



IRON KIDS: AN INTEGRATIVE APPROACH TO PEDIATRIC WEIGHT MANAGEMENT

Michaela Kelly, OTS¹; Dr. Penny Rogers, Capstone Faculty Advisor²; Dr. Danny Burgess and Rachel Dear, Capstone Mentors²
The University of Mississippi Medical Center’s¹ Center for Integrative Health²



OVERVIEW OF CAPSTONE SITE

Center for Integrative Health (CIH): A UMMC outpatient clinic that is a branch of the Department of Psychiatry and Human Behavior and had their grand opening in 2019. It was established to provide transformative patient care to individuals in the community suffering from a chronic condition.

Location: The UMMC CIH is located in the Holmes Community College Wellness and Fitness Center in Ridgeland, MS.

Relevant Theories: The mission and vision of the UMMC CIH was established based on the innovative approach of integrative medicine. Integrative medicine utilizes a team of multiple disciplines that deliver holistic, patient-centered care that helps patients overcome barriers towards establishing a healthy lifestyle.

Mission: “The CIH provides transformative, patient-centered care through a unified team approach. Our mission is to awaken each patient’s natural capacity for healing through engagement and targeted lifestyle changes that empower them to evolve from a state of illness to a life of wellness.”

Vision: “The CIH is committed to bridging the gap between illness and wellness for patients through targeted interventions based on an intimate understanding of the whole person. We promote the body’s natural capacity for healing by applying principles of disease prevention and facilitating behavioral changes appropriate to each patient. Our goal is to educate and empower patients as they evolve from a state of illness to a life of wellness.”

Services Offered: Patients begin care with nurse practitioners who perform the initial holistic evaluation to gain a full understanding of the patient’s overall health behaviors. The nurse practitioners then select services at the CIH that will benefit the patient based on their needs. The CIH offers several services such as lifestyle medicine, psychotherapy services, physical therapy, nutrition counseling, psychiatric medication management, and pediatric weight management.

LITERATURE SUMMARY

Broken healthcare system: In our current healthcare system, scientific advancements under the biomedical model focus solely on the physical disease and neglects other determinates of health. If these health factors are maladaptive and go undetected, chronic conditions are developed.

The plague of chronic conditions: The current biomedical model fails to treat chronic conditions, which is causing the rate to rise in the US. However, the rate is climbing even higher in MS because it contains more disadvantaged groups. Unfortunately, MS has the highest childhood obesity rate, and 25.4% of children aged in MS are considered obese.

The power of prevention: Even though chronic conditions are more common in MS, the literature identifies risk factors that could be modified to prevent them. For example, by promoting healthy nutrition and increasing physical activity, the rate of childhood obesity can be reduced or even reversed. Treating childhood obesity can prevent the development of chronic diseases in adulthood.

Integrative medicine: Integrative medicine offers a few solutions to the current broken healthcare system and could better serve patients with chronic conditions. Instead of the biomedical model, children who are obese often require a multidisciplinary, family-oriented, and integrative approach for effective weight management. Integrative medicine meets this need by providing a collaborative effort between multiple providers that facilitate behavioral changes in pediatric weight management patients to prevent the development of chronic conditions in adulthood.

NEEDS ASSESSMENT

Phase I Needs Assessment: A 17-item semi-structured interview guide that was delivered via focus group interview during CIH’s weekly team meeting.

Phase I Needs Assessment Summary: The physical therapist, Rachel Dear, desired to expand the newly established pediatric services to include group treatment.

Phase II Needs Assessment: Informal discussion during monthly staff meeting.

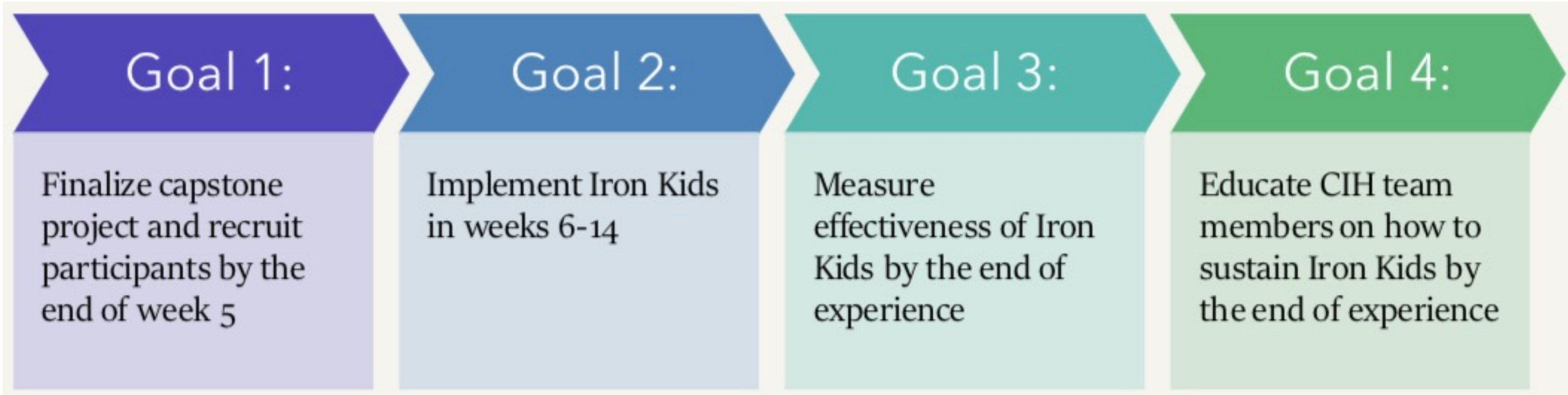
Phase II Needs Assessment Summary: The CIH recently partnered with UMMC Pediatric Weight Management Clinic, and the PT was seeing more children who were overweight. She previously developed Iron Kids for children with disabilities but wanted it to be modified to benefit her pediatric weight management clients.

GAP ANALYSIS STATEMENT

After extensive review of the literature and conducting Phase I and Phase II Needs Assessments with the CIH treatment team, the capstone project was finalized. In order to meet the need of the pediatric population in MS, the capstone student modified and implemented Iron Kids, a fitness and educational program that utilized an integrative approach to pediatric weight management.

PROJECT DEVELOPMENT AND IMPLEMENTATION

GOALS FOR CAPSTONE PROJECT IMPLEMENTATION



IRON KIDS PROGRAM

WEEKLY SCHEDULE

WEEK 1	WHY BE HEALTHY? Campers will learn what it means to be healthy as well as the numerous benefits of living a healthy lifestyle. We will explore how our bodies work and how to prevent chronic diseases, such as type 2 diabetes, by making healthier choices.
WEEK 2	ENDURANCE DAY Campers will perform interval training to increase their endurance for cardiovascular activities. We will discuss target heart rate and how to most efficiently burn calories to maintain a healthy body weight.
WEEK 3	STRENGTH DAY Campers will participate in high intensity circuit training specifically designed to strengthen upper and lower extremities using functional techniques.
WEEK 4	FLEXIBILITY DAY Campers will stretch themselves to new levels using targeted yoga poses and Pilates techniques to lengthen muscles and improve postural alignment.
WEEK 5	CORE/BALANCE DAY Campers will challenge their balance and improve core strength through Pilates exercises in a variety of postures.
WEEK 6	COORDINATION DAY Campers will challenge their coordination skills by participating in fun games. Campers will also show off their best dance moves to their favorite songs!
WEEK 7	NUTRITION DAY Campers will learn the importance of a balanced diet to increase their overall wellbeing. They will explore the different food groups that are represented on the ideal meal. Campers will reflect on how they can make more balanced meal choices in the future.
WEEK 8	OLYMPIC DAY Campers will use all of their gains in strength, flexibility, endurance, balance, and coordination to compete against one another for outstanding prizes! Games will include relay races, tug of war, obstacle courses and much more!

- Implemented Iron Kids at the CIH every Tuesday from 4:00-5:00 for 8 weeks.
- Each session had a brief educational component followed by exercise interventions.
- Different health topics covered each week. See weekly schedule.
- Pedometers given to children donated by Kohl’s Fit Kids Program at UMMC

IRON KIDS EDUCATIONAL MATERIALS

Each week, the children received an educational handout, Home Exercise Program, and goal sheet. These were developed by the capstone student to support their learning in the topic of the week.

WHAT DOES IT MEAN TO BE HEALTHY?

Being healthy is like a puzzle. There are many different pieces to it. If one piece is missing, the puzzle is not complete.

WHY DO WE WANT TO BE HEALTHY?

Boosts your mood	Gives you energy	Manages your weight
Increases your focus	Boosts your immune system	Reduces chronic diseases

DATE: _____

I WILL EAT LESS:	
I WILL EAT MORE:	
I WILL DRINK LESS:	
I WILL DRINK MORE:	
I WILL DO THESE EXERCISES:	

I WILL THINK POSITIVE THOUGHTS!
I WILL SAY POSITIVE THINGS!

PLAN FOR PROJECT EVALUATION

TARGETED OUTCOMES OF IRON KIDS

Targeted Outcomes of Iron Kids:	Instrument to Measure Targeted Outcome:
1. Encourage development in gross motor skills and reduce BMI in children who are overweight.	Pre/Post-Assessment containing gross motor milestones and body mass index
2. Educate children and parents on how to live healthier lifestyles in order to prevent chronic diseases.	Satisfaction Survey
3. Provide children with Home Exercise Programs to promote active lifestyles and improve overall health and well-being.	Satisfaction Survey
4. Teach children that living a healthy lifestyle can be fun.	Satisfaction Survey

RESULTS FROM IRON KIDS

Participants: The final participants consisted of three children who attended consistently and obtained pre/post-assessment data. Three parents completed a satisfaction survey on final day.

Participant Characteristics: Three children were females within 9-11 years old. All had a BMI in the 98th percentile or above, which was considered obese.

Target Outcome #1: Iron Kids successfully increased the average in each category of gross motor skills and decreased BMI in the participants.

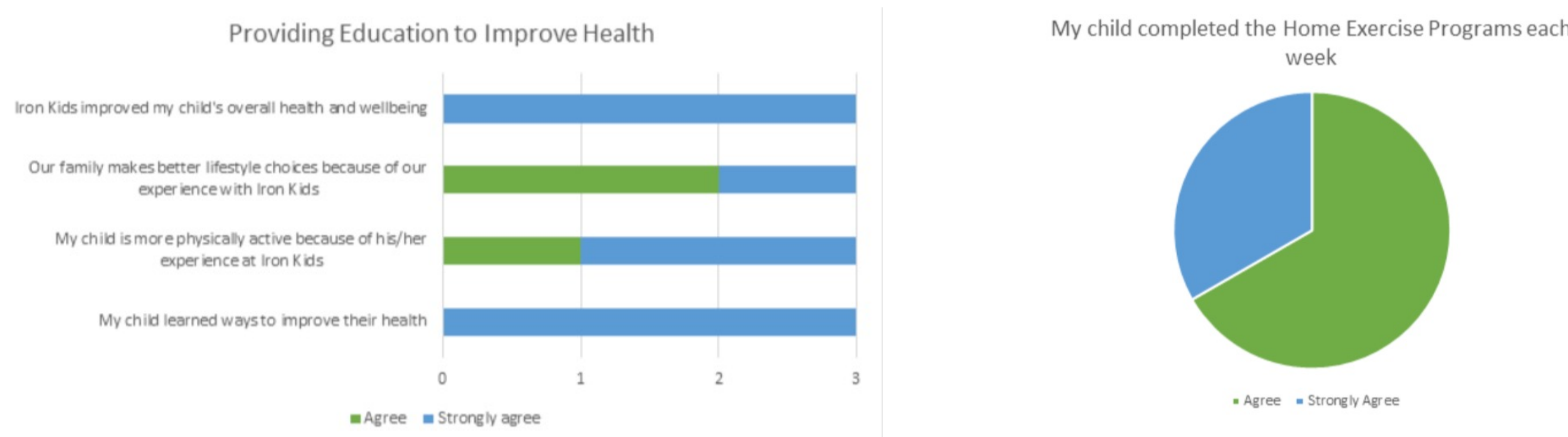
Gross Motor Milestones and BMI Results (N=3)

	Mean Score (SD) on Pre-Assessment	Mean Score (SD) on Post-Assessment
SLS Right	6.68 (3.78)	12.8 (6.28)
SLS Left	10.72 (7.92)	13.33 (2.89)
Wall Sit	15.33 (8.39)	22 (6.93)
Push-ups*	5 (4.58)	8.67 (4.16)
Sit-ups*	10.67 (1.15)	13 (1)
Jumping Jacks*	21 (4.58)	26 (1)
SLR Right	82.67 (13.27)	86 (10.39)
SLR Left	85 (17.32)	88.33 (15.27)
BMI	35.63 (7.36)	35.5 (8.09)

*This gross motor skill was measured in a 30 second timeframe.

Target Outcome #2: Iron Kids successfully educated parents and children to improve their overall health

Target Outcome #3: Iron Kids successfully provided HEPs to encourage an active lifestyle to improve health



Target Outcome #4: Iron Kids successfully taught children that living a healthy lifestyle is fun. 100% of parents strongly agreed that their child enjoyed Iron Kids.

PROJECT SUMMARY AND FUTURE RECOMMENDATIONS

Limitations: Limited space in the fitness center delegated to the CIH for children’s programs, inconsistent attendance to Iron Kids sessions across an 8-week span, time limited to one-hour sessions, a lot of time passed between sessions due to inclement weather, and lack of true multidisciplinary approach.

Future Recommendations: Shorten the amount of sessions, possibly to 6 weeks, to reduce attendance burden. Expanding beyond one hour to provide ample time for learning and activities. Improve multidisciplinary approach by inviting specialized providers to deliver information in Iron Kids sessions.

Conclusion: Iron Kids successfully met the four targeted outcomes. The capstone student also promoted sustainability by providing an Iron Kids Facilitator Handbook for future facilitators. This contained weekly educational materials. Ultimately, the Iron Kids program successfully addressed childhood obesity and could potentially reduce this burden in the state of Mississippi at the CIH.