

Inter-professional Collaboration to Meet the Needs of an Underserved Charter School as a School Based Childhood Obesity Intervention

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Objectives

- Upon completion of this session, the participant will be able to:
 - identify those at risk for childhood obesity.
 - recognize potential long term sequelae of childhood obesity.
 - understand the importance of community based inter-professional partnerships.

Background

- 2/3 of US overweight or obese
- Childhood obesity increases morbidity and mortality
- Psychological impact
- Cost

Guidelines

Ages 9 to 13: Daily guidelines for girls

Calories	1,400-2,200, depending on growth and activity level
Protein	4-6 ounces
Fruits	1.5-2 cups
Vegetables	1.5-3 cups
Grains	5-7 ounces
Dairy	2.5-3 cups

Ages 9 to 13: Daily guidelines for boys

Calories	1,600-2,600, depending on growth and activity level
Protein	5-6.5 ounces
Fruits	1.5-2 cups
Vegetables	2-3.5 cups
Grains	5-9 ounces
Dairy	3 cups

NJ Statistics

- 14.2% of adolescents in New Jersey were overweight ($\geq 85^{\text{th}}$ and $< 95^{\text{th}}$ percentiles for BMI by age and sex)
- 10.3% were obese ($\geq 95^{\text{th}}$ percentile BMI by age and sex,)
- Only 21.3% were physically active for a total of at least 60 minutes per day
- 18.3% did not participate in at least 60 minutes of physical activity on any day
- CDC, 2012. <http://www.cdc.gov/obesity/stateprograms/fundedstates/pdf/New-Jersey-State-Profile.pdf>

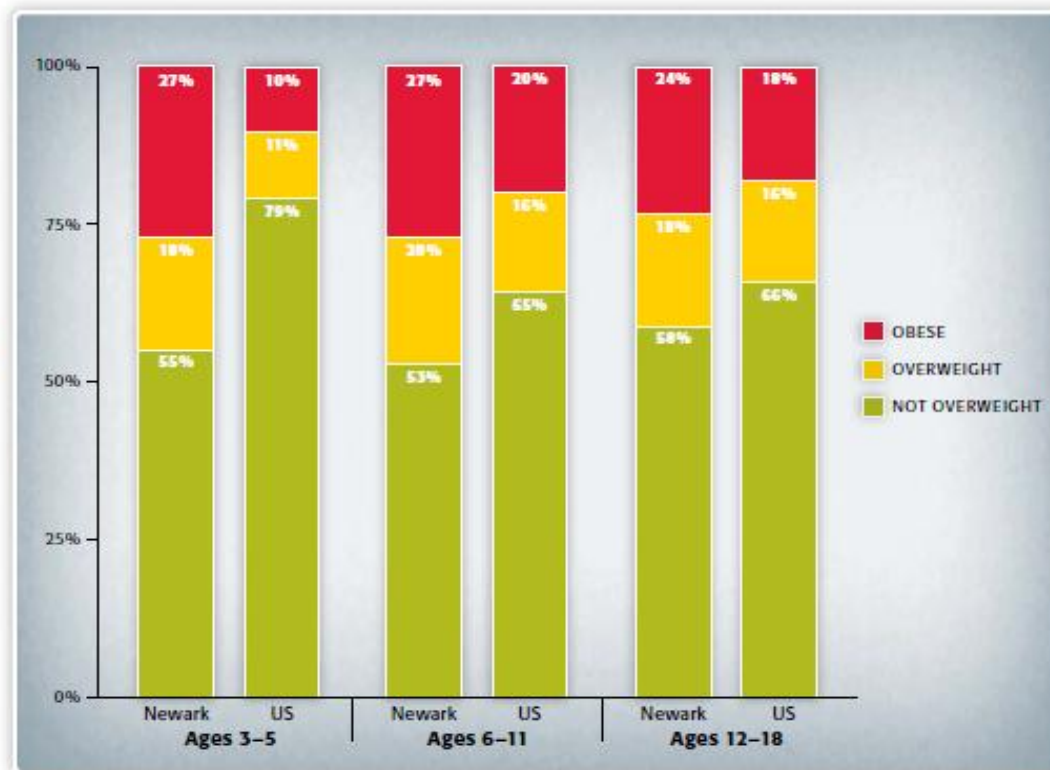
Statistics

How many children age 10-17 years are currently overweight or obese, based on Body Mass Index (BMI) for age? (details)					
		Underweight (less than 5th percentile)	Healthy weight (5th to 84th percentile)	Overweight or obese (85th percentile or above)	Total %
New Jersey	%	6.9	68.4	24.7	100.0
	C.I.	(4.5 - 9.3)	(63.9 - 72.9)	(20.5 - 28.9)	
	n	53	580	194	
	Pop. Est.	61,318	609,172	219,666	
Nationwide	%	5.8	62.9	31.3	100.0
	C.I.	(5.2 - 6.3)	(61.8 - 63.9)	(30.3 - 32.4)	
	n	2,503	28,573	12,788	
	Pop. Est.	1,832,666	19,938,355	9,935,162	
C.I. = 95% Confidence Interval. Percentages are weighted to population characteristics. n = Cell size. Use caution in interpreting Cell sizes less than 50.					

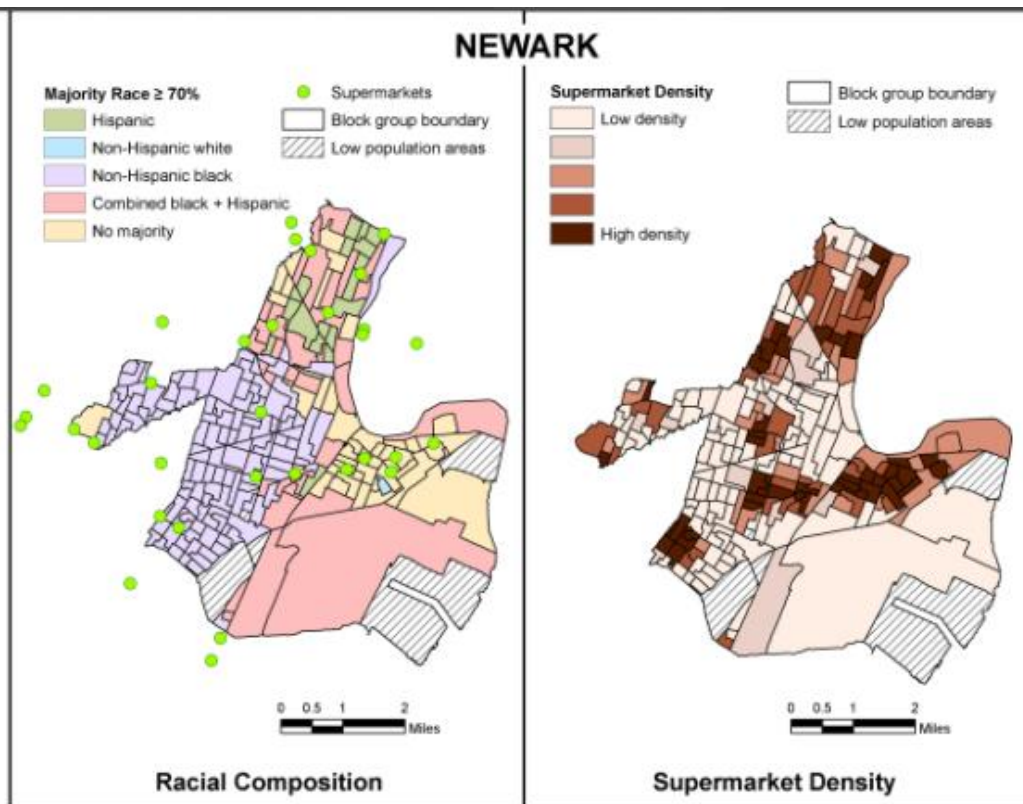
Newark, NJ Statistics

Childhood weight status by age: Newark public schools vs. US

- Compared to the national data, a higher percentage of Newark public school children in all age categories are overweight or obese.
- The largest differences between Newark public school children and national estimates are seen among the youngest children (45% are overweight or obese in Newark vs. 21% nationally), followed by children in the middle age group (47% are overweight or obese in Newark vs. 36% nationally).



NOTE: This chart presents data from Newark public schools (2008-2009), NOT survey data. National data (NHANES, 2007-2008) are based on 2-5 year-olds, while the Newark data are based on 3-5 year-olds. Bar totals may not equal 100% due to rounding.



CSHP Newark food outlet 2008 data (Updated August 2010)


 Center for State Health Policy
 Funding provided by the Robert Wood Johnson Foundation

On the left, majority racial composition of block groups is depicted in different colors. The green dots represent supermarket locations. Supermarket densities are shown on the right; the darker the shade of the block group, the higher the access to supermarkets.

GNCS

- Grades 5-8 in an urban, underserved area
- All students qualify for free or reduced cost lunch
- Majority of students are African American, small percentage of Latinos
- Maximum 50 students per grade



GNCS Mission and Vision

- **School Mission**
 - to be the best middle school in Newark.
- **Vision Statement**
 - we believe all students must possess ambitious academic and aspirational dreams to be successful in life.
 - We will enhance all students' feeling of self-worth, pride in themselves, their achievements, their communities and the kind of leaders they dream of becoming while encouraging them to be committed to being agents of change within their community and beyond.
 - To fulfill our mission, we maintain a highly talented staff to utilize a data-driven, academically rigorous curriculum within a culture of engagement and aspiration to ensure every student is prepared to realize their dreams.
 - By assuring our curriculum references the rich history and culture of the Newark community, in concert with imparting holistic strategies, we believe our students graduate inquisitive, empowered and inspired.

Students at GNCS



NJ STATE REGULATIONS

2.1 Wellness: All students will acquire health promotion concepts and skills to support a healthy, active lifestyle.

NUTRITION

By the end of grade 6	By the end of grade 6
<p>Content: Eating patterns are influenced by a variety of factors.</p> <p>2.1.6.B.1. Determine factors that influence food choices and eating patterns.</p> <p>2.1.6.B.2. Summarize the benefits and risks associated with nutritional choices, based on eating patterns.</p> <p>2.1.6.B.3. Create a daily balanced nutritional meal plan based on nutritional content, value, calories, and cost.</p> <p>2.1.6.B.4. Compare and contrast nutritional information on similar food products in order to make informed choices.</p>	<p>Content: Eating patterns are influenced by a variety of factors.</p> <p>2.1.8.B.1. Analyze how culture, health status, age, and eating environment influence personal eating patterns and recommend ways to provide nutritional balance.</p> <p>2.1.8.B.2. Identify and defend healthy ways for adolescents to lose, gain, or maintain weight.</p> <p>2.1.8.B.3. Design a weekly nutritional plan for families with different lifestyles, resources, special needs, and cultural backgrounds.</p> <p>2.1.8.B.4. Analyze the nutritional values of new products and supplements.</p>

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Interprofessional Collaboration



the process by which professionals reflect on and develop ways of practicing that provides an integrated and cohesive answer to the needs of the client/family/population... It involves continuous interaction and knowledge sharing between professionals, organized to solve or explore a variety of education and care issues all while seeking to optimize the patient's participation... (D'Amour & Oandasan).



Community Partnerships

- EFNEP

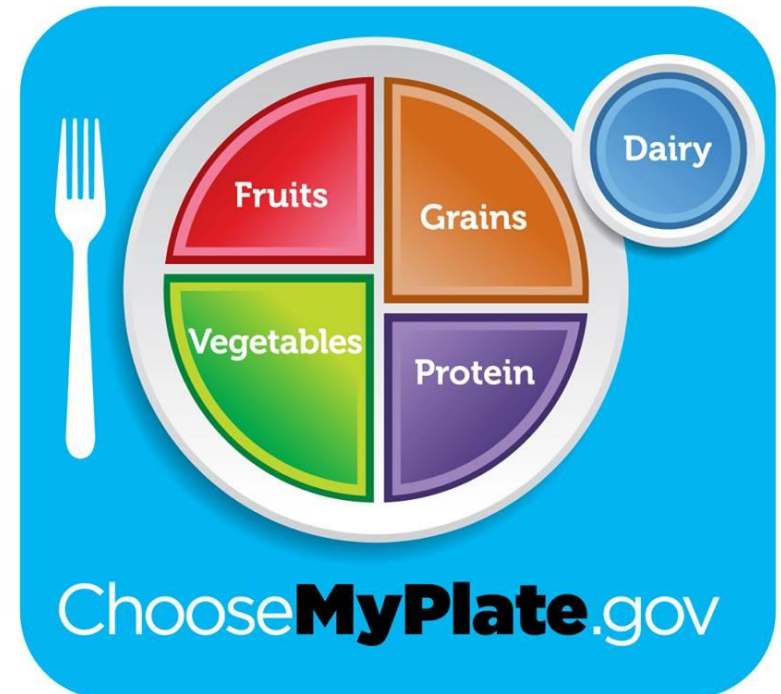


EFNEP Education Goals

- Improved diets and nutritional welfare for the total family;
- Increased knowledge of the essentials of human nutrition;
- Increased ability to select and buy food that satisfies nutritional needs;
- Improved practices in food production, preparation, storage, safety and sanitation; and, increased ability to manage food budgets and related resources such as food stamps.

Sample curricula

- Interactive games-
role playing, creating
a song
- Creating healthy
snacks with fruit or
yogurt shake
- Easy recipes for
children and families
to make at home



Community Partnerships

- Whole Foods Field trip
- **CORE VALUE - EDUCATION**
- **We Promote the Health of Our Stakeholders Through Healthy Eating Education –**



We Promote the Health of Our Stakeholders Through Healthy Eating Education



- Healthy eating is a basic foundation for optimum health and well-being.
- By providing healthy eating education we inspire and empower our stakeholders to make the best health-supportive, delicious food choices to maximize personal health and vitality.

Purpose of Nutritional Program

- To Examine the impact of health behavior choices of 5th grade students after a 6 week nutrition educational program
- Specific Aims
 - Describe students nutritional habits
 - Examine the influence of nutritional education on student's BMI
 - Describe students' favorability of the nutritional program

Method

- Subject Population
 - 5th grade students at Greater Newark Charter School
 - The inclusion criterion: enrollment in the Charter School.
 - No student was deemed ineligible based on race or ethnicity.
 - Only those students who attended all nutritional classes were included in the analysis.
- Research Design
 - Quantitative exploratory pretest/posttest
 - The nutrition program was conducted in a classroom room once a week for six weeks.

Measures

- Demographic information
 - age, gender, race, BMI
- A nutritional survey
 - Example questions
 - Today did you....
 - During a school week how many days do you usually...
 - What fast food do you eat?
 - What fruits and vegetables do you eat?
 - What do you usually drink?

Procedure

- Meeting with School Principle and Nurse
- Exempt IRB approval
- Parental Consent and Adolescent Assent
- Data was collected at four different time points:
 - Six weeks prior to the nutritional program starting
 - The beginning of the nutritional program
 - The end of the nutritional program
 - Six weeks later

Data Analysis

- Descriptive statistics were used to characterize the demographics of the sample.
- Outcome measures were studied with a profile analysis to analyze how responses change over time

Results

- 38 students returned signed parental consent and adolescents assent form.
- 37 students (97% response rate) participated in all nutritional educational classes and data collection.
- Demographics
 - 19 girls (51%) and 18 boys (49%).
 - The majority of students were African American (n = 33, 90%)
 - Average age: 11 (SD = 0.05).

Results- BMI's

BMI's and Post- BMI's based on Gender (N = 37)

Variable	Mean (\pm SD)
Boys (n = 18)	
BMI	20.6 (\pm 3.5)
Post-BMI	21.8 (\pm 4.1)
Girls (n = 19)	
BMI	22 (\pm 5.7)
Post- BMI	22.6 (\pm 5.8)

Results: Nutritional Habits of the Students

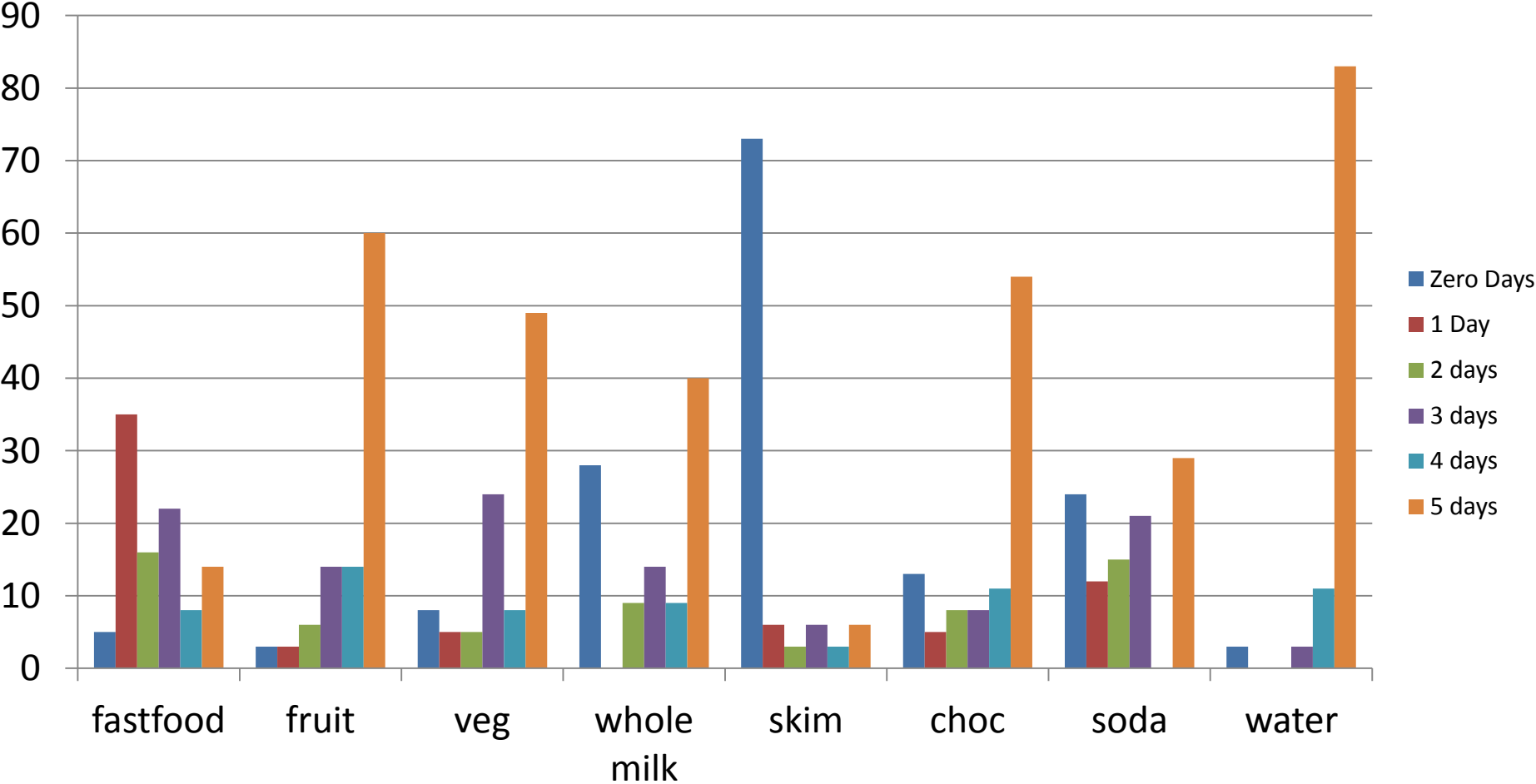
- A majority of students reported that at least once in the five-day school week they consumed
 - Fruit and vegetable
 - Fast food
 - Milk product (whole, skim, or chocolate milk)
 - Water

Percentage of students who ate Breakfast, Lunch, and a Snack during 5-day school week Pre- Nutritional Program (N =37)

	Time 1						Time 2					
	0	1	2	3	4	5	0	1	2	3	4	5
Break	5	5	3	18	10	58	3	5	3	19	11	60
Lunch	0	3	3	10	10	74	0	0	3	6	16	75
Snack	0	3	6	14	8	70	0	0	6	9	6	80

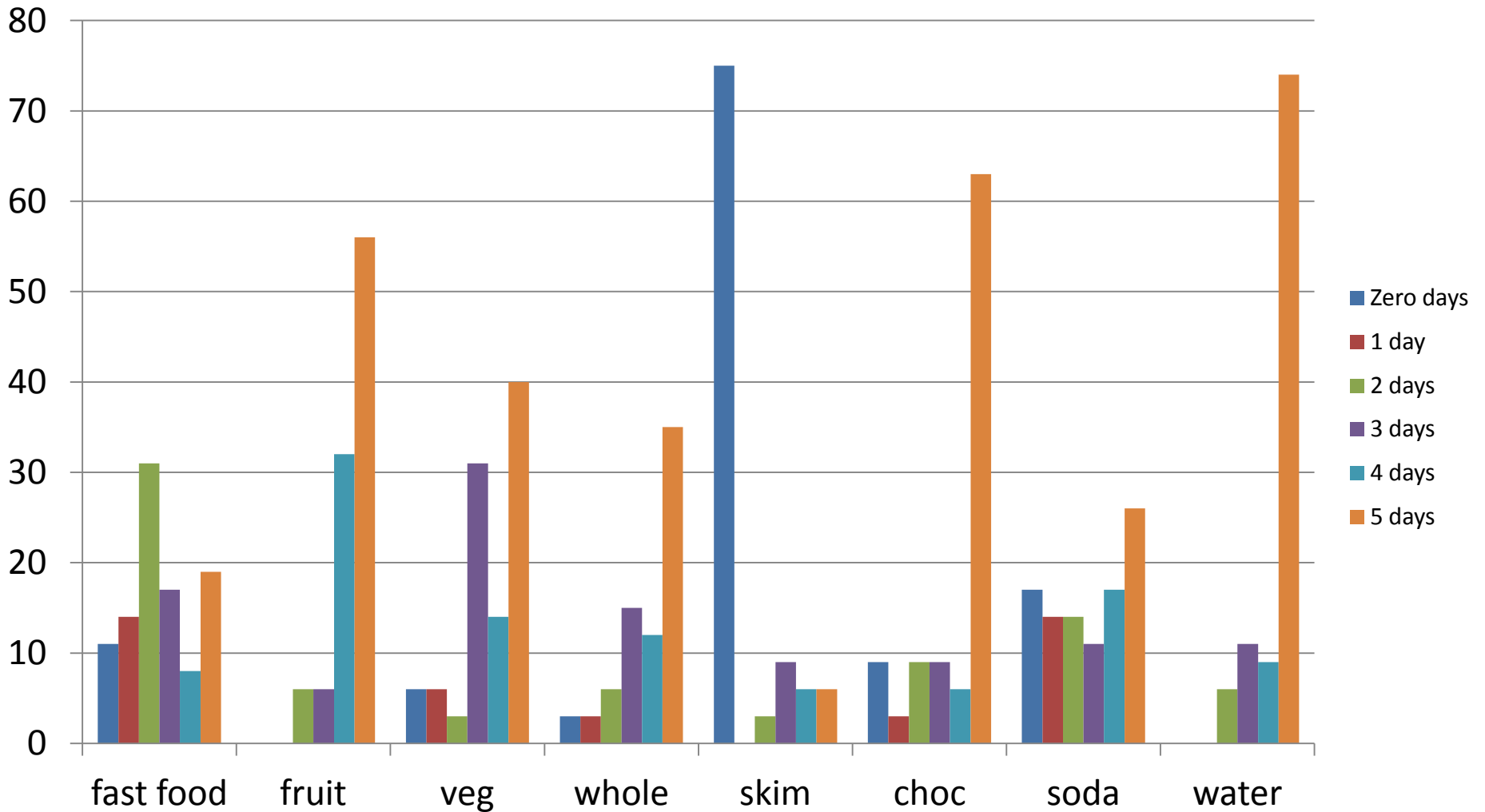
Percentage of Students who ate Fast Food, Fruits, Vegetables and Drank Milk Products, Soda, and Water Pre-Nutritional Program

Time 1



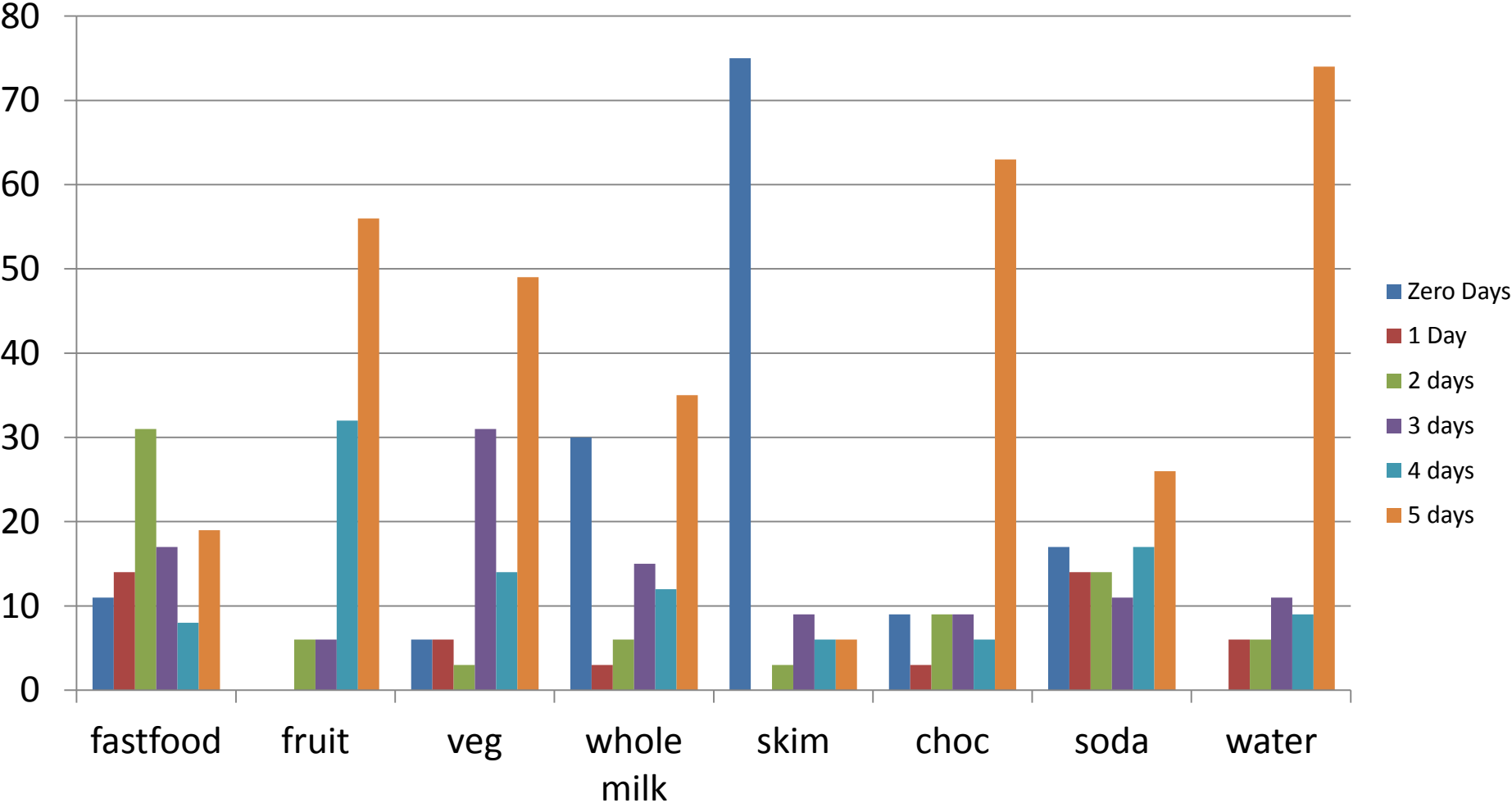
Percentage of Students who ate Fast Food, Fruits, Vegetables and Drank Milk Products, Soda, and Water Pre-Nutritional Program

Time 2



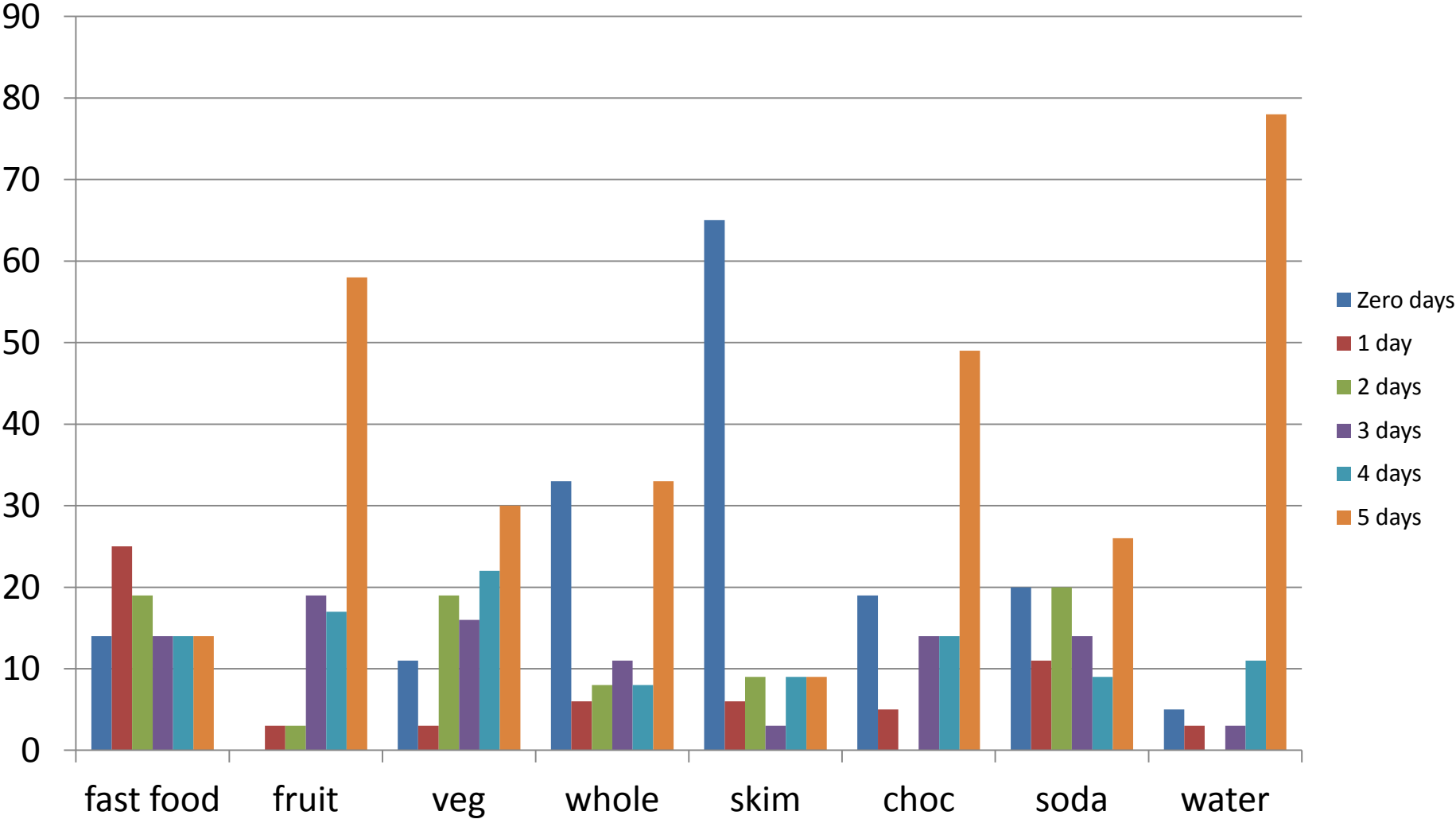
Percentage of Students who ate Fast Food, Fruits, Vegetables and Drank Milk Products, Soda, and Water Pre-Nutritional Program

Time 3



Percentage of Students who ate Fast Food, Fruits, Vegetables and Drank Milk Products, Soda, and Water Pre-Nutritional Program

Time 4



Results Continued

- The most frequently consumed fast foods
 - McDonalds (70%)
 - Dunkin Donuts (64%)
- The most popular fruits
 - Apples (89%)
 - Oranges (86%)
 - Grapes (83%)
 - Bananas (72%)
- The most common vegetables
 - Corn (89%)
 - Broccoli (84%)
 - Potatoes (80%)
 - Peas (75%)

Results Continued

- Following the nutritional program
 - Time 3: 70% of students stated that they liked the program.
 - Time 4: 65% of the students reported liking the program.

Limitations

- Limitations
 - Sample Size
 - Use of Convenience Sample
 - The length of the program

Lessons Learned

- Stakeholder buy in is essential for program success.
- Family education is needed to address childhood obesity.
- Utilizing community educators is worthwhile.
- There may be opportunity for program enhancement by nursing students or faculty.

Future Implications

- Program expansion for all grade levels within the school community.
- Care giver education and opportunity for engagement is a next step.

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