked to provide a list of family-centered movement activities for one seven day week (Sunday - Saturday). Upon returning the activity log, the parents will receive a Bingo Card. The participants will get a space stamped for completing the activity log. Each time the parent and child participates in a movement activity at RCCC during the duration of the program (February, 2015 - May, 2015) they can earn a stamp, and will have the opportunity to rate the activities. A completed/winning BINGO card will be accepted alongside another "Family Movement Log" as part of a drawing for the grand prize at the summation of the program.

Are there reasons why I should not take part in this study?

A parent or caregiver should not participate in this activity if they have a pre-existing medical condition prohibiting them from engaging in exercise or physical activity for 30 minutes or longer. It is recommended participants consult their doctor prior to participation in the program, and have health coverage.

What are the possible risks and discomforts?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

Appendix A

IRB Documents

You may, however, experience a previously unknown risk or side effect.

Will I benefit from taking part in this study?
There is no guarantee that you will get any benefit from taking part in this study. We cannot and do not guarantee that you will receive any benefits from this study.

Do I have to take part in this study?
If you decide to take part in the study, it should be because you want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

If I don't take part in this study, are there other choices?

If you do not want to be in the study, there are no other choices.

What will it cost me to participate?
There are no costs associated with taking part in this study, or if participants choose an activity requiring a specialized instruction a minimal fee may be charged to cover the instructor's cost. This is an optional expense, and if a session with a small fee were added this would not be a requirement.

Will I receive any payment or rewards for taking part in the study?

You will be qualified to take place in a drawing contingent on meeting the requirements in the Bingo contest while taking part in this study. A gift card to a local establishment will be the prize. The drawing is randomized, and not everyone will be awarded a prize at the drawing.

Who will see the information I give?
Your information will be combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from the information you give, and these two things will be stored in different places under lock and key.

However, there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if we believe you have abused a child or are a danger to yourself or someone else. Also, we may be required to show information that identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as Eastern Kentucky University.

Can my taking part in the study end early?
If you decide to take part in the study, you still have the right to decide at any time that you no longer want to participate. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to end your participation in the study. They may do this if you are not able to follow the directions they give you, if they find that your being in the study is more risk than

Appendix A

IRB Documents

benefit to you, or if the agency funding the study decides to stop the study early for a variety of scientific reasons.

What happens if I get hurt or sick during the study?
If you believe you are hurt or if you get sick because of something that is done during the study, you should call Jennifer Hight, M.S. OTR/L at Eastern Kentucky University immediately. It is important for you to understand that Eastern Kentucky University will not pay for the cost of any care or treatment that might be necessary because you get hurt or sick while taking part in this study. That cost will be your responsibility. Also, Eastern Kentucky University will not pay for any wages you may lose if you are harmed by this study.

Usually, medical costs that result from research-related harm cannot be included as regular medical costs. Therefore, the costs related to your child's care and treatment because of something that is done during the study will be your responsibility. You should ask your insurer if you have any questions about your insurer's willingness to pay under these circumstances.

What if I have questions?
Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Jennifer Hight, M.S. OTR/L at [redacted]. If you have any questions about your rights as a research volunteer, contact the staff in the Division of Sponsored Programs at Eastern Kentucky University at 859-622-3636. We will give you a copy of this consent form to take with you.

What else do I need to know?

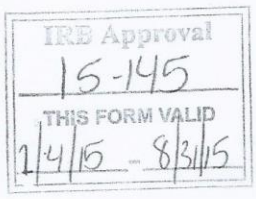
You will be told if any new information is learned which may affect your condition or influence your willingness to continue taking part in this study.

I have thoroughly read this document, understand its contents, have been given an opportunity to have my questions answered, and agree to participate in this research project.

_____ _____
Signature of person agreeing to take part in the study Date

_____
Printed name of person taking part in the study

_____
Name of person providing information to subject



Appendix A

IRB Documents

Parent/Guardian Permission Form
for Minor's Participation in a Research Project

Community Based Programming to Promote Physical Activity

Why is my child being invited to take part in this research?
We would like to invite your child to take part in a research study promoting movement in the classroom. We would like to invite your child to participate because he or she is a member of the four year old class at [redacted]. If your child takes part in this study, he or she will be one of about 14 children to do so.

Who is doing the study?
The person in charge of this study is Jennifer Hight, M.S. OTR/L at Eastern Kentucky University. She is being guided in this research by Dr. Shirley O'Brien. There may be other people on the research team assisting at different times during the study.

What is the purpose of the study?
By doing this study, we hope to learn more about the role of parental involvement and effect of gross motor development plays in promoting physical activity in preschoolers.

Where is the study going to take place and how long will it last?
The research procedures will be conducted at [redacted]. Each session will take about 30-45 minutes. The total amount of time your child will be asked to volunteer for this study is 8 times over the next 4 months.

What will my child be asked to do?
The preschoolers will be participating in typical, age appropriate, movement activities. The preschoolers will participate in sensorimotor groups incorporating classroom themes, and movement activities twice a month for four months (February – May, 2015). You will be asked to come one time a month with your child for family-centered activities.

Are there reasons why my child should not take part in this study?
A child who has a pre-existing health condition preventing them from engaging in physical activity for 30 minutes or more should not take part in this study. It is recommended participants consult their doctor prior to participation in the program, and have health coverage.

What are the possible risks and discomforts?
To the best of our knowledge, the things your child will be doing have no more risk of harm than he or she would experience in everyday life.

Your child may, however, experience a previously unknown risk or side effect.

Appendix A

IRB Documents

Will my child benefit from taking part in this study?
There is no guarantee that your child will get any benefit from taking part in this study. We cannot and do not guarantee your child will receive any benefits from this study.

Does my child have to take part in the study?
If you decide to allow your child to take part in the study, it should be because your child wants to volunteer. Your child will not lose any rights he or she would normally have if you choose not to allow him or her to volunteer. If your child participates and either of you change your mind later, your child can stop at any time during the study and still keep the benefits and rights he or she had before volunteering.

If I don't want my child to take part in the study, are there other choices?

If you do not want your child to be in the study, there are no other choices.

What will it cost for my child to participate?
There are no costs associated with taking part in this study.

Will my child receive any payment or reward for taking part in the study?

Your child will not receive any payment or reward for taking part in this study.

Who will see the information my child gives?
Your child's information will be combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. Your child will not be identified in these written materials.

We will make every effort to prevent anyone who is not on the research team from knowing that your child gave us information, or what that information is. For example, your child's name will be kept separate from the information he or she gives, and these two things will be stored in different places under lock and key.

However, there are some circumstances in which we may have to show your child's information to other people. For example, the law may require us to show your child's information to a court or to tell authorities if we believe your child have been abused or is a danger to him/herself or someone else). Also, we may be required to show information that identifies your child to people who need to be sure we have done the research correctly; these would be people from such organizations as Eastern Kentucky University.

Can my child's taking part in the study end early?
If your child decides to take part in the study, he or she still has the right to decide at any time that he or she no longer wants to participate. Your child will not be treated differently if he or she decides to stop taking part in the study.

Appendix A

IRB Documents

The individuals conducting the study may need to end your child's participation in the study. They may do this if your child is not able to follow the directions they give him or her, if they find that your child's being in the study is more risk than benefit to him or her, or if the agency funding the study decides to stop the study early for a variety of scientific reasons.

What happens if my child gets hurt or sick during the study?
If you believe your child is hurt or if your child gets sick because of something that is done during the study, you should call Jennifer Hight, M.S. OTR/L at [redacted] immediately. It is important for you to understand that Eastern Kentucky University will not pay for the cost of any care or treatment that might be necessary because your child gets hurt or sick while taking part in this study. That cost will be your responsibility. Also, Eastern Kentucky University will not pay for any wages that might be lost as a result of this study.

Usually, medical costs that result from research-related harm cannot be included as regular medical costs. Therefore, the costs related to your child's care and treatment because of something that is done during the study will be your responsibility. You should ask your insurer if you have any questions about your insurer's willingness to pay under these circumstances.

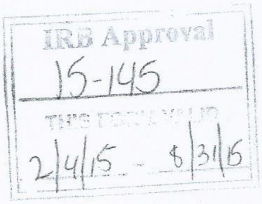
What if I have questions?
Before you decide whether to accept this invitation for your child to take part in the study, please ask any questions that might come to mind now. Later, if you or your child have questions about the study, you can contact the investigator, Jennifer Hight, M.S. OTR/L at [redacted]. If you have any questions about your child's rights as a research volunteer, contact the staff in the Division of Sponsored Programs at Eastern Kentucky University at 859-622-3636. We will give you a copy of this form to take with you.

What else do I need to know?

You will be told if any new information is learned which may affect your child's condition or influence your willingness to continue allowing your child to take part in this study.

I have thoroughly read this document, understand its contents, have been given an opportunity to have my questions answered, and give permission for my child to participate in this research project if he/she chooses to participate.

Parent/Guardian's Name	Date	Child's Name	Date
Parent/Guardian's Signature	Date	Witness Signature	Date



Appendix A

IRB Documents

Assent Script

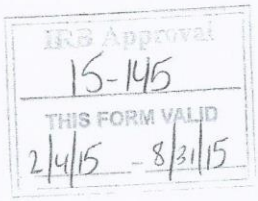
Community Based Programming Promoting Movement

I am conducting research about exercise and would like to ask for your help because you are four year old. If you decide to participate in this project, you will be asked to participate in classroom activities and play with your parents at special events at school.

Your parents know that I am asking you if you want to participate, but it is up to you to decide if you want to do this. You should not feel pressured to participate, and no one will be upset with you if say no. Even if you say yes now but decide you want to stop later, no one will be upset with you. All you have to do is tell me that you want to stop.

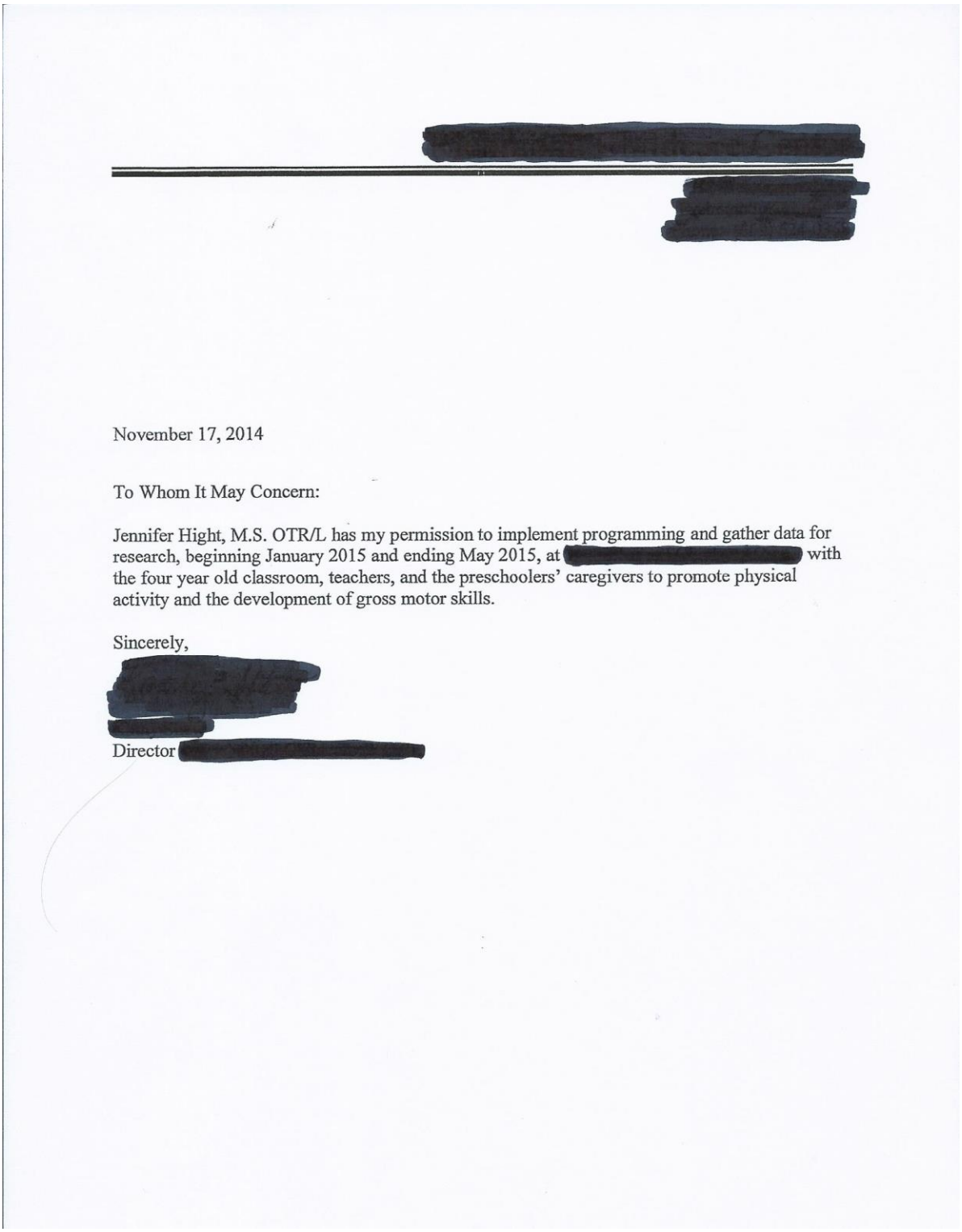
Do you have any questions for me?

Do you want to participate?



Appendix A

IRB Documents



[redacted]

November 17, 2014

To Whom It May Concern:

Jennifer Hight, M.S. OTR/L has my permission to implement programming and gather data for research, beginning January 2015 and ending May 2015, at [redacted] with the four year old classroom, teachers, and the preschoolers' caregivers to promote physical activity and the development of gross motor skills.

Sincerely,

[redacted]

Director [redacted]

Appendix B

Letter of Support

Parental Perceptions of Movement Activity

Demographic Information

Male/Female: _____ Age: _____ Number in Household: _____ Age(s) in Household: _____

Highest Level of School Completed: _____ Do you have access to transportation? _____

Parental Status: Single _____ Married _____ Widowed _____ Divorced _____ Domestic Partner _____ Grandparent _____

Please answer each of the following with regard to how you benefit from working with other healthcare students. **Please mark an X in the box best representing your feelings and attitudes related to movement activities.**

	Strongly Disagree 1	Disagree 2	Neither Agree or Disagree 3	Agree 4	Strongly Agree 5
I am comfortable engaging in movement activities with my preschooler.					
My child and I usually engage in movement activities together 3 or more days a week.					
My child and I usually engage in movement activities together 5 or more days a week.					
My family has adequate outdoor space such as a yard for participation in large motor physical activity.					
My community provides opportunities and/or resources for movement.					
My family and I use community resources to engage in movement.					

List any movement activities you currently participate in with your preschooler. Describe.

_____

List any community resources you use to engage in movement activity with your preschooler. Explain.

_____

Identify any family-centered movement activities you would like participate in with your family.

_____

Appendix C

Initial Parent Survey

Program Outcomes Survey

Demographic Information

Male/Female: _____ Age: _____ Number in Household: _____

Age(s) in Household: _____ Highest Level of School Completed: _____

Parental Status: Single Married Widowed Divorced Domestic Partner Grandparent

Please answer each of the following with regard to how you benefit from working with other healthcare students. **Please mark an X in the box best representing your feelings and attitudes related to movement activity.**

	Strongly Disagree 1	**Disagree** 2	**Neither Agree or Disagree** 3	**Agree** 4	**Strongly Agree** 5
After participating in the program my family engages in more movement activities together.					
After participating in the program I am more comfortable engaging in movement activity with my child.					
After participating in the program I am more comfortable accessing resources in the community to continue to engage in movement activities.					
The program has provided new opportunities for family-centered movement activities.					
My child is more active after participating in the program.					

What was your favorite part of the movement program?

_____

What would you change about the movement program?

_____

Appendix D

Program Outcomes Survey

March, 2015

Fun Fit 15 Newsletter

By: Jennifer Hight, M.S. OTR/L

Jennifer_Hight@mymail.eku.edu T: 859-979-2596

Crawling

It's not just for Babies!

Did you know even after your child starts to walk, they can benefit from crawling? Crawling is a great activity to help develop the stomach and back muscles used for breathing and sitting in a chair (postural control). Crawling also helps children work on coordination of both sides of the body (bilateral coordination) to encourage development of hand preference (or specialization). Crawling also helps develop fine-motor coordination by promoting development of the arches of the hands. It helps develop shoulder, arm, and hand strength for development of hand skills. (Pieraccini & Vance, 2001).

Crawling can be incorporated in your child's play in a variety of ways. Your child can pretend to be an animal that crawls, similar to the opportunity they had to pretend to be a dog or pig in the recent sensorimotor group. Children can pretend to be a bug, bear, or cat. In addition, your child can crawl through play tunnels or large playground tunnels. The opportunities for crawling are endless. Also, coloring or drawing while lying on the floor can help develop the muscles in the shoulder to support hand skills.

A few examples of fun animal crawls are included on the back of this newsletter.

References

Miss Sue and Team from *Integrations*. www.integrationscatalog.com

Pieraccini, V. & Vance, D. (2001). On all fours. *Handprints*. (22-24). Austin, Texas: Pro-ed.

Pieraccini, V. & Vance, D. (2001). The shoulder bone is connected to the wrist bone. *Handprints*. (25-26). Austin, Texas: Pro-ed.

Sensorimotor Group

During the *Down on the Farm* Sensorimotor Group your child had the opportunity to learn a new song sung to the tune of *The Wheels on the Bus* written by: Greg Scelsa. Ask your child to sing along with you, while you imitate the animals on the farm.

There are so many sounds that you can hear, you can hear, you can hear down on the farm.

The rooster on the fence says....

The cow in the field says...

The pig in the pen says...

The dog on the porch says...

The horse in the barn says...

The turkey in the straw says...

The donkey by the wagon says...

(Scelsa, 1994).

What other animals can you hear down on the farm?

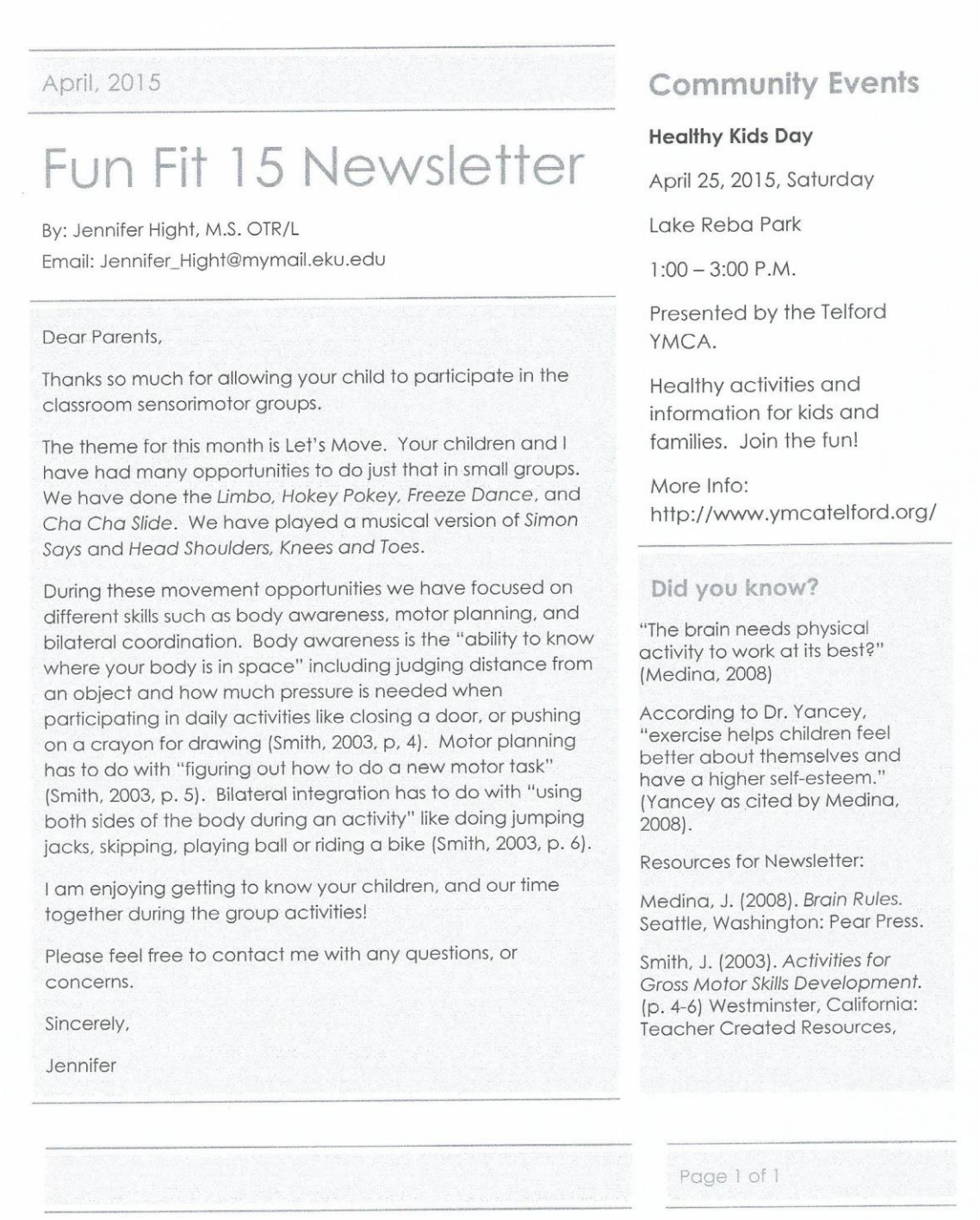
How do they move?

References

Scelsea, G. (1994). *Down on the Farm.* Huntington Beach, CA: Creative Teaching Press.

Appendix E

March Parent Newsletter



April, 2015

Fun Fit 15 Newsletter

By: Jennifer Hight, M.S. OTR/L

Email: Jennifer_Hight@mymail.eku.edu

Dear Parents,

Thanks so much for allowing your child to participate in the classroom sensorimotor groups.

The theme for this month is Let's Move. Your children and I have had many opportunities to do just that in small groups. We have done the *Limbo, Hokey Pokey, Freeze Dance*, and *Cha Cha Slide*. We have played a musical version of *Simon Says* and *Head Shoulders, Knees and Toes*.

During these movement opportunities we have focused on different skills such as body awareness, motor planning, and bilateral coordination. Body awareness is the "ability to know where your body is in space" including judging distance from an object and how much pressure is needed when participating in daily activities like closing a door, or pushing on a crayon for drawing (Smith, 2003, p, 4). Motor planning has to do with "figuring out how to do a new motor task" (Smith, 2003, p. 5). Bilateral integration has to do with "using both sides of the body during an activity" like doing jumping jacks, skipping, playing ball or riding a bike (Smith, 2003, p. 6).

I am enjoying getting to know your children, and our time together during the group activities!

Please feel free to contact me with any questions, or concerns.

Sincerely,

Jennifer

Community Events

Healthy Kids Day

April 25, 2015, Saturday

Lake Reba Park

1:00 – 3:00 P.M.

Presented by the Telford YMCA.

Healthy activities and information for kids and families. Join the fun!

More Info:
http://www.ymcatelford.org/

Did you know?

"The brain needs physical activity to work at its best?" (Medina, 2008)

According to Dr. Yancey, "exercise helps children feel better about themselves and have a higher self-esteem." (Yancey as cited by Medina, 2008).

Resources for Newsletter:

Medina, J. (2008). *Brain Rules.* Seattle, Washington: Pear Press.

Smith, J. (2003). *Activities for Gross Motor Skills Development.* (p. 4-6) Westminster, California: Teacher Created Resources,

Page 1 of 1

Appendix F

April Parent Newsletter

May, 2015

Fun Fit 15 Newsletter

By: Jennifer Hight, M.S. OTR/L

Dear Parents,

The program promoting movement with you and your child is winding down. We will hold the drawing in June for the $25 Gift Card. I will be placing a Bingo card in your child's cubby. It will have a stamp for each of the following items completed and returned[redacted]

- Parental Perceptions of Movement Activity
- Family Movement Logs
- Canadian Occupational Performance Measure (COPM)
- Parental Perceptions of Movement Activity Session (For those parents attending the Mother's Day classroom party)
- Program Outcomes Survey

If you have a winning Bingo card, you can return it [redacted] for the drawing. If you are missing a few stamps, and would like to participate we have extra Surveys, etc. you can complete and return with your Bingo card for additional stamps. **The goal is to have all Bingo Cards complete, and turned in by the end of May or June 1, 2015.**

I want to thank you for participating in the program, and allowing your child to participate. I have enjoyed my time here. I am happy to have the opportunity to get to know you, and your child during the classroom sensorimotor groups and classroom parties.

Please feel free to contact me with any questions, or concerns.

Sincerely,

Jennifer

Resources for Newsletter:

Kentucky Center for Education and Workforce Statistics, 2015. *2015 Early Childhood Profile Madison County*. (p. 145-146). Retrieved from: https:kentuckyp20,ly.gov/(x(1)A

Madison County Schools Kindergarten Readiness Checklist. Retrieved from http://www.madison.kyschools.us/userfiles/3/my%20files/all-day%20kindergarten/kindergarten%20readiness%20checklist.pdf?id=499709

Community Events

Second Sunday

An event for parents and children promoting physical activity.

October 10-11, 2015, Saturday-Sunday

For More Info Contact:

Madison County Cooperative Extension Office

(859) 623-4072

Website:

http://2ndsundayky.org/about-2s.htm

Did you know?

A little over half (53%), of children entering Kindergarten in Madison County are ready "to engage in and benefit from early learning experiences that best promote the child's success" according to Madison County Early Childhood Profile (Kentucky Center for Education and Workforce Statistics, 2015).

A little over half the children in Madison County (53.2%) score "average or above average" in "Physical Development", according to the Kindergarten Screener (Kentucky Center for Education and Workforce Statistics, 2015).

The Madison County Schools Kindergarten Readiness Checklist Criteria includes: "running, jumping, hopping, throwing, catching, and bouncing a ball" (Kindergarten Checklist, 2015). The classroom sensorimotor groups were designed to try to incorporate these activities.

Appendix G

May Parent Newsletter

Table 1

Parent Demographic Information

Table 1. Parent Demographic Information

Characteristic	**n**
Gender	
Pretest	
Male	1
Female	5
Posttest	
Male	2
Female	7
Marital Status	
Pretest	
Married	5
Domestic Partner	1
Posttest	
Married	3
Single	3
Divorced	2
Domestic Partner	1
Educational Preparation	
Pretest	
High School	0
College	6
Posttest	
High School	1
College	8
Age	
Pretest	32-38
Posttest	*24-51*

*The parents that completed the pre and post program surveys may not have been the same individuals. As noted, fifteen families agreed to participate in the program with their children. Data represents those that chose to turn in their forms. This data is shared to get a general picture of participants.

Table 2

Parental Perceptions Prior to Capstone Project

	Percentile	Mean	Min	Max
Comfortable Engaging in Movement Activities with Preschooler	**100%**	**5**		**5**
Engage in Movement Activities 3 or more days a week	**90%**	**4.5**	**4**	**5**
Engage in Movement Activities 5 or more days a Week	**70%**	**3.5**	**2**	**5**
Adequate Outdoor Space for Large Motor Physical Activity	**83%**	**4.2**	**2**	**5**
Community Provides Opportunities and/or Resources for Movement	**77%**	**3.8**	**1**	**5**
Family uses Community Resources to Engage in Movement	**70%**	**3.5**	**1**	**5**

Note: Strongly Disagree =1 and Strongly Agree = 5 on Likert scale responses to each question.

Table 3

Program Outcomes Survey at Conclusion of Capstone Project

	Percentile	Mean	Min	Max
After participating in the program my family engaged in more movement activities together.	**78%**	**3.9**	**3**	**5**
After participating in the program I am more comfortable engaging in movement activities with my child.	**80%**	**4**	**3**	**5**
After participating in the program I am more comfortable accessing resources in the community to continue to engage in movement activities.	**80%**	**4**	**3**	**5**
The program has provided new opportunities for family-centered movement activities.	**80%**	**4**	**3**	**5**
My child is more active after participating in the program.	**82%**	**4.1**	**3**	**5**

Note: Strongly Disagree =1 and Strongly Agree = 5 on Likert scale responses to each question.