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Preschoolers in classrooms with Early Childhood Educators (ECEs) who have higher fidelity benefit more from intervention, as indicated by a significant decrease in BMI percentile.

Association Between Teacher Fidelity to the WISE Intervention and Early Childhood Health Outcomes

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Background: Early Childhood Educators' (ECEs) food-related behaviors can significantly influence child health outcomes (CHOs). The We Inspire Smart Eating (WISE) intervention program trains ECEs in promoting fruit and vegetable consumption by encouraging children's healthy eating habits. WISE provides a 6-hour training and curriculum for weekly sensory-based lessons with eight target foods.

Objective: This study explores the association between ECE WISE fidelity and CHOs. We hypothesize that higher median fidelity scores across time are associated with improved CHOs.

Study Design, Setting and Participants: Research assistants (RAs) observed lesson fidelity during lessons eight times across an academic year. RAs scored ECEs on a 1 ("Not at all") to 4 ("Very much") scale for three evidence-based practices: hands-on exposure, mascot use, and role modeling. Child participants were African American 63.4%, Caucasian 28.5%, or other 8.1% (N= 659, $M_{age} = 4.70$, 50% female).

Measurable Outcome/Analysis: Median fidelity scores of ECEs' lessons (N=30) were calculated to convey fidelity performance across time. CHOs include Body Mass Index (BMI) percentile and Resonance Raman Spectroscopy (RRS) scores. Change scores ($BMI\Delta$ and $RRS\Delta$) were calculated by subtracting pre-intervention from post-intervention scores.

Results: In total, 463 children had $BMI\Delta$ and 273 had $RRS\Delta$. A linear regression revealed a significant association between fidelity and $BMI\Delta$ $F(1, 462)=5.068, p=0.025$ (Beta=-1.315). Results indicate that ECEs with higher fidelity scores had statistically significantly lower $BMI\Delta$ at post-intervention compared to ECEs with lower fidelity scores. Specifically, a one-point increase in fidelity was associated with a 1.315 decrease in BMI. The association between fidelity and RRS was not statistically significant $F(1, 272)=0.28, p=0.60$. Multilevel analysis showed variance accounted for by nesting in classroom was not significant.

Conclusions and Implications: Children in classrooms with ECEs with higher fidelity may benefit more from the WISE intervention as indicated by $BMI\Delta$. Thus, efforts to improve ECEs' adherence to the evidence-based practices of WISE (e.g., implementation strategies) may enhance the impact of the intervention.



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