

# Remote Learning due to COVID19 Improves Family Behavior Intervention Delivery in Youth with Obesity

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## Introduction

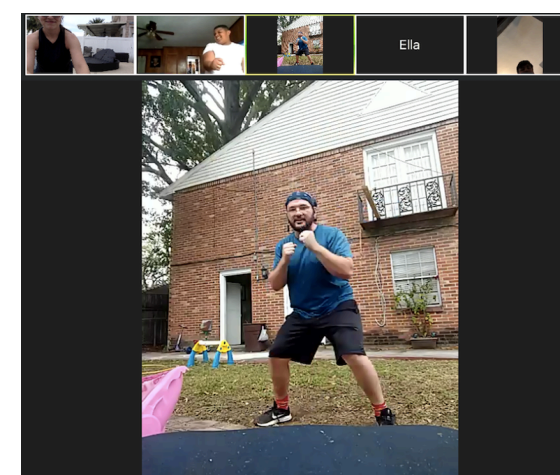
Implemented in 2019, the Healthier Together (HT) family behavioral program was designed to reduce metabolic factors in pre-diabetic children with obesity in a clinical setting. Participating families with children attended on-site clinics during which they received and participated in cooking and exercise demonstrations. We found that cooking and exercising together as a family resulted in improved health behaviors and benefits for participating children. In March of 2020, the program transitioned to a remote format due to COVID19. A process evaluation was conducted to assess feasibility of continued participation and fidelity of program content.

## Methods

Program data were compared before and after the switch to online learning. One female and four male children (13y±1.7years) were enrolled. Nutrition, cooking and fitness behavioral sessions were delivered to families in a clinic setting prior to COVID19, and remotely during COVID19. Evaluation measures included number of sessions delivered, participant retention and attendance, program fidelity including verbal self-report of nutrition and fitness goals, activities and accomplishments. Clinical and remote learning sessions were also compared for quality, diversity, and creativity.

## Results

There were 11 total sessions; four in-person and seven remotely. One participant was lost to follow-up prior to the transition. Four participants were retained during remote delivery in response to COVID19. Remote attendance rates were similar to clinical sessions (63% vs. 70%). Based on qualitative self-reports, participants' fitness and nutrition behavior changed, which are known to reduce the risk for adverse metabolic function. Participants reported that physical activity levels improved with weekly physical training, resulting in greater stamina, endurance and physical performance. Dietary behaviors also improved, with increasing consumption of fruits and vegetables and a reduction in energy-dense, nutrient-poor foods. There was also an overall decrease in self-reported weight status post intervention. Program content tailored to stay home orders became more diverse than clinical content by including outside play, food, fitness, and school schedules, and gardening. Remote learning sessions were tailored to align with stay home orders, and promoted increased participant retention, while maintaining fidelity, and improving quality and diversity of behavioral and educational content.



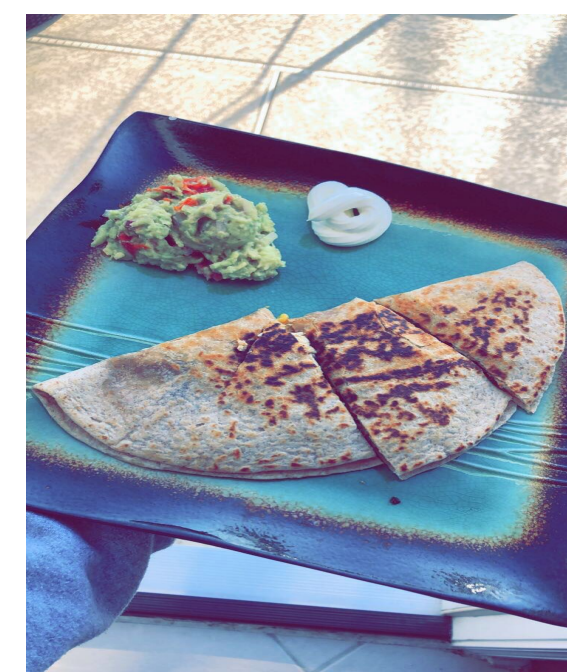
Comparison data of clinical sessions versus remote sessions		
	Clinic Sessions	Remote Sessions
Number of Sessions (n=11)	4	7
Participants	5	4
Loss to Follow-Up	1	0
Average Student Participation	3.5	2.6



- Virtual Behavioral Lessons
- Goal setting
  - Accomplishments
  - Positive Reinforcement

- Virtual Teaching Kitchen
- Healthy recipes
  - Cooking demos
  - Cooking as a family

- Virtual Fitness Activities
- Diverse exercises
  - Strength training
  - Cardiovascular fitness



## Healthier Together

IN-CLASS VS. REMOTE

A comparison chart to display program adaptation to COVID-19 stay-at-home order

PROGRAM FEATURES	PRE COVID-19	POST COVID-19
Behavioral Lessons	✓	✓
Exercise Demos	✓	✓
Family Cooking Demos	✓	✓
Zoom Sessions	✗	✓
In-Class Sessions	✓	✗
Goals/Achievements	✓	✓



## Conclusion

Transitioning from clinical to remote learning format in response to COVID19 improved intervention delivery, retention and content while maintaining fidelity. The clinic-based family behavioral intervention was translated into home use through more diverse and creative content. Thus, the Healthier Together program increased its capacity to improve metabolic health in pre-diabetic children with obesity through remote learning during COVID19. Despite a small sample size, the program thrived in a small-scale setting with participants valuing one-on-one treatment. Instead of halting the program due to COVID19, participants continued to improve their health during the pandemic. A weakness to this study was not having access to participant metabolic function data due to the remote setting, but improvements in budget and program planning can improve study results. There is potential for future studies to adapt this remote learning format to reach more participants than possible with only a clinical setting. Future studies should consider remote learning formats as feasible surrogates for traditional clinic-based family behavioral programs in youth with obesity.

## References

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