

Effectiveness of a 16-month multi-component and environmental school-based intervention for recovery of poor income overweight/obese children and adolescents: Study protocol of The Health Multipliers Program

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Excess of weight is a serious public health problem in almost all countries afflicting people from different ages and socioeconomic levels. Studies have indicated the need for developing strategies of treatment that intervene directly in the obesogenic environment. This study aims to evaluate the effectiveness of a multi-component and environmental school-based intervention, lasting 16 months, for the recovery of the nutritional status of low-income children and adolescents with overweight/ obesity. **Methods/ Study design** The study is conducted by the Center for Recovery and Nutritional Education (CREN) in the city of São Paulo, Brazil. Two schools located in poor neighborhoods were selected for the intervention. The intervention duration is from March 2016 to June 2017. The participants are 791 students aged 8 to 12 that make up the universe of students of this age in the two schools. At the beginning of the intervention anthropometric

measurements were carried out to assess nutritional status. One school was chosen for convenience to be the control group and the other to be the experimental group. The intervention of the experimental group (n = 438) consists of the following weekly activities at school: psychological counseling in groups, theoretical/practical nutrition workshops and supervised physical education classes. In addition, theoretical and practical educational activities are held regularly for parents, teachers and cooks. Students with excess of weight (>1 BMI –for-age Z score, n = 138) underwent clinical and nutritional care periodically in outpatient care at CREN. Students enrolled in the control group (n = 353) participated in psychological counseling groups and theoretical/practical nutrition workshops for 6 months that took place in the school environment with the whole classroom for motivational purpose. In the following 10 months the students with excess of weight from the control group (n = 125) were invited to attend the routine outpatient care at CREN. **Discussion:** This study is the first to assess the effectiveness of a multi-component and environmental school-based intervention for the recovery of low-income overweight/obese children and adolescents. If positive, the results will demonstrate the feasibility for the recovery of excess of weight in populations in similar conditions and age.

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