Evaluation of Physical and Nutrition Education Programs at Massachusetts Department of Youth Services Residential Facilities

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BACKGROUND

Project HOPE

The Massachusetts Comprehensive Health Curriculum Framework provides standards for physical and nutrition education in public schools. However, the curricula taught to students incarcerated at Department of Youth Services (DYS) residential facilities have not historically met these standards. The Collaborative for Educational Services (CES) is contracted by DYS to provide educational services to students in all residential programs. With grant funding, CES implemented Project HOPE (Healthy Opportunities, Positive Effects) to pilot physical and nutrition education programs at DYS programs from 2009-2013. Five certified health and wellness (H+W) teachers were hired to teach a curriculum aligned with MA standards and to build DYS staff capacity around physical and nutrition education.

Target outcomes

Project HOPE outlined five target outcomes for youth in participating programs:

1. 75% of youth in participating programs will engage in moderate to vigorous physical activity (MVPA) for at least 225 minutes/week. *(GPRA measure)*
2. 100% of DYS students in pilot programs will develop personal health goals
3. 75% of DYS students in pilot programs will report an increase in self-efficacy to engage in physical activity and eat healthier.
4. 60% of participating students will have increased heart health.
5. 60% of DYS students in pilot programs will report eating more fruits and vegetables.

Over the past four years, the Institute for Community Health (ICH) worked with CES to design and implement an evaluation plan to measure progress towards achieving Project HOPE target outcomes. ICH helped CES gather and report on performance measures and outcome data, as well as assess the impact of Project HOPE on DYS students and staff.

METHODS

Instruments

The evaluation primarily employed quantitative (i.e., survey) methods. Three instruments—the Physical Activity Log, the Student Assessment Survey, and the Student Fitness Assessment—were used to collect outcome data. Instruments were developed during Year 1 and implementation began in Year 2. Baseline and Year 1 data were only collected for physical activity.

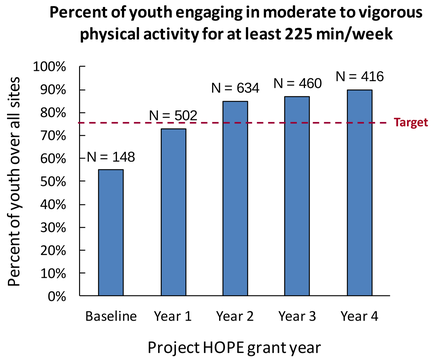
INSTRUMENT	DESCRIPTION	PRIMARY OUTCOMES
Physical Activity Log	- Log reporting type of activity (PE, moderate, or vigorous) and number of minutes engaged in activity by day of the week	- Number and percentage of students who engage in 225 minutes of MVPA per week *(GPRA)*
Student Assessment Survey	- Survey to measure knowledge, attitudes, and behaviors related to physical activity and nutrition as well as resting heart rate	- Increased fruit & vegetable consumption - Increased self-efficacy - Increased heart health
Student Fitness Assessment	- Survey to measure height, weight, body fat %, BMI, personal health goals and progress towards health goals	- Personal health goals

Data collection and analysis

Health and Wellness (H&W) teachers were trained on administering the three instruments. Unique ID numbers were used to protect the confidentiality of each student. Data were collected from 15 sites each year, which some sites participating for multiple years. Students completed the instruments on their own, with H&W teachers providing assistance as needed. Data were collected four times each year, with each data collection period lasting one week. H&W teachers entered all data collected during these weeks into an online database created by ICH. The evaluation team then downloaded, cleaned, and analyzed the data. Data were analyzed in the aggregate across all programs, as well as by individual program, for each data collection week. In addition, using data from students who participated in multiple data collection weeks, individual change over time was also examined. For both crossectional and longitudinal data, univariate and bivariate analyses were done using SAS 9.1. Paired T-tests and McNemar tests were further computed to ascertain any significant changes in heart rate, body fat percentatg and body weight.

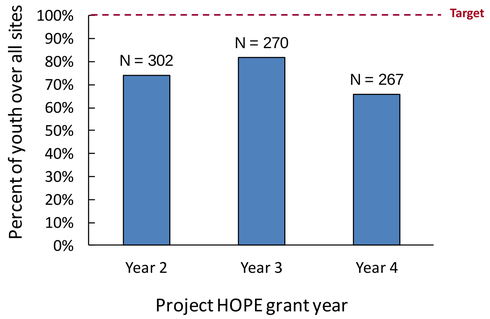
RESULTS

Target Outcome 1: 75% of youth in participating programs will engage in MVPA for at least 225 minutes/week



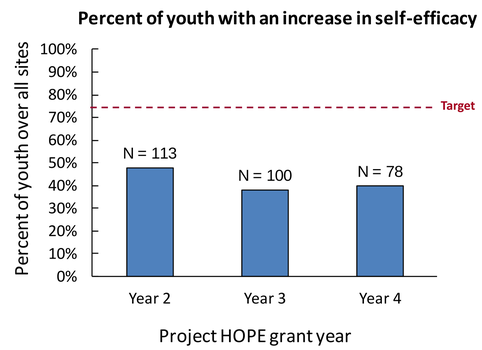
- For each year, data collected during all collection weeks were combined. Some students may have participated in multiple data collection weeks.
- Number of youth engaging in MVPA for at least 225 minutes/week increased every year
- Target was achieved for Years 2-4

Target Outcome 2: 100% of youth in pilot programs will develop personal health goals



- H+W teachers coached students on setting SMART (specific, measurable, achievable, relevant, time-bound) goals
- Example goals: "eat at least one vegetable or one fruit at every meal"; "do 100 pushups every other day during shift change"
- At least two-thirds of students developed goals each year, but the target was not achieved

Target Outcome 3: 75% of youth in pilot programs will report an increase in self-efficacy to engage in physical activity and eat healthier



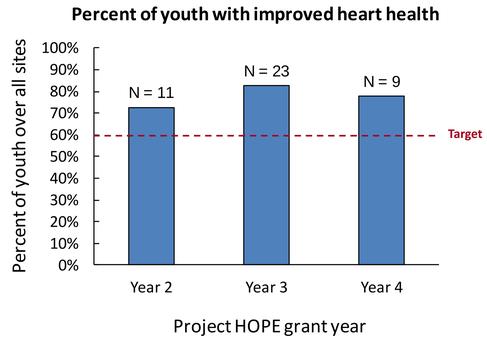
- Self-efficacy was measured by incorporating the General Self-Efficacy scale (GSE)[1] into the Student Assessment Survey
- GSE is a validated 10-item scale with response options ranging from 1 = "strongly disagree" to 4 = "strongly agree"
- Responses for the 10 items were averaged for each student
- Assessment of change was based on students who had completed the GSE at least twice
- 40-50% of students reported an increase in self-efficacy each year, but the target was not achieved
- Self-efficacy scores at first measurement were quite high on average (≥3.0 each year), making change difficult to achieve

REFERENCES

1. Leganger. A.. Kraft. P.. & Roysamb. E. (2000). Perceived self-efficacy in health behavior research: Conceptualisation, measurement and correlates. *Psvchology and Health. 15,* 51-69.
2. http://www.doe.mass.edu/cnp/hprograms/yrbs/

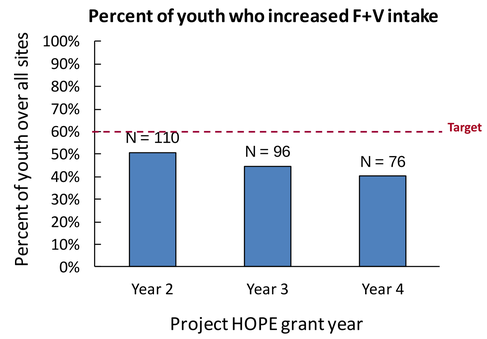
RESULTS

Target Outcome 4: 60% of participating students will have increased heart health



- Heart health assessed by measuring resting heart rate (HR)
- Based on American Heart Association guidelines, resting heart rate of <90 beats per minute (bpm) was categorized as healthy
- Assessment of change was based on students who had at least two HR measurements
- Each year, at least 75% of students had HR in the healthy range at first measurement
- Improvements in heart health were only assessed for students who had HR in the unhealthy range at first measurement
- Target was achieved each year

Target Outcome 5: 60% of DYS students in pilot programs will report eating more fruits and vegetables



- F+V intake questions were taken from the Youth Risk Behavior Survey[2] that is administered in schools throughout Massachusetts
- Questions assess the number of days in the last week that students ate at least 2 fruits or vegetables
- Assessment of change was based on students who answered these questions at least twice
- 40-50% of students reported an increase in F+V intake, but the target was not achieved

Challenges

- Due to the ongoing entry and exit of youth into the DYS system, it was not feasible to collect baseline data upon each student's entry into a residential program. Thus, data were collected at four set timepoints during the year, and some students may have already been exposed to Project HOPE for several weeks before participating in data collection
- Fruit and vegetable options are limited at some DYS sites
- H+W teachers are often not present during meals and have limited influence over food choices

CONCLUSIONS

- The target outcome for physical activity was consistently achieved, demonstrating that dedicated staff providing physical education can measurably increase physical activity among incarcerated youth
- Mixed success was observed for other outcomes
- Based on qualitative feedback from program directors and staff, health and wellness programming is highly valued for its positive effects on students' physical, mental, and emotional well-being, and health and wellness teachers are greatly appreciated for their role in maintaining this programming
- The most successful sites have developed environments that promote health and wellness and build upon H+W teachers' work (e.g., site leadership are commited to health and wellness, exercise is made part of the daily schedule and staff are highly involved in health and wellness activities)
- For further improvement around health and wellness outcomes, DYS may consider additional outreach to program directors and staff to share strategies for how best to promote and support health and wellness at their sites.