

Capstone: Elementary School Teachers' Perceptions of Classroom Nutrition Education and Cafeteria Food



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Project Overview

- How does Army Public Health supports our constantly changing community?
- Can improving nutrition on post influence obesity of military personnel and their beneficiaries?
- Are there data that could support the allocation of funding for corrective initiatives?



Objectives

1. Determine an age where obesity prevention/ intervention efforts should start.
2. Determine what nutrition initiatives are in place at Fort Riley and identify opportunities for improvement.
3. Conduct a survey on nutrition education and school cafeteria behaviors.
4. Make recommendations for interventions based on survey results.

Background

- Determine when obesity becomes a problem and when nutritional interventions should begin.
- Visit military and commercial dining facilities, child development centers, school cafeterias, and the commissary .
- Design courses of action to address obesity/nutrition in elementary schools and dining facilities.
- Present courses of action to hospital and health services commanders.
- Focus on elementary school interventions for proper nutrition and obesity prevention.
- Other courses of action will be pursued as phases of a comprehensive nutrition promotion initiative.

Introduction

- Seventeen percent of school-age children in the United States are obese (CDC).
 - The prevalence of obesity among children and adolescents has tripled since 1980 (NHANES).
 - Obesity is expected to continue to increase (CDC).
 - The prevalence of obesity/overweight has increased in 4-5 years-old but not in younger children
 - “efforts to prevent overweight, including encouragement of physical activity and improved diets, should begin in early childhood” (Ogden et al., 1997) .
- ➡ Pre-kindergarten and elementary age children were the focus for this project.

Introduction continued

- Obesity is assessed by body mass index (BMI).
- High BMI children frequently become obese adults
- Obesity leads to chronic conditions including:
 - type II diabetes mellitus
 - sleep apnea
 - respiratory problems
 - bone and joint problems
 - stroke
 - coronary heart disease
 - social and psychological problems
 - cancers (colon, breast, and endometrial)
 - gynecological problems (infertility and abnormal menses)

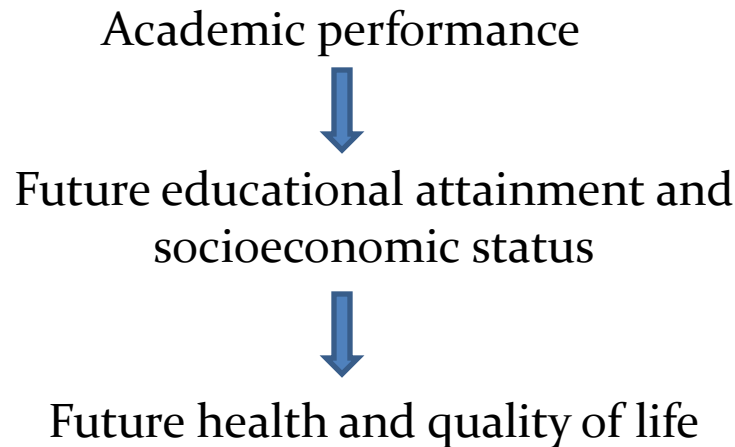
(CDC)

Introduction continued

- Reduced diet quality draws public health attention to the impact of diet on academic performance and future health of children.
- Researchers are looking at the impact of overall diet quality.
- Specific aspects of diet quality affect academic performance independent of gender or socioeconomic status.
- Fruit and vegetable consumption, and dietary fat intake are also important to academic performance in children

Introduction continued

- Undernourished children have decreased academic performance, attention, and attendance and increased health problems compared to well nourished children



- Negative nutrition decisions lead to lifelong health challenges.
- Establishing healthy nutritional habits in *childhood* is imperative for healthy development and educational achievement.

Introduction continued

- Kansas Department of Education (KDE) and Kansas Department of Health and Environment (KDHE) formed Kansas Coordinated School Health, to promote school health because healthy children make better students.
- KDE guidelines focus on nutrition, nutrition education, and physical activity: “Basic”, “Advanced”, and “Exemplary”.
- Used by administrators/menu planners to progress from a school that meets minimum requirements (basic) to a school that goes above and beyond at promoting a nutritious environment (exemplary).

Introduction continued

- Eating in child development centers (CDC) compared to elementary schools was different.
 - CDC children ate all food on their plates (eg: fruits, vegetables, and whole grain breads) vs. elementary school children who wasted approximately 60% of food.
 - 5- year olds in elementary school settings did not consume the same amount of nutrients even though both menus were based on the same criteria.



Introduction continued

- Menus were reviewed by dietitians,
 - Room for improvement was found in some facilities.
- Dietitians and public health professionals spoke with district menu planners/kitchen managers to determine challenges.
- USD 383 and 475 managers strive for the exemplary level but are limited by budget.

Introduction continued

A survey of teachers on nutrition education and lunchroom behaviors was conducted to provide background information on:

- 1) The importance of teaching nutrition to students
- 2) To correlate school lunches with what is taught
- 3) To determine if school food appeals to the children and is therefore eaten.



Methods



- Superintendents were contacted explaining the desire of Fort Riley Public Health to partner with the schools.
- Fort Riley Public Health professionals , school administrators and I discussed details for cooperation and conducting a survey.

Methods continued

- Dr. Sheryl Hodge and Dr. Tandalayo Kidd assisted in survey development.
- The survey (Axio Survey) was sent to elementary school teachers in USD 383 and 475 via school email with a link to the survey.
- Responses were anonymous and subjects had 3 weeks to complete the survey.

Methods continued

- For questions 2, 3, 4, and 10, point values of 1 (least important/least adequate) to 3 (most important/most adequate) were assigned to calculate mean and standard deviation.
- Questions 5, 6, and 8 requested perception/opinion. These data are presented as percentages of the total responses.

Methods continued

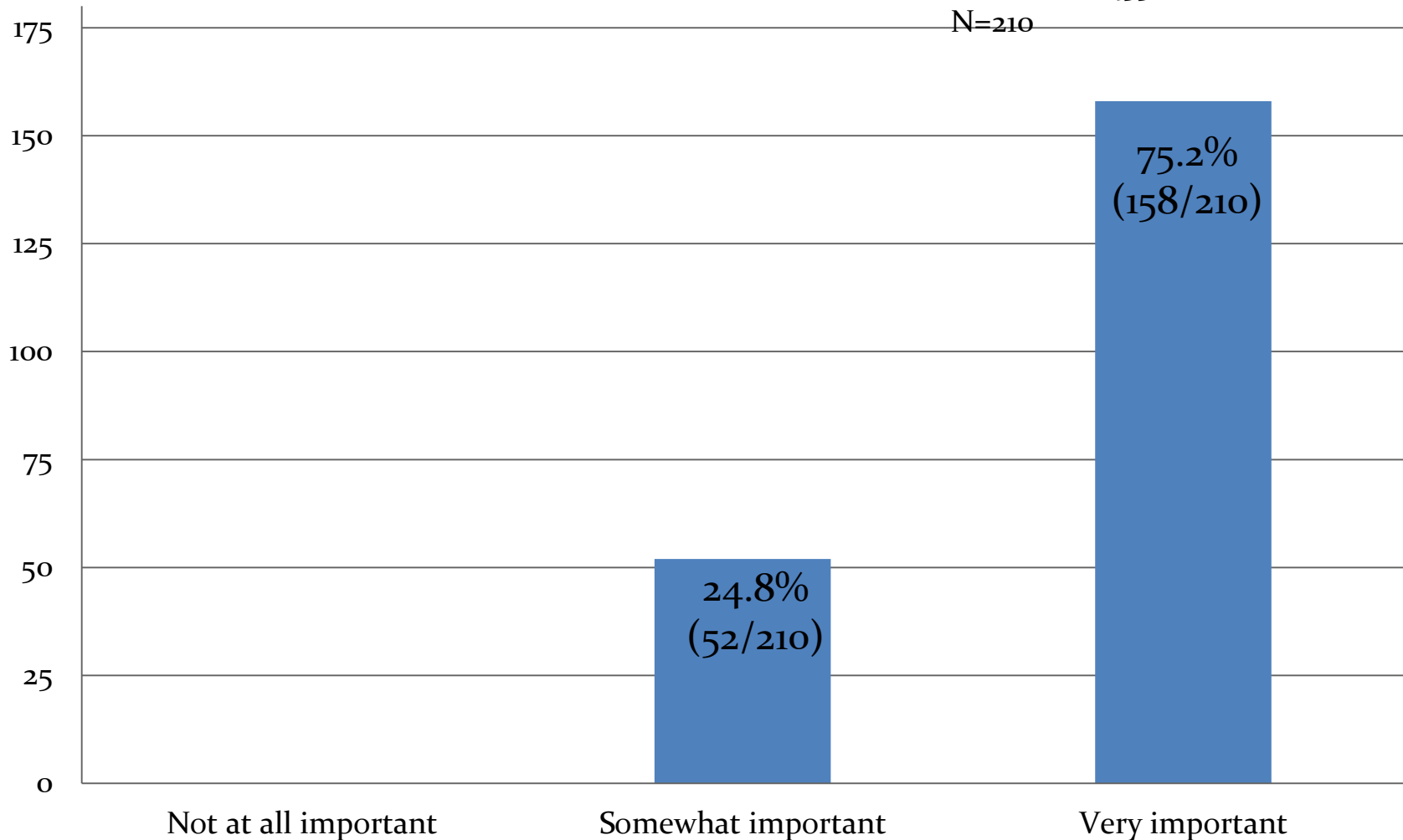
- Results were analyzed with excel and IBM® SPSS® (originally Statistical Package for the Social Sciences) software.
- Basic statistics were calculated and presented to menu planners, school administrators, public health professionals and others involved in this project.

Results

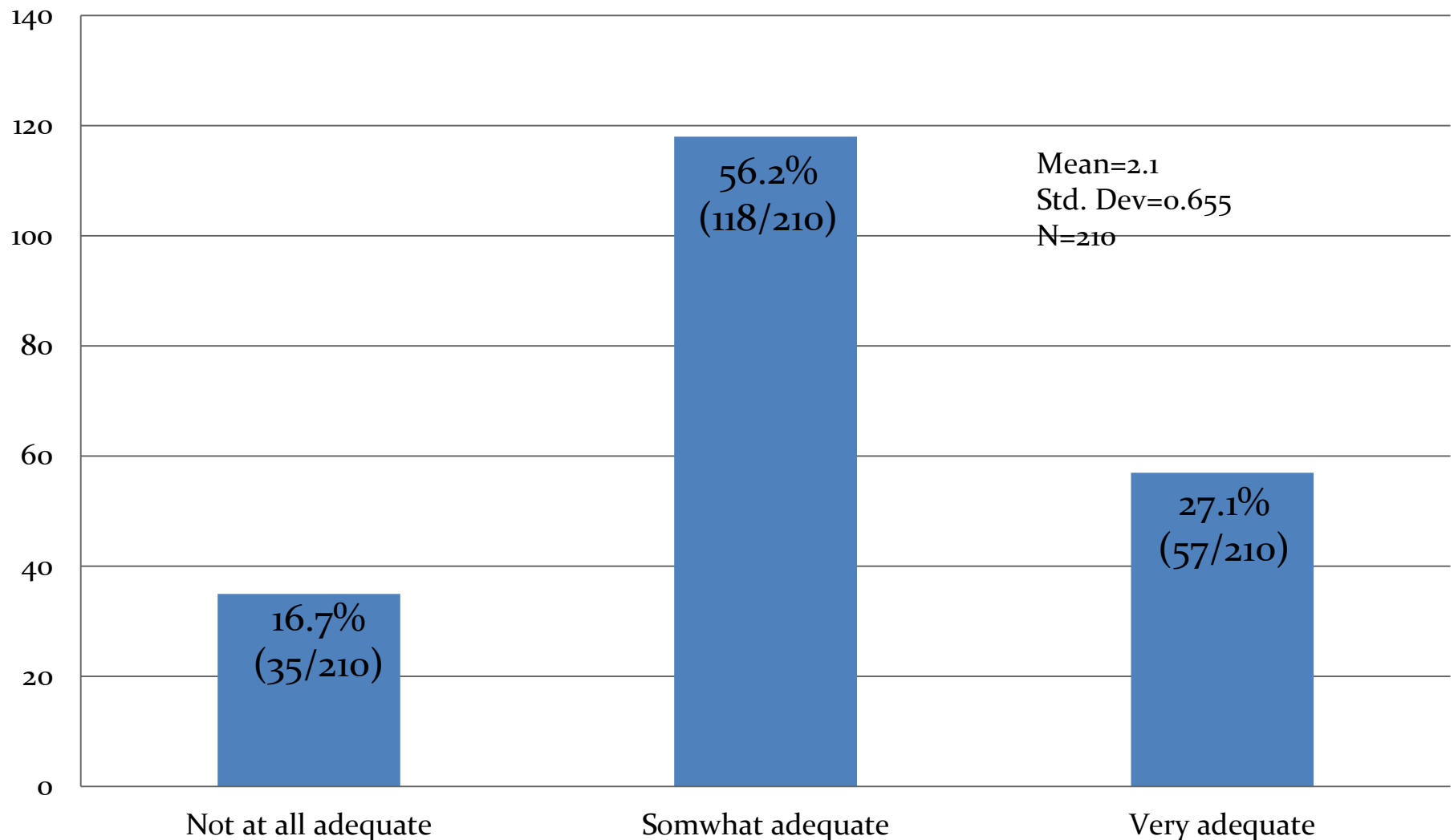
- There was a 57.95% response rate (215/371 elementary school teachers).
- 18/215 stated they were not teachers.
 - These 18 were included in the analysis because they frequently see school food and classroom education despite not having a classroom.
- Not all responded to each question, so analysis was based on the total number of respondents to that question only.

How important is it to teach nutrition in schools?

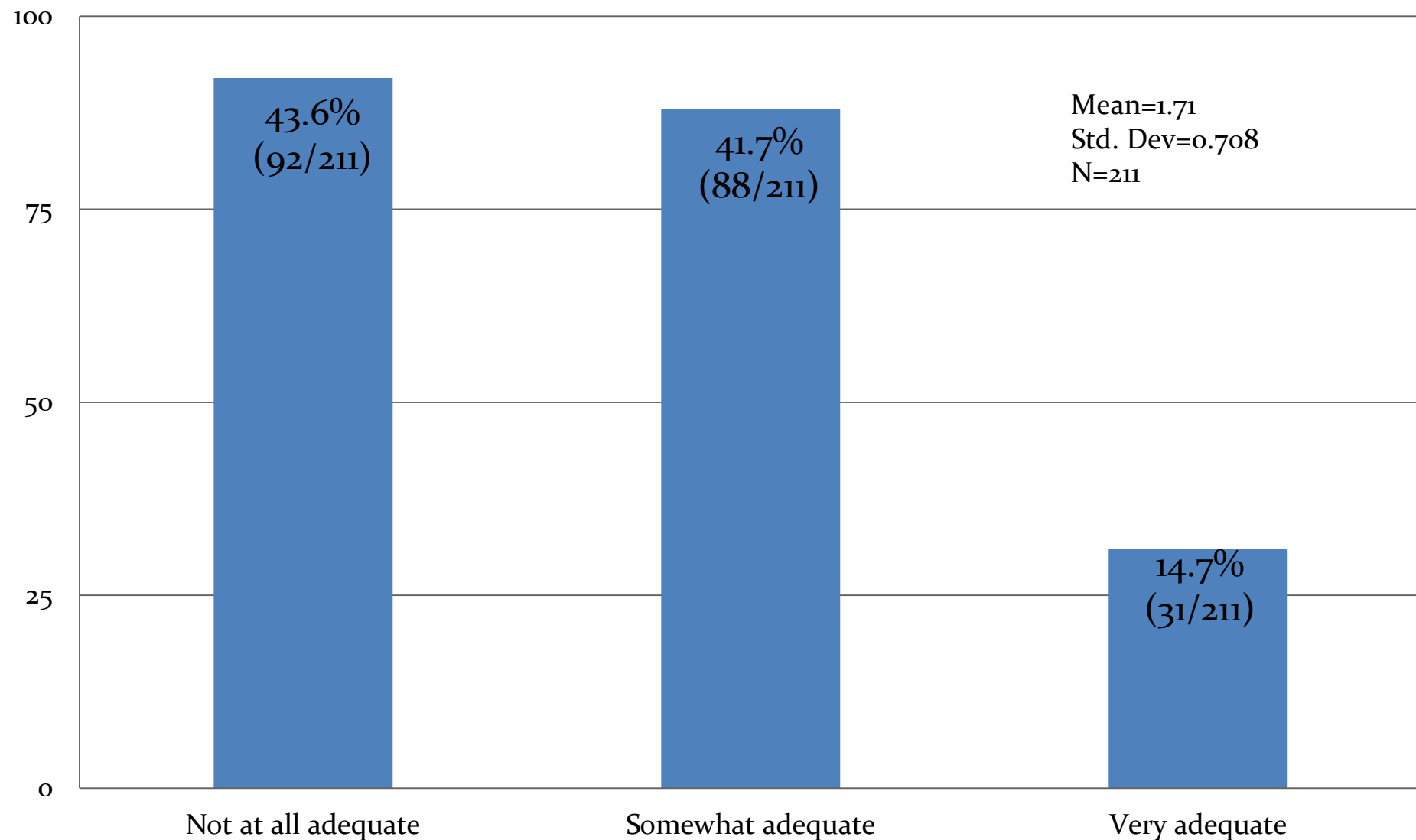
Mean=2.75
Std. Dev=0.433
N=210



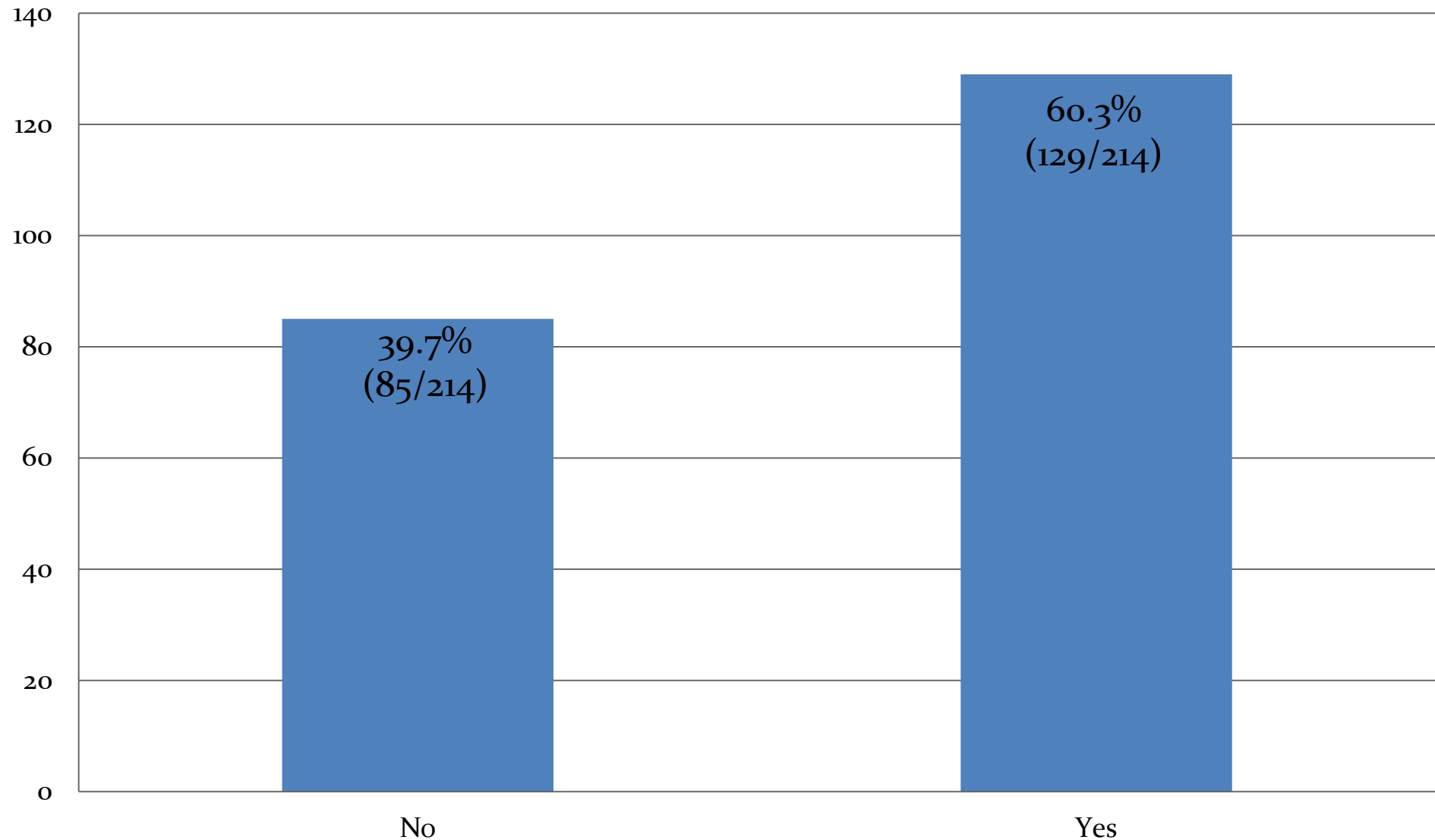
How adequate do you feel your training is for teaching nutrition?



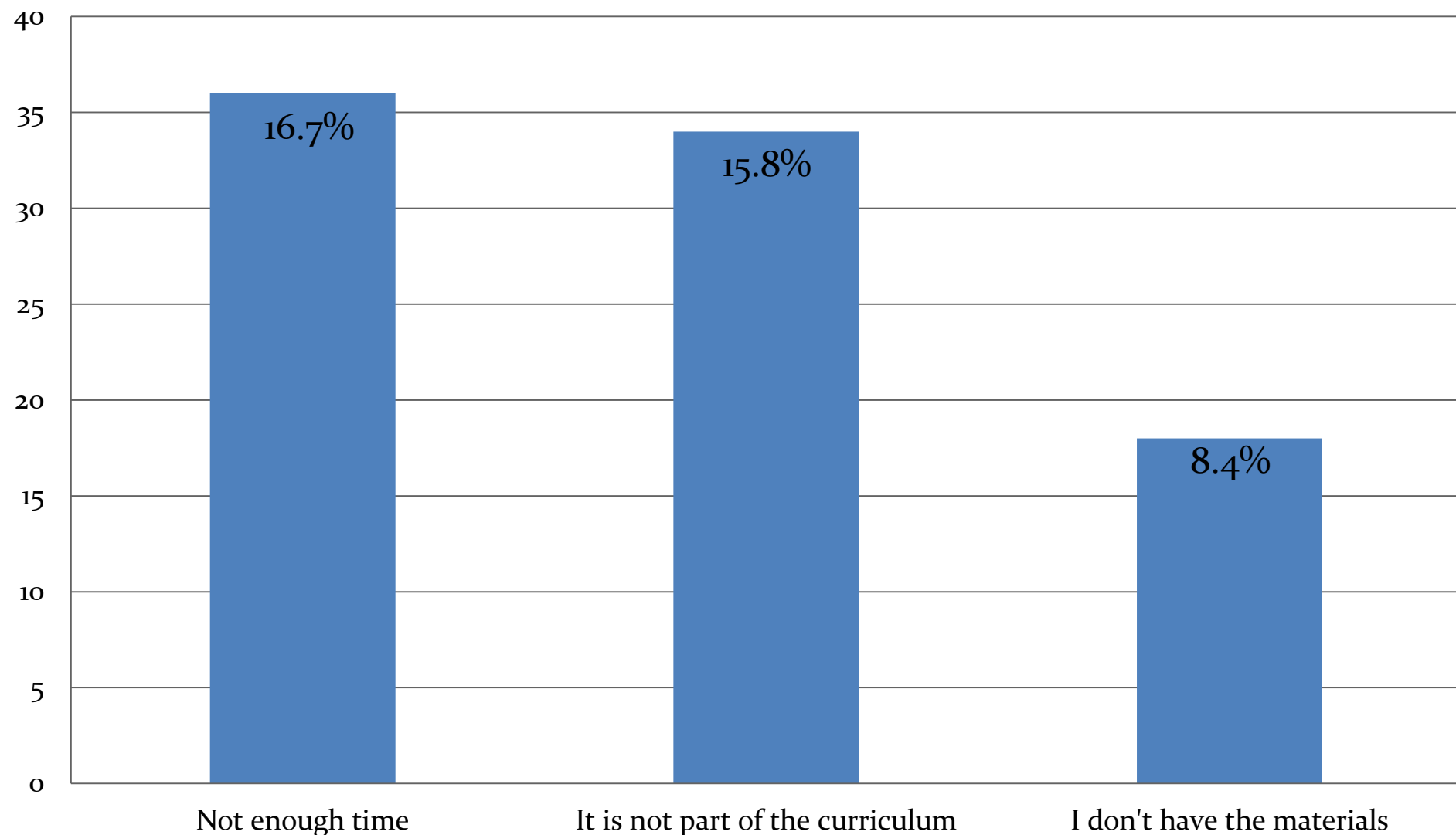
How adequate do you feel your resources are for teaching nutrition?



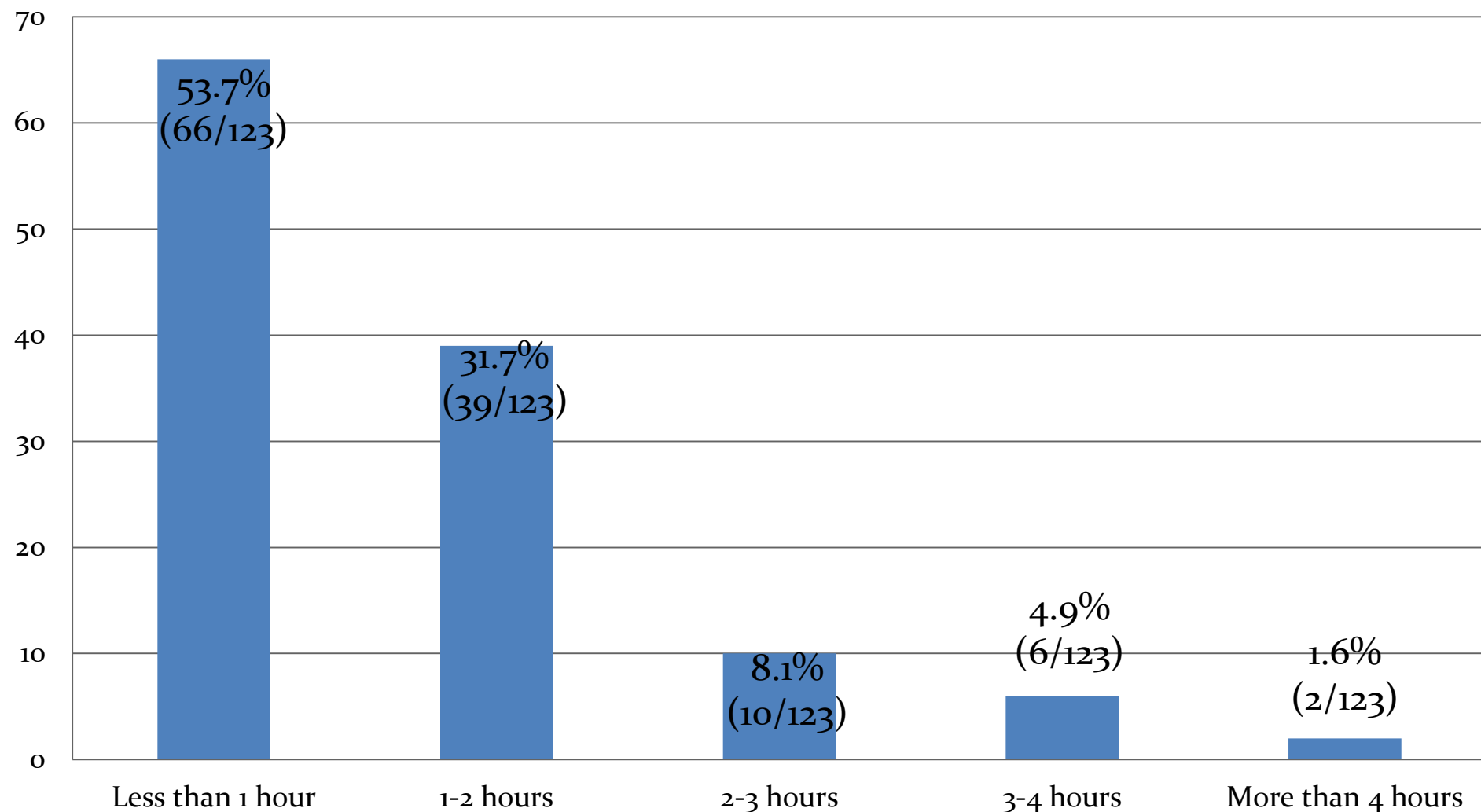
Do you teach nutrition in your classroom?



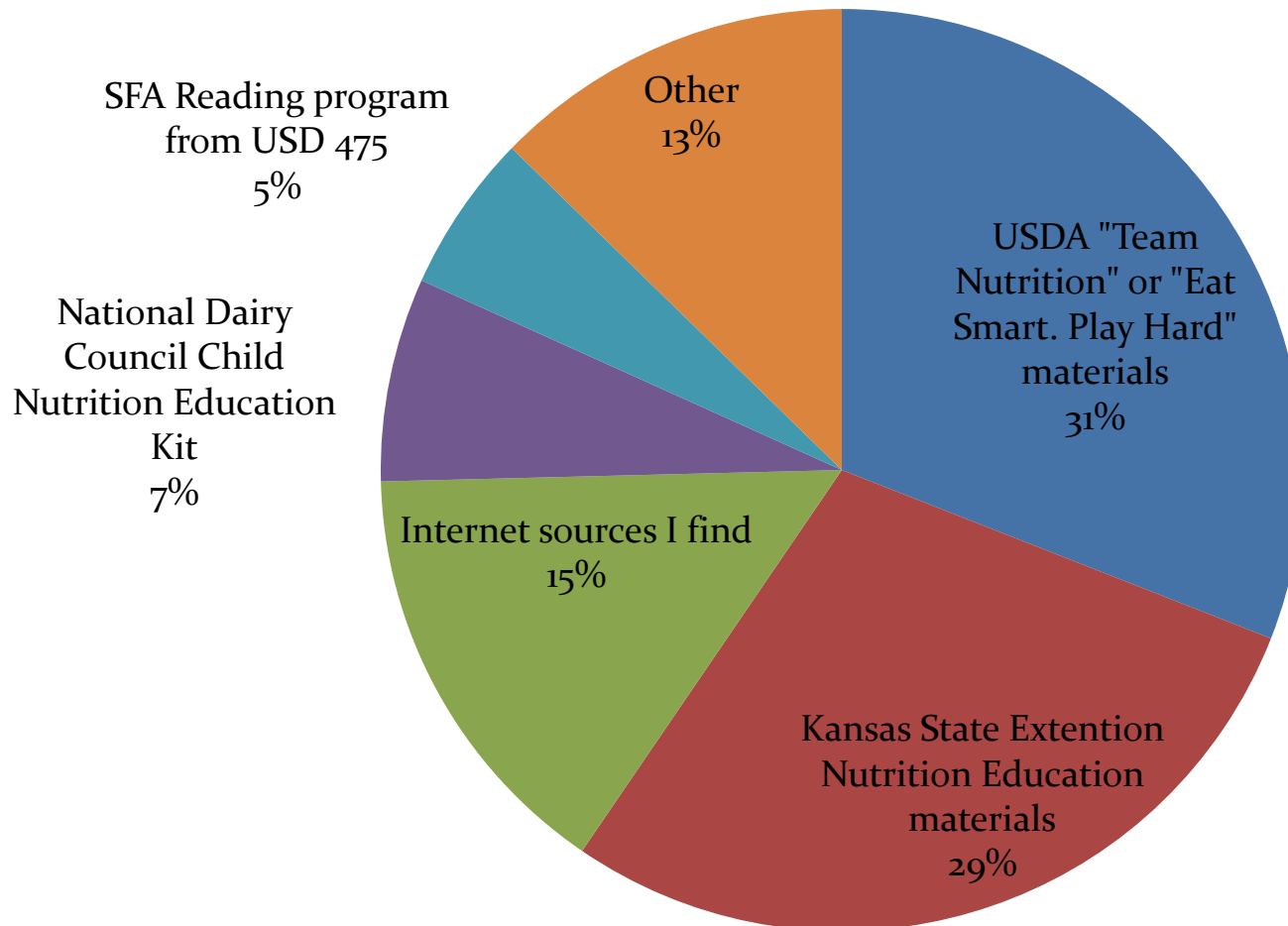
What is the primary reason that you do not teach nutrition in your classroom?



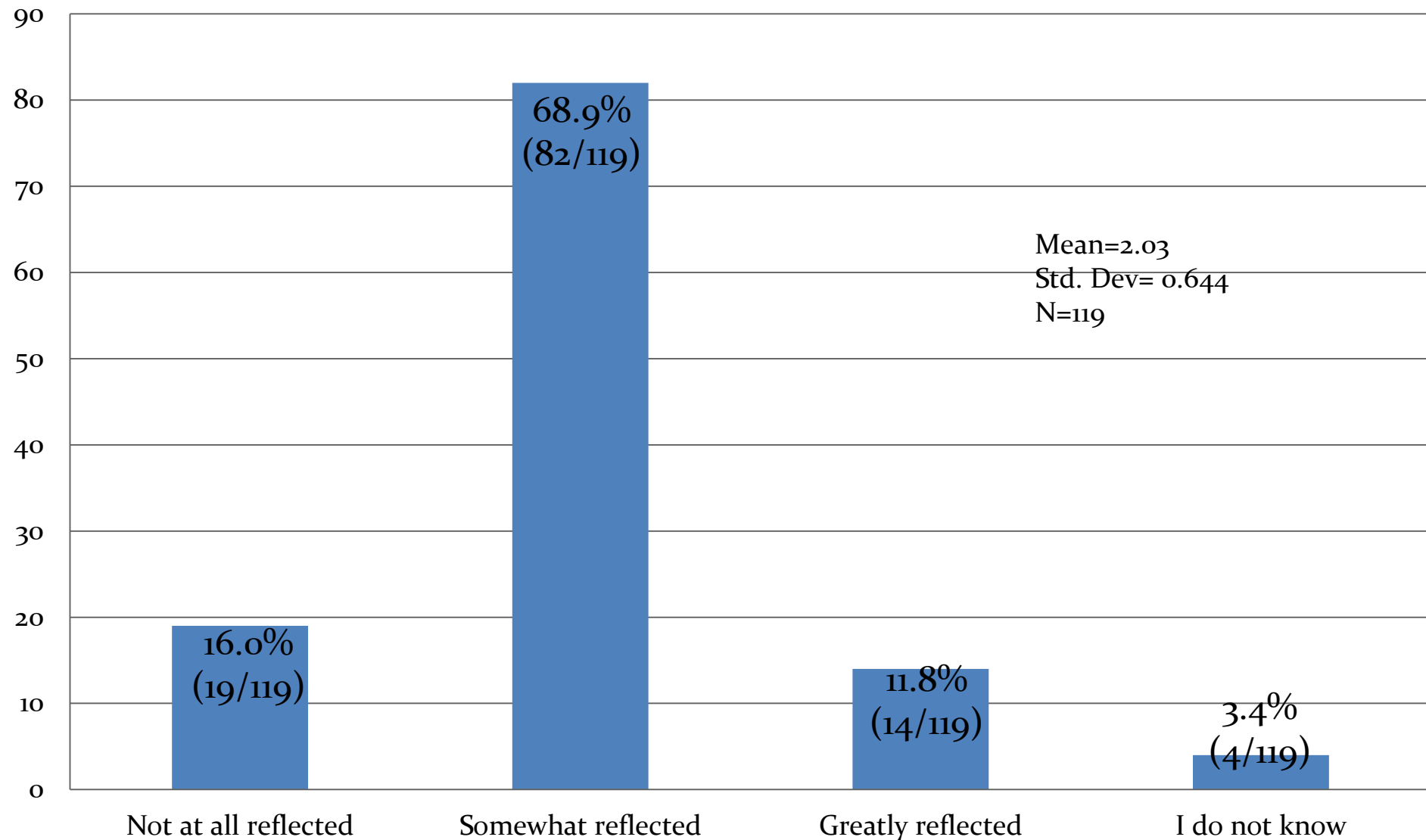
On average, how much time do you spend teaching nutrition in the classroom per month?



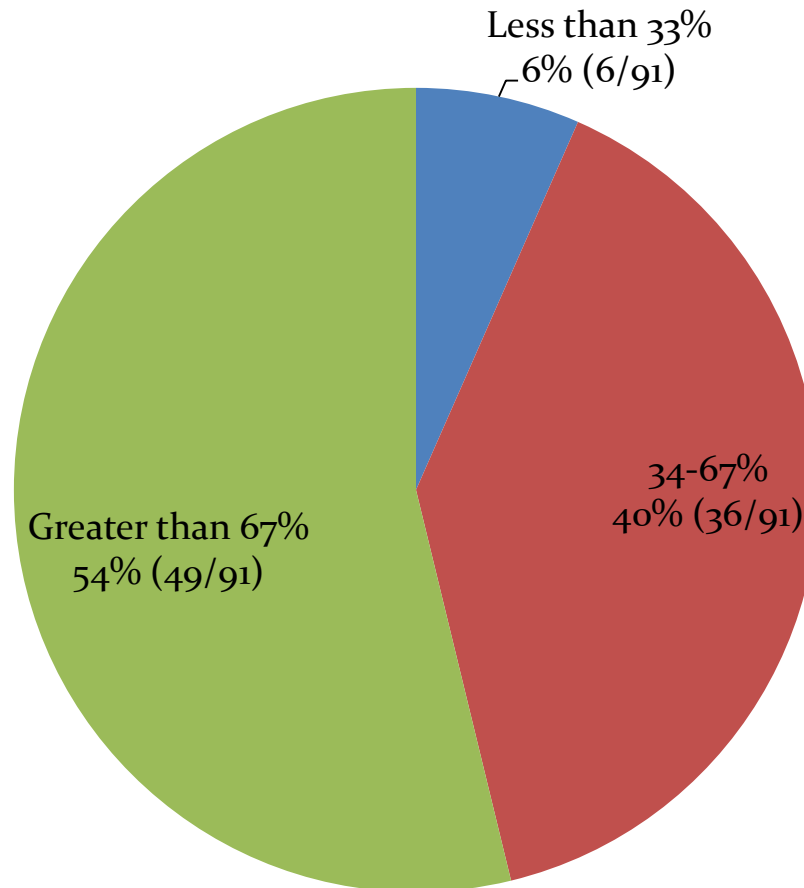
Which of the following materials do you use?



How well does the school cafeteria food reflect the nutrition concepts you teach in the classroom?



On average, what percentage of meals prepared by the school cafeteria food service is eaten by the students?

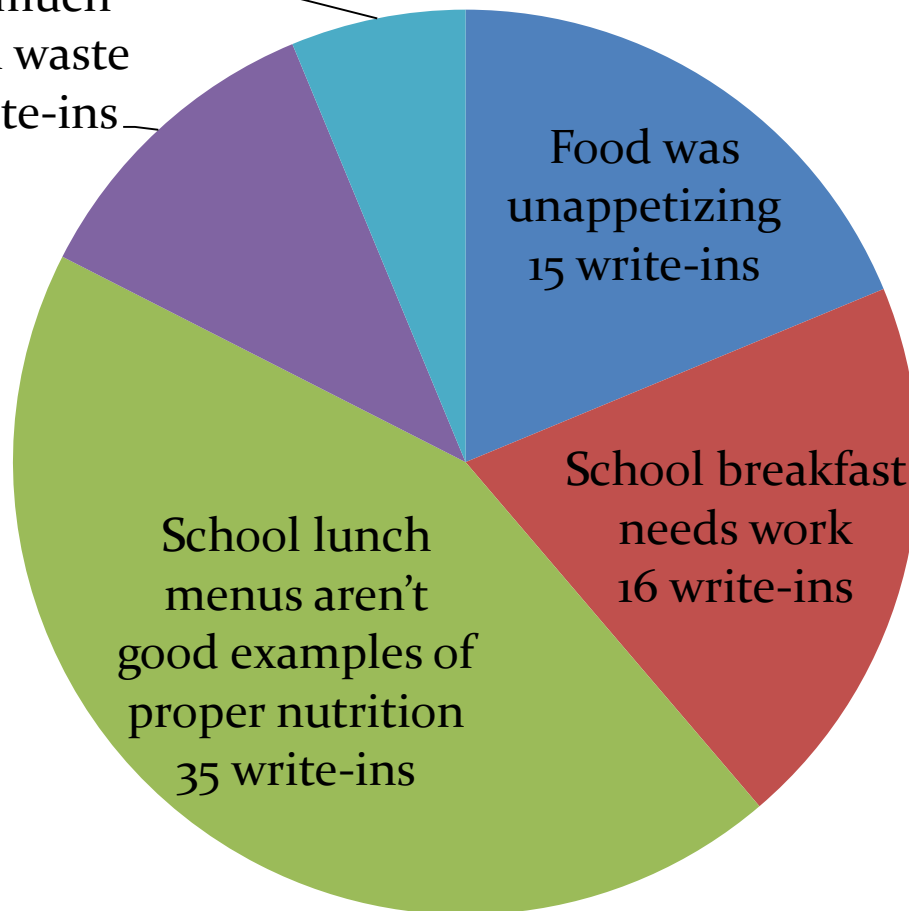


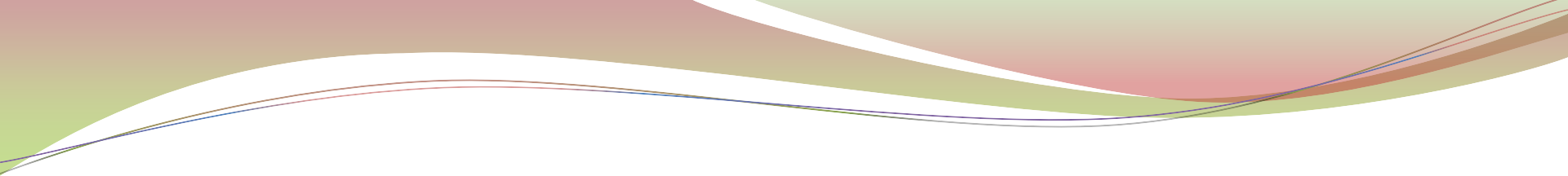
Elementary teacher write-in responses

Fresh Fruit
and Vegetable

Grants are
helpful
5 write--ins

Too much
lunch waste
9 write-ins





The results of the survey were used to guide Fort Riley Public Health officers, school teachers, and school administrators on how to promote healthy nutrition habits in children.

Data from the survey has been used to support the implementation of several ideas to promote these habits.

Discussion

- Response rate (57.95%) may reflect the level of concern teachers have for the topic and for their students.

An average response rate for 31 published studies of email administration of surveys for similar studies was 37%.

- Limitations: Teachers represent a single source of observation. Bias specific to this group may have influenced the survey.
 - Incorporation of school food service professionals/other groups in the survey could be fruitful.

Discussion continued

- Responses were not unanticipated but provide base line data.
- A majority of elementary school teachers believe teaching nutrition is very important, but many feel that their training and resources are inadequate.
 - Survey question 9 (source of nutrition resources) pointed teachers to some excellent nutrition resources.
- Ideally school wellness committees should work together to set goals for classroom nutrition education.

Discussion continued

- Lambert and Carr (2006) conducted a survey of elementary school foodservice directors, teachers, and principals in Arkansas and Idaho.
 - The survey was sent to 70 elementary schools randomly selected from various school districts in each state.

Discussion continued

- 93% of teachers thought that nutrition education should be incorporated into the elementary students' curriculum. Only 66% of teachers provided one to two hours of nutrition education per school *year*.
- 85.4% of the elementary school teachers in USD 383 and USD 475 taught nutrition less than 1-2 hours per month.
- Despite teachers' belief in the importance of teaching nutrition, it is not a priority for classroom education time.

Discussion continued

- Top resources used by teachers in the Lambert and Carr study were the National Dairy Council education materials (55%), the school lunch menu (38%), and health texts (34%; specific texts used were not listed).
- In the current survey, the most frequently mentioned educational materials were USDA “Team Nutrition” or “Eat Smart. Play Hard.” materials. These materials were not specifically asked about in the Lambert and Carr study.



Discussion continued

- 73% of teachers felt confident in providing nutrition education to their students (Lambert and Carr, 2006).
- 63% agreed that they had adequate training to provide this nutrition education (Lambert & Carr, 2006).
- 27.1% of teachers felt their training was “very adequate” for teaching nutrition.

Discussion continued

- The Lambert and Carr survey also found that 56% of teachers believed that menu items served in the school lunch program reinforced nutrition education provided in the classroom to the elementary students (Lambert & Carr, 2006).
- This was in contrast to the results above where only 14/119 respondents (11.8%) believed that school cafeteria food greatly reflected the nutrition concepts taught in the classroom.

Discussion continued

- Both surveys had comments concerning the presence of high starch, sugar, and pre-cooked foods with preservatives in school lunches which do not support nutrition education.
- Lambert and Carr teacher survey closely mirrors the survey distributed in USD 383 and USD 475. There would be value in conducting this survey with all stakeholders in nutrition education.
- Cooperation of all of these stakeholders in establishing a standard for nutrition education is needed for successful and accepted intervention.

Discussion continued

- The collaboration of public health professionals and registered dietitians from Fort Riley are a great resource for the local school districts that are financially challenged but who want to work toward reaching the “Exemplary” level of the Kansas health guidelines.

Discussion continued

Based on the literature review results, elementary school meal options, and survey results, several ideas have been suggested to the schools.

1. Grant writing to fund more fresh fruits and vegetables in the school diet
2. Use IACH dietitians part time to aid the USD 475 menu planner.
3. Using child/teacher/kitchen managers' feedback to plan meals that meet nutrition requirements yet taste good and are eaten by the children.
4. Include seasonal variations in menu planning
5. Discuss with superintendents the long term benefits of programs like "Farm to School" for long term acquisition of fresh fruits and vegetables.

Discussion continued

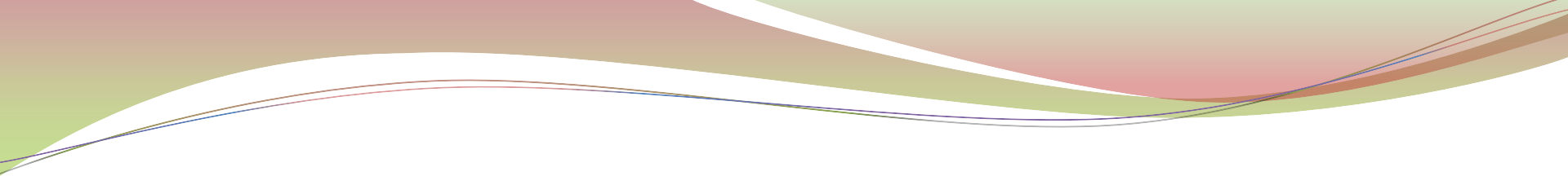
- Addressing childhood nutrition and obesity is an ongoing issue.
- The reversal of childhood obesity will require a long-term and coordinated approach.
- Solid classroom nutrition education can be augmented by delicious/nutritious meals in the cafeterias and helping children acquire healthy eating habits.

Discussion continued

- In this study, we obtained background information on perceptions of teachers and met with superintendents and menu planners to hear their concerns.
- These results have provided foundational data that is being used for ongoing initiatives.

Discussion continued

- Currently. . .
 - Irwin Army Community Hospital dietitians are meeting with the USD 475 menu planner once a week to help in planning more nutritious and appealing meals.
 - We have also suggested that both school districts apply for Fresh Fruit and Vegetable grants to help augment their limited budgets to provide fresh produce to children.
- Other phases discussed in the background will be implemented by future MPH interns.



Questions or Comments?