 Joint Parent and Child Exercise Pilot Program

Alexander Tylka, M.S., Daniella Combs, M.S., Nicholas Lansky, M.S., Benjamin Freer, M.S., Christopher Pilet, Kent Marshal, Diana Gislason, M.S., M.B.A.

ABSTRACT

OBJECTIVE: To assess compliance to an exercise program with dietary and psychological counseling using a family based approach, and to evaluate changes in body composition and physical fitness levels post intervention.

METHODS: An obese mother (42 y.o., BMI: 46.6) and overweight child (10 y.o., BMI: 26.8) attended a 12 week intervention that included an individualized exercise prescription developed from baseline exercise testing, psychological/motivational counseling and dietary modification education. Intervention was conducted by trained Exercise Physiologist and Masters Students. Participant's appointments were simultaneous but interventions separate. Sessions were held twice per week and lasted 1.5 hours each (24 total scheduled sessions). Outcomes were Body Composition Analysis (Bod Pod, mother/child), 6 Minute Walk Test (EWMT) (child), 1 Minute Push-Up Test (m), YMCA Sit-Up Test (m), Waist/Hip Ratio (mother/child), and BMI (mother/child).

RESULTS: A total of 20 sessions were attended by both participants (83.3% attendance rate). Changes in the mother include an increase in body fat by 6.2% and BMI increase of 0.5. Measures in the child were as follows: EWMT produced 50% improvement, 1 Minute Push-Up Test: 15% improvement, YMCA Sit-Up Test: 16% improvement, Waist/Hip Ratio: no change, BMI: improvement of 1.4.

CONCLUSIONS: The 83% attendance rate in this group exceeds typical compliance rates shown in other research and points to the positive impact of using a family based approach. It is unclear whether parent involvement impacted the health and fitness parameters measured in the child; however, the positive changes seen in the child indicates that further research with a larger sample size would be beneficial.

BACKGROUND

- Children classified as overweight or obese demonstrate a higher likelihood of developing debilitating conditions that can persist into adulthood and have higher social and psychological distress
- Modifying lifestyle factors such as diet and exercise during childhood can have a positive impact on health factors including weight, BMI, blood pressure and lipid levels
- On average, parents are more sedentary than their non-parent counterparts which can be partially attributed to childcare responsibilities
- Family intervention settings for lifestyle modification has been shown to be beneficial
- Adherence and attendance rates among pediatric weight management programs report high drop out

METHODS

Participant Demographics
- Adult: 42 yrs, female, weight 268 lbs, BMI 46.6, ethnicity: Caucasian, Education: Masters School
- Child: 10 yrs, female, weight 138 lbs, BMI 26.8, ethnicity: Caucasian, Education: Elementary School

Assessments
- Body Composition: Body Composition Analysis using BodPod
- Exercise Testing: EWMT
- Parent-Specific: Selected exercise test using Paradi Medics system
- Child-Specific: 6 Minute Walk Test
- YMCA Push-Up test
- YMCA Sit-Up test
- Adherence was assessed based on participant attendance and completion of intervention

Intervention: 24 sessions lasting 90 minutes each were conducted over the course of 12 weeks. Conducted at the same time, in separate rooms. Each session included:
- Warm-up
- Cardiovascular and strength exercises
- A lesson from our core curriculum (nutrition, exercise, motivation, self esteem)
- Qualitative satisfaction assessments once per week
- Small health-related homework assignment designed to engage other family members.

RESULTS

- Child Baseline Body Composition
- Child Post Body Composition
- Parent Baseline Body Composition
- Parent Post Body Composition

CONCLUSION

- Adherence
  - An 83% attendance rate and completion of the study exceeds the attrition rates by previous studies (ranging from 27%-73%) (4)

- Parent Results
  - The impact parameters showed decline following the intervention indicating other factors (diet, etc.) impacted outcomes

- Child Results
  - Improvement in BMI, fat percentage, EWMT, YMCA push-up, and sit-up tests, illustrate the positive impact of an exercise intervention with dietary counseling

- Overall Results
  - The impact of parent involvement as related to exercise intervention remains unclear; however, the positive changes observed in the child imply potential benefits
  - Further studies using larger sample sizes would be beneficial to target the level of impact of parent involvement
  - Removing perceived barriers to exercise (such as child care) significantly improved participant adherence

DISCUSSION

- Exercise as the primary intervention did not elicit the changes desired in the parent's assessments
- Focusing on motivation as well as monitoring food intake may have been more impactful than simply educating participants
- Intervention length and time requirements were appropriate for subjects and added to the attendance success
- Understanding individual barriers to exercise may be crucial in elevating adherence levels

FUTURE STUDIES

- Recruit a larger sample size to better evaluate the impact on a wider population
- Incorporate other disciplines (dietician, psychologist, etc.) into the study to improve the probability of success
- Include other assessments such as lipid panels in order to better evaluate physiological impacts of the intervention
- Include long-term follow up to view the long-term success of similar interventions
- Include all family members into the intervention

REFERENCES