



An Employee-Owned
Research Corporation

Healthy School Program Evaluation

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Background

- Healthy School Program (HSP) was started by the Alliance for a Healthier Generation (AHG) in 2006
- Since 2006, HSP has reached 29,000 schools and 17 million students



Background

- Obesity epidemic
 - 18.7 percent of children and adolescent are obese
 - 33.2 percent of children and adolescent are overweight
- Children with excess weight are more likely to become adults with excess weight
- Obesity is associated with negative school outcomes

Background

- Disparities in the prevalence of obesity are expected to continue
 - Gap by race and income
 - Children living in poverty are at higher risk of obesity
- Healthy habits are formed in childhood
- Schools can play an important role in preventing childhood obesity

Background

- AHG targets schools in high-poverty neighborhoods
- HSP program
 - Encourages physical activity
 - Promotes healthy eating



Program Description

- Six-Step Process

- Building support
- School assessment
- Active planning
- Explore resources
- Take action
- Celebrate success



- Schools are encouraged to check their progress, make improvements and learn from challenges.

Program Implementation

HSP Schools

- Receive onsite technical assistance
- In person visit and coaching from program managers
- Attend district training sessions
- Connect with national content experts
- Resources available---tool kits and step-by-step instructions

Program Implementation

- Health education
 - Health education curriculum
 - Farm to school initiatives
 - Access to local foods
 - Field trip to local farms
 - School garden activities



Program Implementation

- School nutrition

- Offer students at least 3 different fruits and vegetables everyday



Program Implementation

- Provide physical education classes
- Recess 5 days per week
- Provide afterschool program with physical activities
- Students are engaged in physical activities throughout the day



Program Evaluation

Evaluation Goals

- Understand the impact of HSP on the obesity rate of students
- Help HSP improve program implementation
- Provide schools with data and information

Program Evaluation

Research Question:

What is the impact of the HSP on the student health as measured by Body Mass Index (BMI)?

- BMI is an estimation of body fat that can be calculated using a person's height and weight
- A retrospective, quasi-experimental study to examine the effects of implementing HSP

Evaluation Design

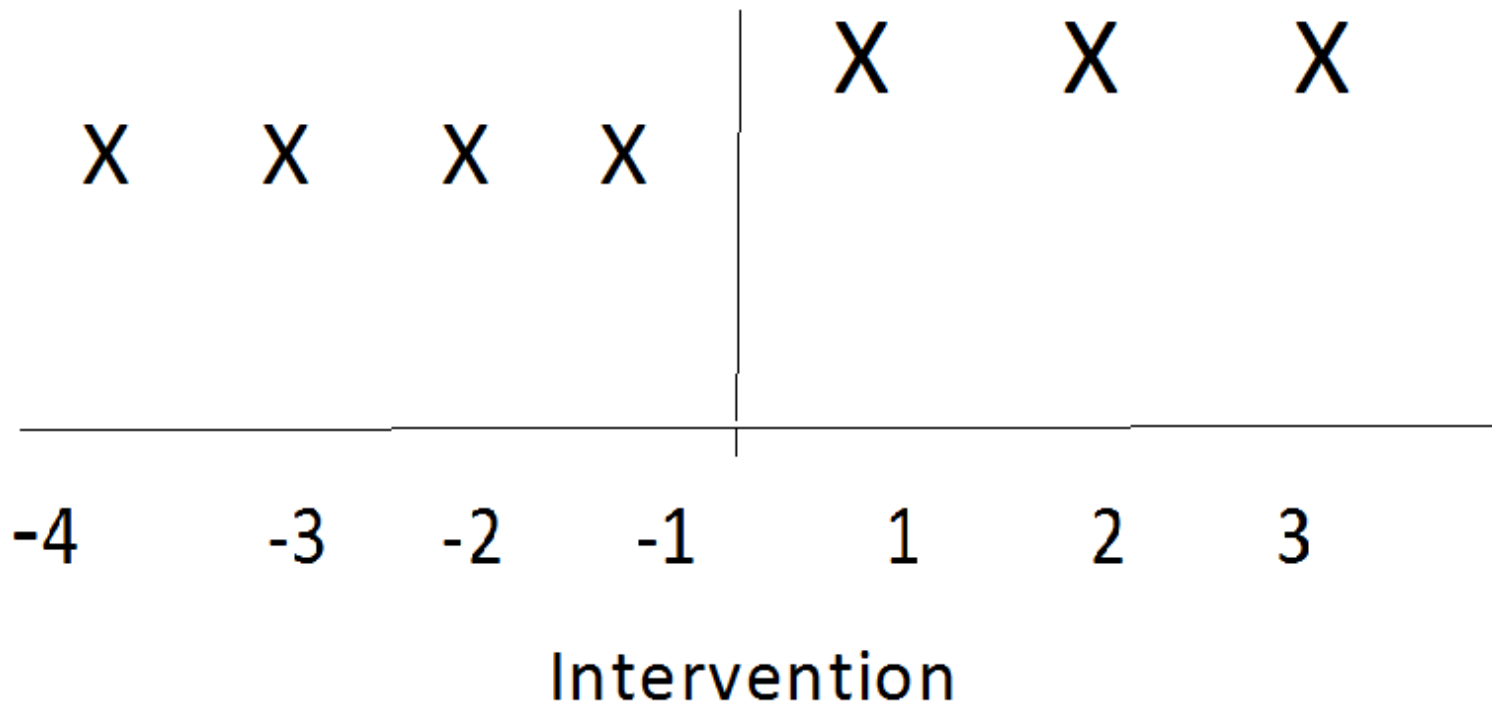
Interrupted time series study design

- Time is needed for schools to make the appropriate changes to their wellness policies and practices.
- Examine student health data trends a few years before and a few years after HSP implementation
- School-level student obesity data were already collected by some states
- Data were available by grade and by gender

Interrupted Time Series

- The HSP intervention is the interruption
- Time series: outcomes measured over several years
- Evidence of change after the interruption

Interrupted Time Series



Matching Comparison Schools

- School Comparisons
 - HSP treatment schools
 - Comparison schools within the districts were matched to HSP schools
- Schools were matched based on
 - School-level Body Mass Index scores
 - Percent of students eligible for free and reduced lunch

Challenges in Evaluation

- States that have HSP schools but do not collect student health outcome data
- States do not have data at the school level
- States vary in how they measure and define obesity
 - Some states require body composition assessment
 - Other states report obesity by using BMI percentiles by age
 - Some states only collect data for certain grades and skip certain years

Challenges

- Some states have collected the data and do not know where the data have been stored or which department is responsible to keep the data.
- The data available are not in the format ideal for analysis (e.g. PDF format)
- Data are managed by third party and data access requires a lengthy approval process
- Partial data are available (missing certain schools in the districts)

Data Gathering

Data were collected from the following states

- Texas
- Arkansas
- West Virginia
- Kansas
- California

Analysis Plan

- Setting up data set for analysis
- Create a time variable that indicates the start of the intervention
 - Years before the intervention are coded 0
 - Years after the intervention are coded 1

Preparing Analysis Data

School ID	Grade	Gender (M=1; F=0)	Treatment Group (1, 0)	Calendar Year (e.g.2008)	Year Count (-4,-3,-2,-1,1,2,3)	Treatment Year Indicator	BMI (under and healthy weight)
12341	2	1	0	2012-2013	3	1	57.7
12467	2	0	1	2012-2013	3	1	61.7
18942	2	1	0	2011-2012	2	1	62.9
12903	2	0	0	2011-2012	2	1	53.3
13479	2	1	1	2010-2011	1	1	59.5
13276	2	0	0	2010-2011	1	1	65.5
12094	2	1	0	2009-2010	-1	0	65.3
12572	2	1	1	2008-2009	-2	0	69.5
12987	2	0	1	2007-2008	-3	0	68.7

Analysis Plan

- Comparison group: difference between projected and observed data for post-intervention years
- HSP treatment group: difference between projected and observed data for post-intervention years

- The program impact
 - Difference-in-Differences model

Analysis Plan

Regression Model

$$Y_{jk} = B_0 + a_{0k} + B_1 (\text{Group}_k) + B_2 (\text{TreatYear}_{jk}) + B_3 (\text{Group} * \text{TreatYear}_{jk}) + e_{jk}$$

Group = 1 if HSP school; Group = 0 if comparison school

TreatYear = 1 if post treatment years; TreatYear = 0 if pre treatment years

Future Steps

- Adding 2015-2016, 2016-2017 school year data to the existing data sets
- Conduct ITS data analysis
- Evaluating intervention over a longer period of time provides a more accurate estimation of program impact

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