

## RESEARCH BRIEF

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### Integrating the Arts into Primary Care to Improve Weight and Promote Positive Health Behaviors

#### Introduction

In the last three decades childhood obesity has increased markedly,<sup>1</sup> with serious health consequences ranging from cardiovascular disease to endocrine system and mental health problems.<sup>2</sup> Children in rural communities are no exception to the obesity epidemic. For instance, a 2012 study with Immokalee children found that about 50% of children were overweight or obese.<sup>3</sup> Primary-care based interventions for overweight children have been effective for helping adults and adolescents reduce weight and improve physical activity,<sup>4,5</sup> however, there is a lack of effective interventions that target obesity among young children.

Dance has become important in the prevention and management of many health conditions. Not only can dance be an important and effective part of a timed intervention, dancing is a form of art and exercise that many people can enjoy throughout the lifespan.

#### PRELIMINARY RESEARCH RESULTS

*Salud Immokalee* is a pilot project incorporating dance into a primary-care multi-disciplinary program to improve the health and behaviors of children who have been diagnosed as being overweight/obese. A group of 30 children, ages 6 to 11, participated in a 6-week program taking place in a community health center. Children in the program were either being treated for a weight problem, or were the sibling of a child under treatment. Siblings were included to facilitate the promotion of health behaviors for the entire family. Children attended 3 dance sessions weekly, facilitated by a professional dance instructor, and children and their parents participated separately in a weekly psychoeducational class, facilitated by a psychologist, covering topics such as: “Why worry about weight?” “My Eating Plan;” and “Developing a Health Body Image.” Evaluation of the program at the end of the 6-weeks assessed for improvements in anthropometric measures (weight status), time allocated to physical activity, and psychological well-being (i.e., behavior problems, self-esteem).

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The Immokalee Arts in Health Program is a collaborative partnership of The Florida State University College of Medicine, The Healthcare Network of Southwest Florida and several other community agencies to promote the use of the arts in healthcare. Initial funding for the project came from The Arts in Healthcare for Rural Communities initiative, a joint effort of the Florida Division of Cultural Affairs and The UF Center for Arts in Medicine.

For more information about Immokalee Arts in Health, visit

[www.facebook.com/ImmokaleeArtsHealth](http://www.facebook.com/ImmokaleeArtsHealth)



Preliminary findings include:

- **Children’s weight status improved following participation in *Salud Immokalee*.** Prior to the intervention, overall 89% of children had BMI %tiles falling within the Obese or Overweight range and 11% Normal weight. Following the program the percentage of children with BMI %tiles in the Obese or Overweight range fell to 84% and Normal weight BMI %tiles increased to 16% (See Table 1). This weight improvement may have also contributed to a slight improvement seen in systolic blood pressure (average dropped from 106 to 102).
- **Program participation led to improvements in time allocated to physical activity.** The Children’s Leisure Activities Study Survey<sup>6</sup> (CLASS) was utilized to measure physical activity: Approximately 75% of parents reported that their child increased the amount of time spent on physical activities. On average, by the end of the program children were spending an additional 56 minutes per day in moderate-to-vigorous intensity physical activities, at home or in the community.
- **Program participation led to a reduction in the amount of time allocated to sedentary activity.** The CLASS was also utilized to measure sedentary behaviors: close to  $\frac{3}{4}$  of children participating reduced the amount of time spent on sedentary activities, such as TV and video games. On average, children reduced their weekly sedentary activities by 213 minutes.
- **Behavioral improvements observed.** The Strengths & Difficulties Questionnaire (SDQ), a measure to screen for emotional and behavioral problems in children, was completed by parents before and after program participation. Figure 1 indicates the percentage of children with *any* level of improvement in behaviors across each of the scales assessed. Overall, children’s prosocial behaviors improved, conduct problems were reduced and the total number of behavior difficulties reported by parents decreased. For instance, 41% of children had an improved score on the Conduct Problems Scale, meaning that their parents reported a decrease in behavior problems. Approximately 37% of children had an improved score on the Prosocial Behaviors Scale, indicating that their parents reported their children engaging in prosocial behaviors more frequently.



- **Parents responded positively to program participation.** Parents of children participating in the program provided insight about their program experience:
  - *Music & Dance:* Parents noted the impact of music & dance on their children and themselves. One parent stated: “It can help with sadness and stress ... to motivate and bring up the spirits.” Parents reported their children having fun while exercising and teaching others how to dance, repeating routines learned during the program:

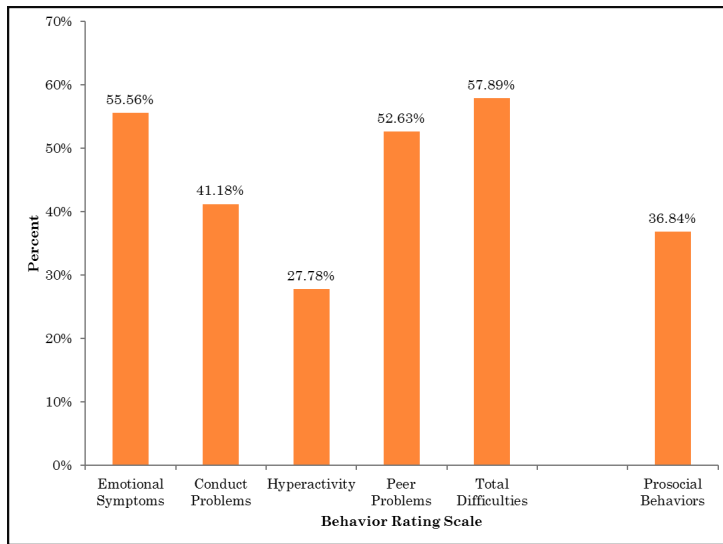
*“My daughter teaches other kids how to dance, remembers about the program when making food choices, is less angry...calmer she understood the information and now prefers to be healthy inside [self-esteem] rather than [just] outside ... she is happy for her weight loss, and drinks more water.”*
  - *Culture & Health:* Parents discussed the role of culture and how some customs can be impediments to certain health behaviors. One parent reflected on her family’s custom to ensure that a child eat *everything* on their plate before leaving the dinner table or not be allowed to drink water until after finishing a meal as to avoid “becoming full.” Parents came to understand that some learned habits can be altered to improve one’s health.
  - *Program Setting:* Parents responded favorably to programing taking place in a primary-care setting. The connection of their primary care team (pediatrician, nursing staff, and Behavioral Health providers) to the intervention appeared to increase willingness to participate and compliance with program recommendations (i.e., changes in diet and exercise).



**Table 1: Percent of Children with BMI %tiles in the Normal and Overweight/Obese Categories Before and After Program Participation**

| Weight Status    | BEFORE Program | AFTER Program |
|------------------|----------------|---------------|
| Normal           | 11%            | 16%           |
| Overweight/Obese | 89%            | 84%           |

**Figure 1: Percentage of Children with *any* Level of Behavioral Improvement Across SDQ Scales following Program Completion**



### Conclusion and Implications

Previous research findings identify obesity as a serious, common and oftentimes untreated problem among children. They also highlight the need for programs that facilitate early intervention and that improve parental interest in influencing their child’s health and weight. Dance should be considered when designing programming; dance not only has cardiovascular benefits, but also provides a culturally-relevant activity that can help promote a lifetime of exercise and enjoyment.



Preliminary findings provide support for the inclusion of dance in programming to improve weight, physical activity, and behavior. Children participating in *Salud Immokalee* overall showed some weight improvement, as noted by BMI %tiles. Although the measures of weight improvement were limited to a 6-week period, initial results are encouraging - particularly given the fact that the amount of time spent in physical activities increased and sedentary behaviors decreased, thus providing potential for additional weight improvements into the future. Children participating also had improved conduct and an increase in frequency of prosocial behaviors. Future evaluations of such programming could utilize a larger sample and evaluate for behavioral improvements beyond program completion.

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<sup>1</sup>Caprio S, Daniels SR, Drewnowski A, Kaufman FR, Palinkas LA, Rosenbloom AL, et al. Influence of race, ethnicity, and culture on childhood obesity: Implications for prevention and treatment. *Diabetes Care* 2008; 31(11): 2211.

<sup>2</sup>Davison KK, Birch LL. Weight status, parent reaction, and self-concept in five-year-old girls. *Pediatrics* 2001; 107, 46-53.

<sup>3</sup>Rosado JJ, Johnson SB, McGinnity KA, Cuevas JP. Obesity among Latino children within a migrant farm worker community. *American Journal of Preventive Medicine* (under review).

<sup>4</sup>Wadden TA, Berkowitz RI, Vogt RA, Steen SN, Stunkard AJ, Foster GD. Lifestyle modification in the pharmacologic treatment of obesity: A pilot investigation of a potential primary care approach. *Obes Res* 1997; 5, 218-226.

<sup>5</sup>Patrick K, Calfas KJ, Norman GJ, Zabinski MF, Sallis JF, Rupp J, et al. Randomized controlled trial of a primary care and home-based intervention for physical activity and nutrition behaviors: PACE+ for adolescents. *Arch Pediatr Adolesc Med* 2006; 160(2), 128-136.

<sup>6</sup>Telford, et al. Reliability & validity of physical activity questionnaire for children: The Children's Leisure Activities Study Survey. *Ped Exerc Sci* 2004; 16, 64-78.

