

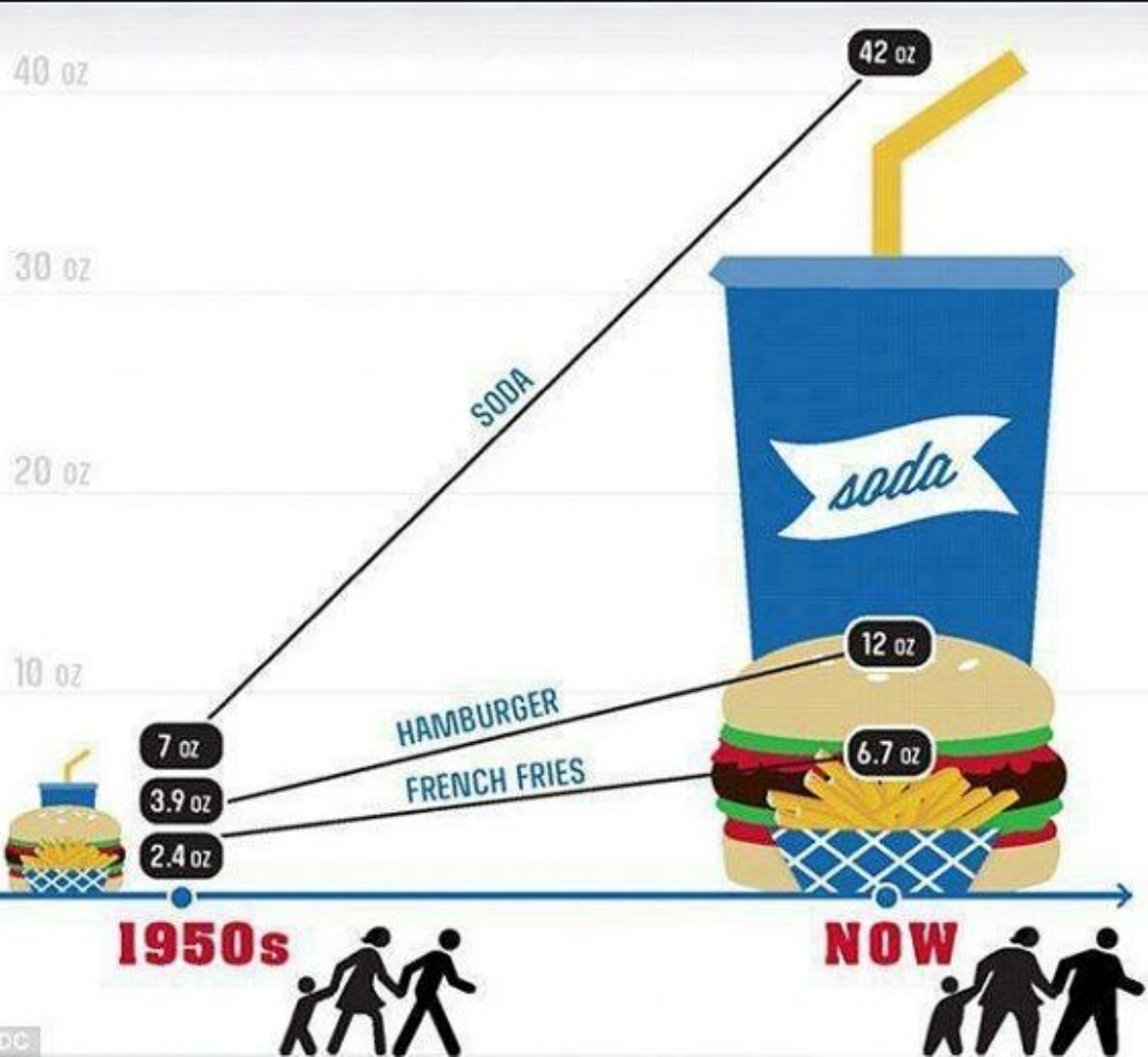
OBESITY - FAMILY GYM DORCHESTER

HALEY, AARUSHI, DAIRATH





But
first -
kids!



OUTLINE

- Introduction
- Volunteers
- Community Analysis
- Course of Action
- Health Action Plan
- Impact of Intervention
- Sustaining Intervention
- Conclusion
- References

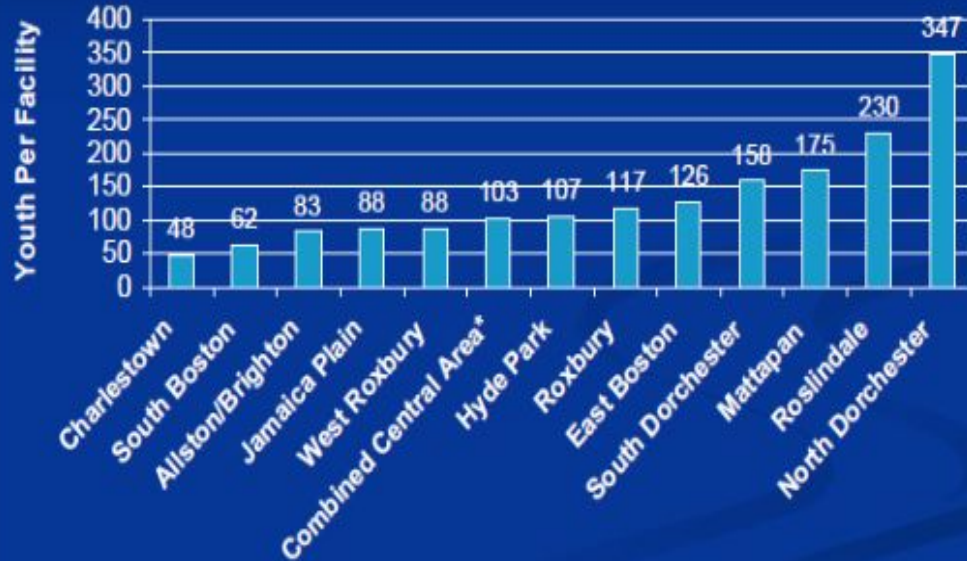
Image from
<http://econintersect.com/b2evolution/blog1.php/2013/01/15/a-small-info-graphic-on-obesity-with-a-big-message>



INTRODUCTION - GENERAL

- Mission Statement: “Family Gym is a free, weekly play program that promotes physical activity for children ages 3-8 and their families.”
- Aimed at decreasing obesity rates
- Physical activity and nutritional education programs

Number of Youth Per Recreation Facility Boston, 1999-2000



* Combined Central Area includes Beacon Hill/Back Bay, Central, Fenway/Kenmore, and South End.

DATA SOURCE: Play Across Boston: Summary Report, December 2002

INTRODUCTION - OUR SITE

- Holland Community Center in Dorchester, MA
- Site has been around since approximately September 2014
- Family Gym targets neighborhoods with high obesity rates, minority populations, food deserts, and opportunities/locations for recreational activities
- Funding from Boston Centers for Youth and Families (BCYF) and Boston Children's Hospital

VOLUNTEERS

Haley: Environmental
Science/Epidemiology



HARVARD
MEDICAL SCHOOL



Aarushi:
Biology/Global Health

**PEER HEALTH
EXCHANGE**



Dairath:
Biology/Economics



Intercept  pharmaceuticals



Community Analysis

- Dorchester is Boston's largest and most ethnically diverse neighborhood. ^{1,2}
- North Dorchester has a higher percentage of children living in poverty than the city of Boston (39.2%). ^{1,2}
- Children in low income families or part of minority groups experience higher rates of childhood obesity than others. ³
- Dorchester has transportation and food deserts. ^{1,2}
- Dorchester has higher homicide rates and injury-related hospital visits than Boston overall. ^{1,2}

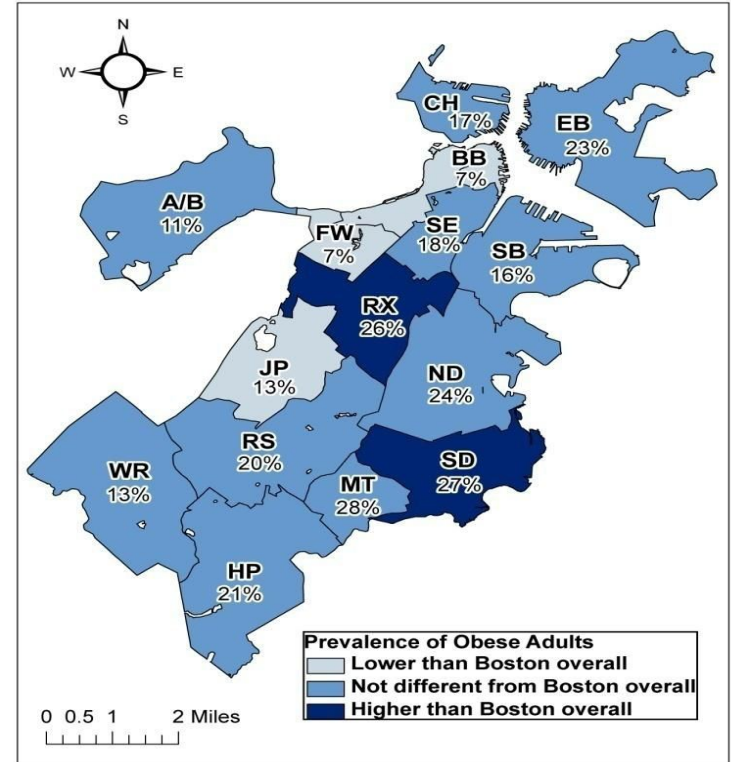


Image from Family Gym orientation pamphlet

Community Analysis¹⁵

- Lower income neighborhood (\$47,200 avg income)
 - Boston avg: \$55,777
- Parental Education Levels
 - Master's Degree or above: 8%
 - Bachelor's Degree: 16%
 - Some college or associate's degree: 23%
 - High School Diploma or equivalent: 32%
 - <High School Diploma: 20%



- Crimes rates (per 100,000 residents annually)
 - Assault: 527.3 (national: 282.7)
 - Murder: 15.9 (national: 6.1)
 - Robbery: 275.2 (national: 135.5)

Community Analysis

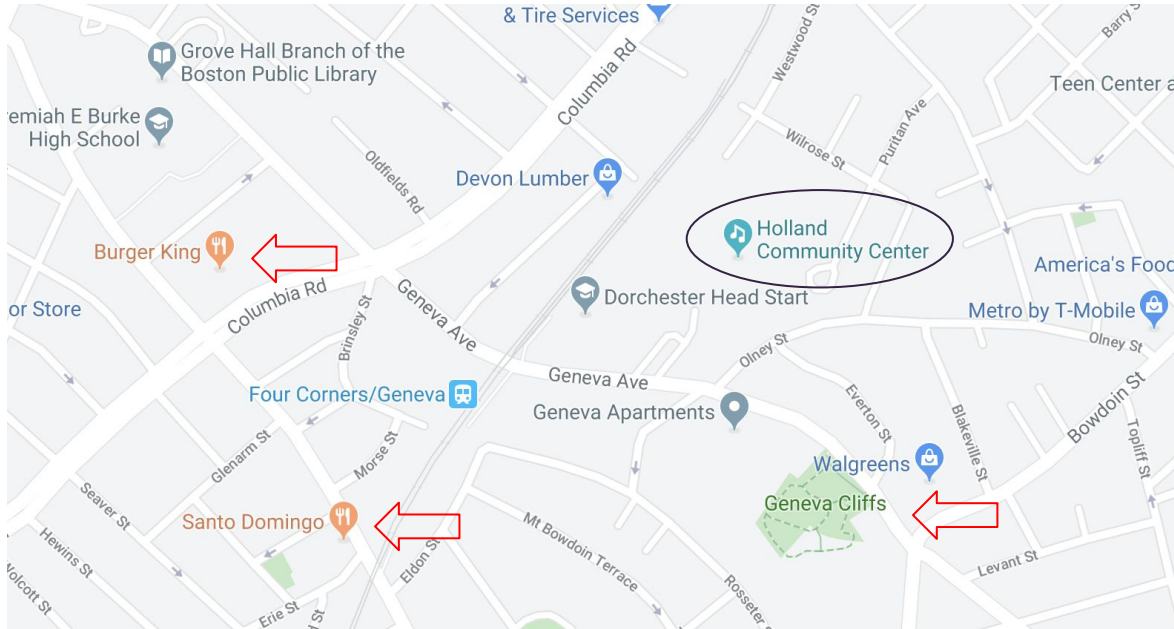


Image from Google Maps

- There are few playgrounds and parks in the vicinity of Holland Community Center, according to Google Maps.
- There are few healthy eateries close to Holland as well.

Community Analysis

Figure 1

Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education		Stress	
Support	Walkability				
	Zip code / geography				

Health Outcomes
 Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

Discussion question:

Which social determinants of health do you think affect our Family Gym site participants?



Image from

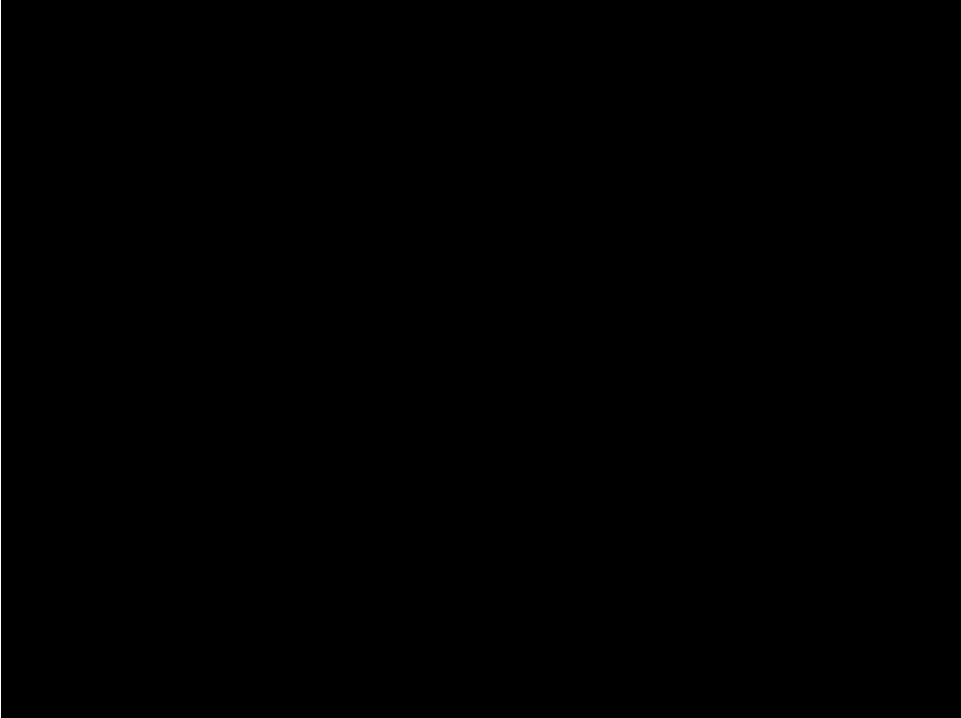
<https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>

Community Analysis

Assets

- Accessible location - residential area, MBTA
- Large physical gym space
- Availability of equipment

Constraints

- Lack of attendance - advertising
 - Continuity of volunteers - semester basis
 - Inability to act upon the information provided at programming sessions
- 

Community Analysis - Parent Survey

- Parents report low rates of weekly physical activity for themselves and their children
- Parents had not heard of many other obesity/health-related intervention programs in the area
- Parents indicated that they would like programming focused on exercise ideas, healthy recipes, and saving money at the grocery store

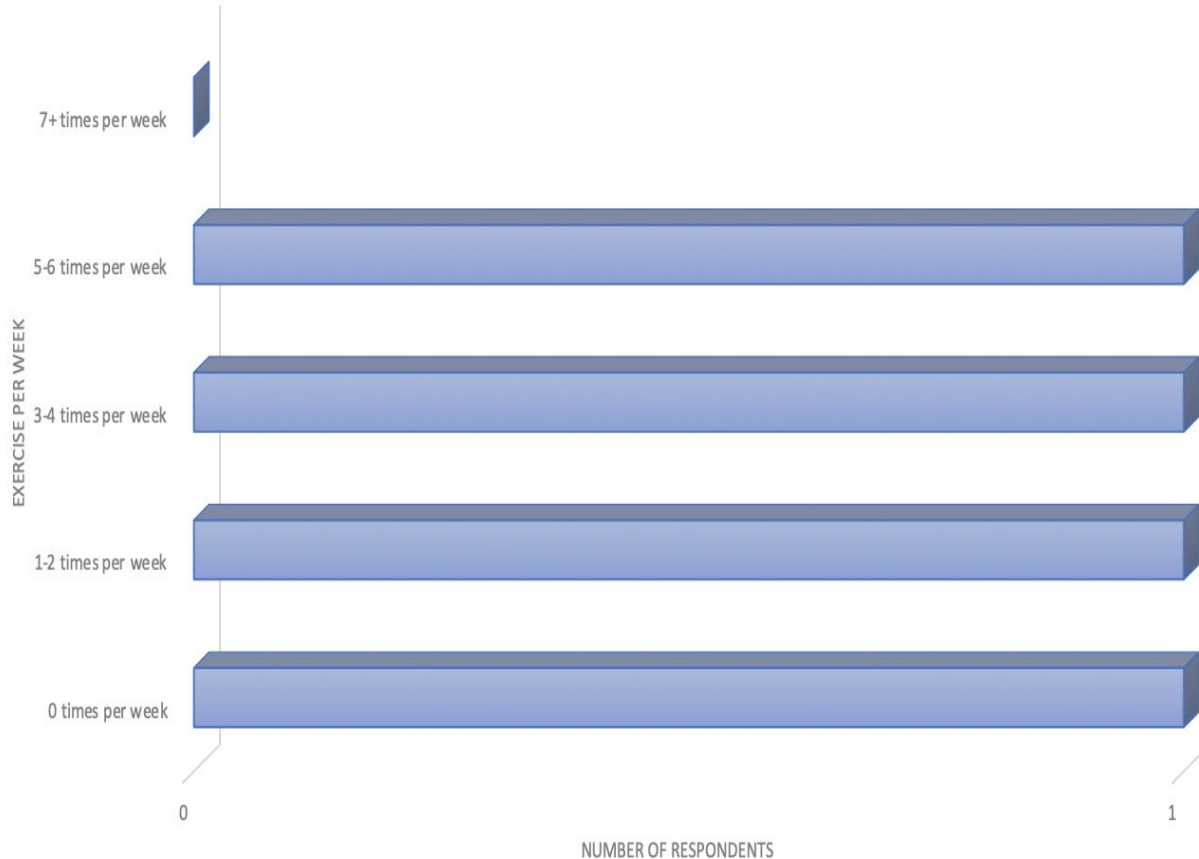
Hi! Please answer the following questions to the best of your abilities. We are working on a class project at Northeastern University regarding our volunteering at Family Gym and would love to use this data to make further analyses.

1. What is your email address (to potentially receive future information from us)?

2. What would you like to see included in our programming (circle all that apply):
 - a. Healthy recipes
 - b. Saving money at the grocery store
 - c. Serving size lessons
 - d. Family game ideas
 - e. Other exercise ideas
 - f. Boston health statistics
3. Have you heard of the following (circle all that apply):
 - a. Boston Moves for Health
 - b. Women Breathe Free
 - c. Prevention & Wellness Trust Fund (PWTF)
 - d. Healthy Incentives Program
 - e. Boston Alliance for Community Health (BACH)
4. How many times a week do you participate in physical activity for more than 60 minutes per day (not including Family Gym)? Circle the best choice.
 - a. 0 times per week
 - b. 1-2 times per week
 - c. 3-4 times per week
 - d. 5-6 times per week
 - e. 7+ times per week
5. How many times a week does your child participate in physical activity for more than 60 minutes per day (not including Family Gym)? Circle the best choice.
 - a. 0 times per week
 - b. 1-2 times per week
 - c. 3-4 times per week
 - d. 5-6 times per week
 - e. 7+ times per week
6. Where do you typically buy your groceries from?

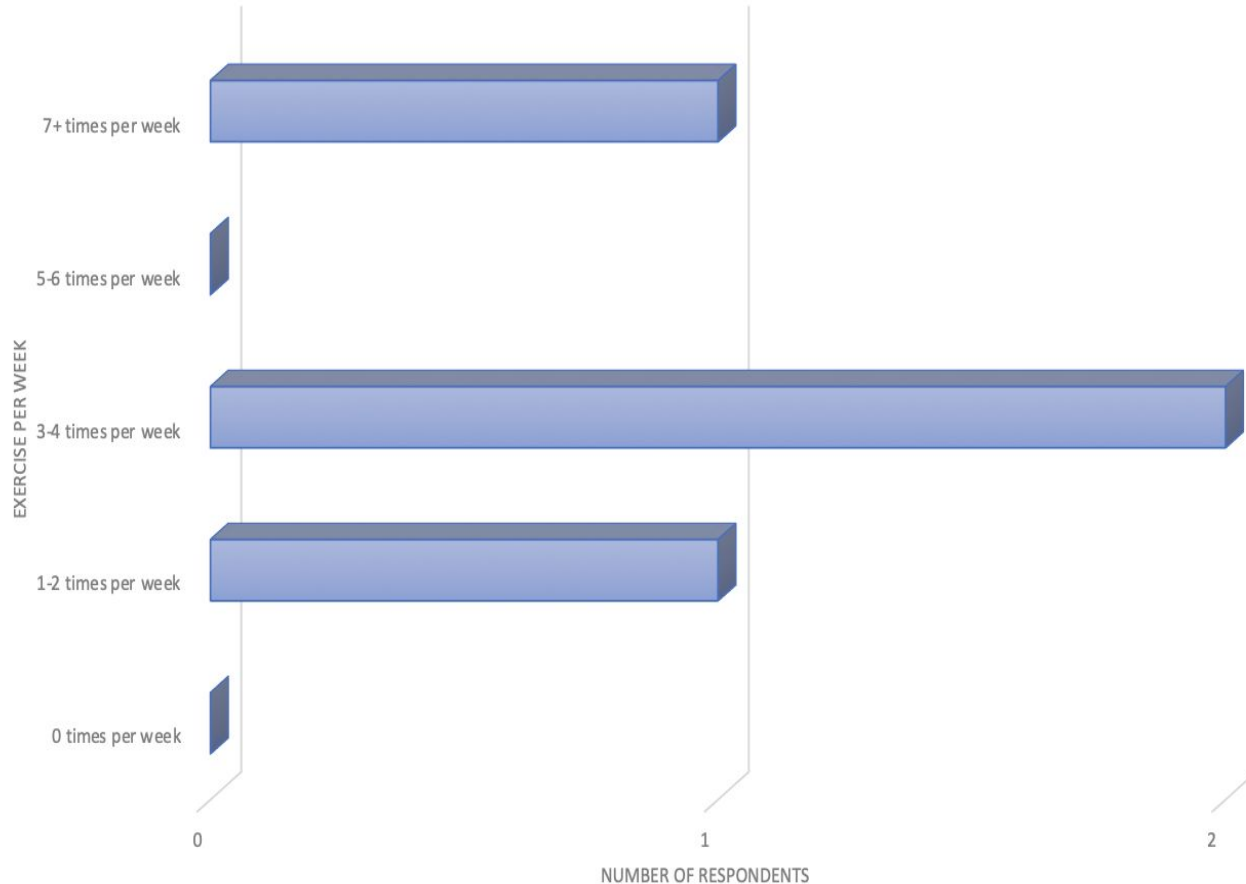
7. How close (approximately) do you live to this location of Family Gym?
 - a. >1 mile
 - b. 1-2 miles
 - c. 2-3 miles
 - d. 4+ miles

Community Analysis - Parent Survey



How many times a week do you (as a parent) participate in physical activity for more than 60 minutes per day (not including Family Gym)?

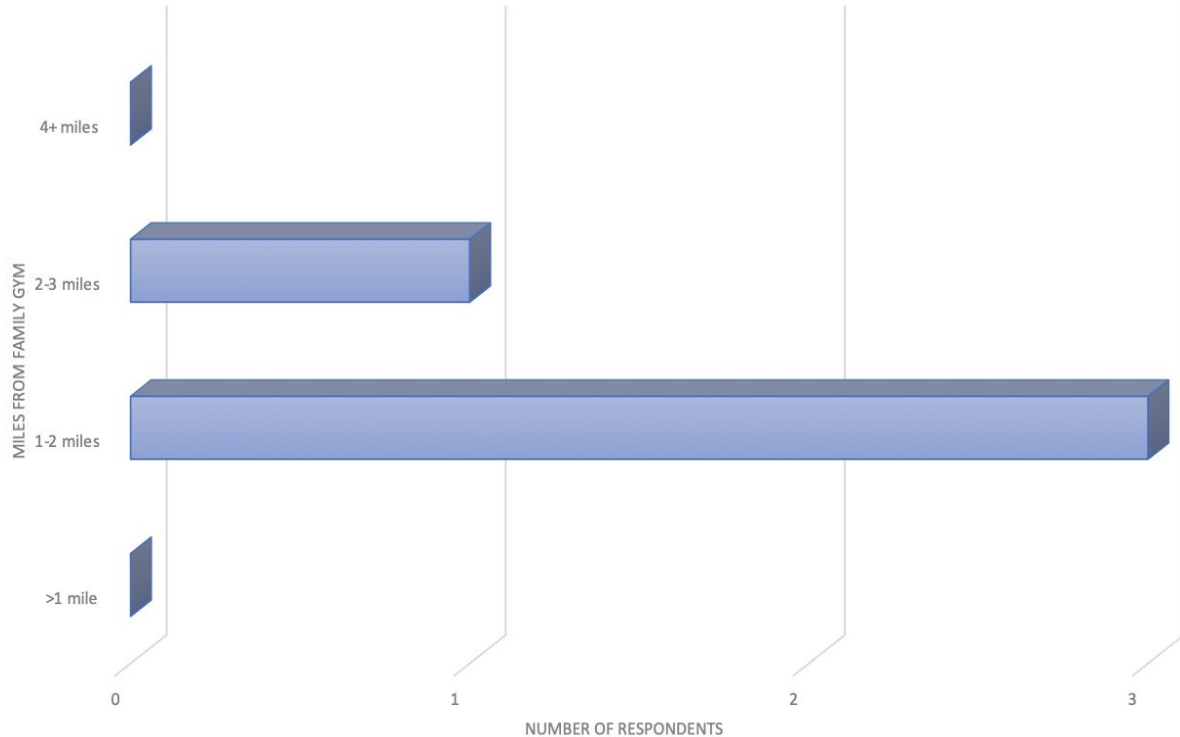
Community Analysis - Parent Survey



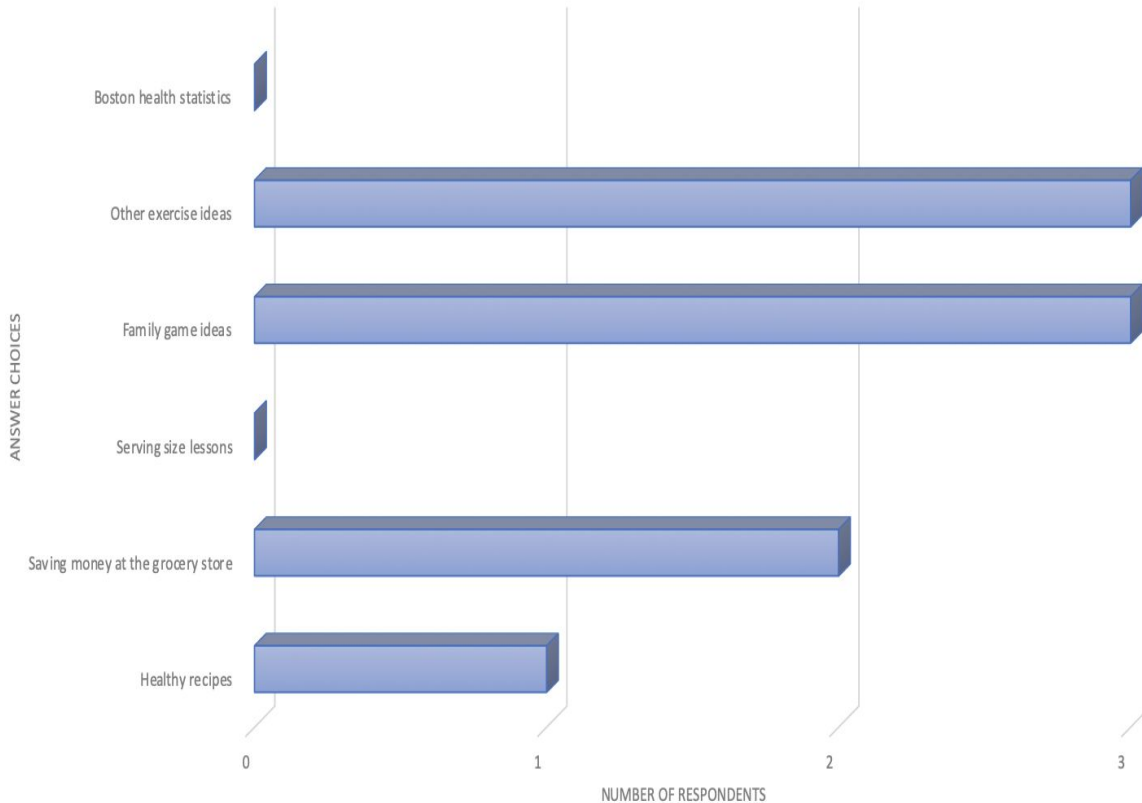
How many times a week does your child participate in physical activity for more than 60 minutes per day (not including Family Gym)?

Community Analysis - Parent Survey

How close
(approximately) do you
live to this location of
Family Gym?

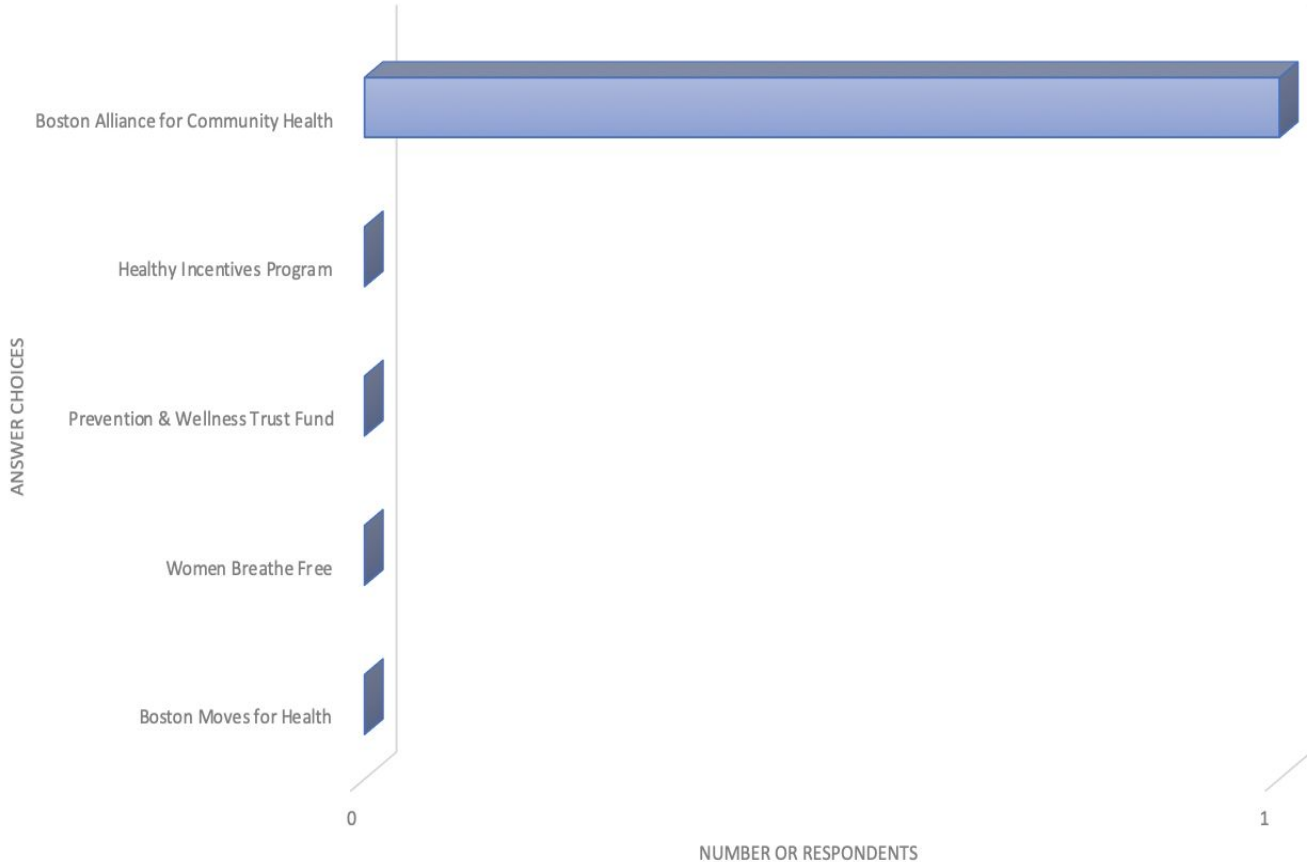


Community Analysis - Parent Survey



What would you like to see included in our programming?

Community Analysis - Parent Survey



Have you heard of the following?

Course of Action

- We created a pamphlet for Family Gym participants about other local organizations/programs that promote health and fitness in Boston populations.
- Organizations included in the pamphlet are:
 - Boston Moves for Health
 - Women Breathe Free
 - Prevention & Wellness Trust Fund
 - Healthy Incentives Program
 - Boston Alliance for Community Health

Prevention & Wellness Trust Fund (PWTF)

- Statewide program to improve health outcomes and reduce health inequalities across race, ethnicity and income (including obesity metrics - i.e. asthma and hypertension)
- Partnerships with different towns and cities in Massachusetts, including Boston
 - Clinical partners (i.e. Codman Square Health Center)
 - Community partners (i.e. Boston Public Schools)
- Obesity and its comorbidities result in “shorter lives, lower quality of life, and reduced productivity” and are 86% of national health care costs
- Identifies high risk patients and improves their health outcomes through various community outreach-associated activities (including Tai Chi, Chronic Disease Self-Management courses, etc.)
- For more information, see: <https://bit.ly/2PA0m1T>



Course of Action - Supervisor Survey

Kevin Wong, BCYF Special Project Coordinator



“Parents appreciate college students showing up on Saturday mornings. Students’ end of semester reflections not only help students reflect on service learning, but it helps evaluate how good of a match the course is with the partner site.”

Grace Tanguilig, Holland Site Supervisor



“I get the feeling that new volunteers don’t have a clear picture of what they’re coming into, and I think if there was some way for current volunteers to make a video or presentation to be shown to incoming volunteers, it could go a long way in helping new people feel more prepared.”

Course of Action - Institutional Change

- Encourage businesses to build gyms/grocery stores
 - Government subsidies
- Boston Schools - classes, meals, physical education
- Community recreational programs
- Advocacy training in schools



Image from: <https://www.wbur.org/radioboston/2018/07/31/final-deadline-state-house>

Course of Action - Advertisement

- Bring awareness to community
- Visit K-12 schools
 - Flyers
 - Parent-teacher meetings
- 2 more sites opening

Health Action Plan - 2 Pillars

1. Create a positive environment to encourage familial fitness, including free play (approximately 60 minutes weekly) followed by group activities (approximately 30 minutes weekly) customized to the age demographic in attendance that particular week.
2. Promote healthy eating habits through tailored lessons to Family Gym participants (approximately 20 minutes weekly, immediately after group activities and followed by stretching).



Health Action Plan

- Physical activity is a cornerstone of good physical health
- Programming Schedule:
 - 1 hour of free play
 - 30 minutes of stretching/group activity
- Nutritional lessons modified to structured games (ex. fruit-fruit-veggie)
 - Helps younger children to understand message



Image from:

<https://www.boston.gov/departments/boston-centers-youth-families/bcyf-family-gym>

Health Action Plan

SHARKS AND MINNONS

<https://www.youtube.com/watch?v=tBKKr1rcVEo>



Health Action Plan

- Nutrition programming
 - Each week we presented on different nutritional topics (see right).
 - For example, we presented a lesson on shopping on a budget.
 - This is particularly important for families with limited resources, as cost is a barrier to eating healthy for the most economically disabled. ⁵

FRUITS & VEGGIES

CHOICES What should we eat? why are they important? Benefits?

Learn more about this topic @Family Gym 10/19

Which of the following is **not** a way to save money when grocery

- Look for sale items
- Shopping when hungry
- Trying canned and frozen foods
- Buying fruits and vegetables that are in season
- Making a grocery list before you go shopping

Shopping on a Budget

Create a Game Plan

1. See what you already have in your freezer, cabinets, and refrigerator
2. Plan your meals for the week
3. Make a list of recipes based on what you have, what your family likes, and what's on sale
4. Create a shopping list based upon your meal plan for the week

*Tip: Organize your list based upon section or food group for faster shopping

Shop Smart

- Buy in season produce; it will usually be less expensive and more flavorful!
- Try canned fruits and vegetables; in 100% juice or water or low sodium/no sodium added
- Stock up on frozen fruits and vegetables; it will usually be less expensive, will last longer, and easily accessible to add to meals and snacks!
- Beans, peas, and eggs are low-cost alternatives to meats as a source of protein
- Buy family-sized or value pack meat and freeze what you don't use right away
- Try canned seafood such as tuna, salmon, and sardines; they are low-cost and store well

Tips

- Total price / size = unit price; compare unit prices to see which items cost less
- Don't shop on an empty stomach! You will be more likely to add items that weren't on your list
- Read the sales flyers, use coupons, and check for store brands for savings

Don't forget about WIC benefits!

Check eligibility here: <https://www.fns.usda.gov/wic/frequently-asked-questions-about-wic>

Health Action Plan - Health Messaging

Fear appeal



Image from <https://thelostthegain.wordpress.com/2013/04/26/when-advertising-tries-and-fails/>

Gain framing

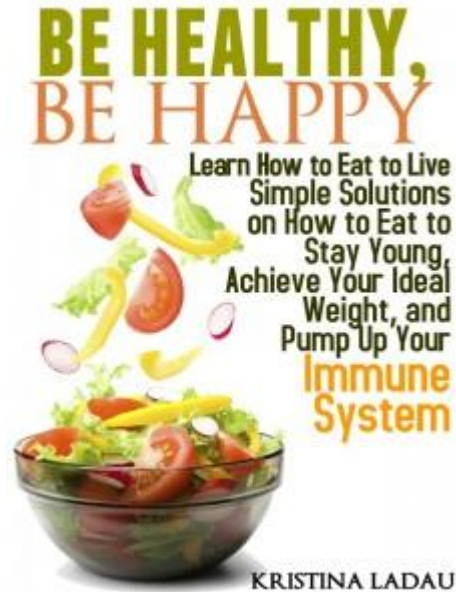


Image from <http://whatisnutritiontips.com/advertising/>

Health Action Plan - Health Messaging

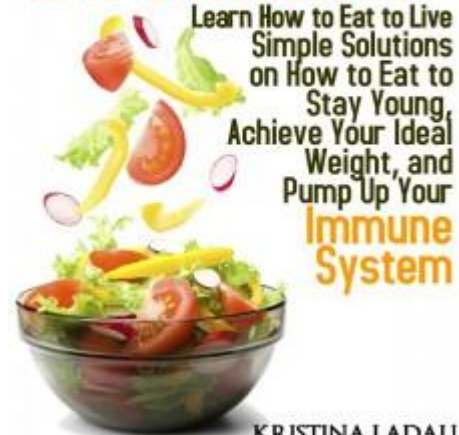
Fear appeal



Image from <https://thelostthegain.wordpress.com/2013/04/26/when-advertising-tries-and-fails/>

Gain framing

**BE HEALTHY,
BE HAPPY**



Health Action Plan - Health Messaging

- Fear appeals do not work well for nutritional messaging
 - Should not be used for children
 - Can cause panic that can potentially discourage their participation in healthy behaviors. ⁶
- It can be considered a cognitive overload, meaning that it is simply a lot for an individual to handle and can affect the way in which said message is remembered by the individual. ⁶

WHICH HEALTH MESSAGES WORK?
EXPERTS PREFER NEGATIVE ONES BUT
THE PUBLIC FOLLOWS POSITIVE MESSAGES.



© WANSINK & POPE (NUTRITION REVIEWS, 2018)

Image from <https://nutrition.org/nutrition-messaging-right/>

Impact of Intervention

- Surveys
 - Physical exercise outside of Family Gym, etc.
- End of Semester Survey
 - How frequently did you come?
 - What is your favorite part of the program?
 - What can be improved upon?
- Informal consultation - Grace and Kevin



Image from <https://www.eventbrite.co.uk/blog/post-event-survey-ds00/>

Sustaining Intervention

- Attendance logs
- Rewards System
- Coordinator's opinions:
 - Advertising
 - Keep track of group games/health themes

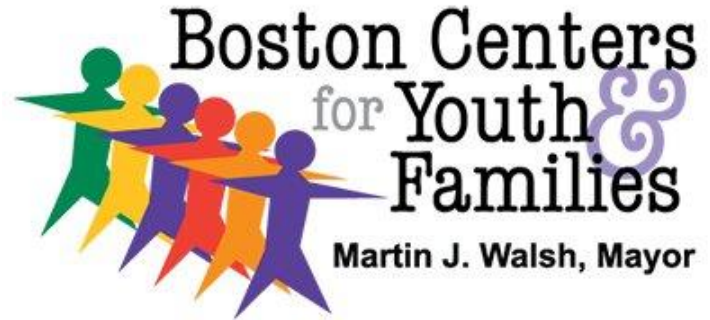
Week	Families	Kids
10/5/19	0	0
10/12/19	3	8
10/19/19	1	4
10/26/19	2	5
11/2/19	6	12
11/9/19	4	7
11/16/19	4	9
11/23/19	9	15



Attendance record for Family Gym Dorchester (left), contributed by Site Supervisor Grace. Attendance was rewarded by raffle prizes (right) at the end of the semester.

Conclusion

- Family Gym promotes weekly physical activity and educational planning for children ages 3-8 and their families.
- Family Gym Dorchester was established due to high obesity rates, high crime rates, lack of spaces for physical activity, and food/transportation deserts in this area.
- Obesity is a complex issue that requires careful attention and specific action plans.
- We hope to pass this presentation, as well as all the data we collected, along to next year's volunteers to ease the transition of power.



References

1. Chesto J. Boston has one of the most diverse neighborhoods in the country. *Boston Business Journal*. November 19, 2012.
2. Dorchester ranked the #1 most diverse neighborhood in Massachusetts. *The Dorchester Post*. March 17, 2018.
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5. Banks J, Williams J, Cumberlidge T, Cimonetti T, Sharp DJ, Shield JPH. Is healthy eating for obese children necessarily more costly for families. *Br J Gen Pract*. 62(594):e1-e5. DOI: <https://doi.org/10.3399/bjgp12X616300>.
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