JACC: Early Intervention in preschool is a unique opportunity for promoting a healthy lifestyle

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New study proves educating young children on health and fitness is effective

Children may have a better chance of avoiding unhealthy habits linked to obesity and cardiovascular disease later in life if they are taught properly about healthy behaviors in preschool, Mount Sinai researchers have shown in a first-of-its-kind study.

The researchers focused on children living in a socioeconomically disadvantaged community, a situation that is commonly linked to higher rates of obesity, heart disease, and other health issues.

Valentin Fuster, MD, PhD, Director of Mount Sinai Heart and Physician-in-Chief of The Mount Sinai Hospital, created and led the trial, called the FAMILIA Project at Mount Sinai Heart. The results were published in the April 22 online issue of *Journal of the American College of Cardiology*.

“The interventions that we applied in the school system are low cost and easy to implement, and we hope in time they can be integrated into schools across the country to promote healthy behaviors among children to ultimately reduce their risk factors for developing heart disease throughout their lives,” explained Dr. Fuster. “Results from this new study prove early intervention is effective in preschool-age children, but we believe this can also promote healthy behaviors among their caregivers and teachers and have a far-reaching impact.”

562 preschoolers

Researchers analyzed 562 preschoolers (ages three to five) in 15 different Head Start schools in Harlem, in New York City’s borough of Manhattan. Harlem’s population is predominantly African American and Latino, groups that experience a higher risk of cardiovascular disease. Two groups of children went through the trial for one four-month period between 2015 and 2018. At the beginning of the study, all children answered a simple questionnaire, which included pictures for easier comprehension, to test their knowledge, attitudes, and behaviors regarding diet, physical activity, how the human body and heart works, and emotions. For example, the children were asked to pick out which foods were healthier in a cluster that included vegetables, fruits, and cheeseburgers/fries. They were also asked how often they run, jump, and play.

Children in six preschools (the control group) went through their regular classroom curriculum, while children in the other nine preschools (the intervention group) went through a different learning program created by cardiologists, psychologists, and educators. In 38 hours of classwork over the four-month period, teachers taught the intervention-group preschoolers about **healthy diet, physical activity, how the human body works, and managing emotions**. Caregivers were also told to engage in 12 hours of specific activities with their children on weekends during the four months, including buying fresh fruit at the grocery store and choosing physical activity over sedentary behavior.

After the four months, researchers gave that same questionnaire to children in both the control and intervention groups and then compared them. Preschoolers in the intervention group improved their knowledge and attitudes toward a healthy lifestyle by 12 percent, more than twice as much as the control group at 5.5 percent. (The control group was expected to improve, as the regular curriculum included a component of health education.) Children in the interventional group with the lowest questionnaire scores at the start of the study improved the most, and those who got at least 75 percent of the interventional curriculum fared better than those who received less than half of it (this also confirms the efficacy of the intervention and if it was if the intervention was successfully implemented). Additionally, researchers found the curriculum was more effective for four-year-olds than three-year-olds, suggesting that that could be the ideal age for starting the intervention because four-year-olds are more mature and able to better retain information.

Comprehensive Health Program (SI!)

This study follows other successful interventions led by Dr. Fuster in Colombia and Spain, but FAMILIA is unique in being the first time the health promotion curriculum was implemented in a multi-ethnic, underprivileged urban population. Its precedent is the **Comprehensive Health Program (SI!)** That is still underway in Spain. The study, led by the SHE Foundation "la Caixa", chaired by Dr. Fuster, has the scientific collaboration of the CNIC and the Mount Sinai Hospital. This intervention program is designed to promote cardiovascular health, from pre-school to high school, intervention in four areas directly related to: nutrition, body and heart awareness, physical activity and emotional management.

Dr. Fuster and his team plan to expand the program across the five boroughs of New York City. This ambitious project will also evaluate how family socioeconomic status and teachers´ characteristics may affect the implementation and the efficacy of school-based health promotion programs.

- Fernandez-Jimenez, R., Jaslow, R., Bansilal, S., Santana, M., Diaz-Munoz, R., Latina, J., . . . Fuster, V. (2019). Child Health Promotion in Underserved Communities. The FAMILIA Trial, 73(16), 2011-2021. doi:10.1016/j.jacc.2019.01.057
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