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Improving Nutrition Education in U.S. Elementary Schools: Challenges and Opportunities

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Abstract
Poor food choices in childhood are core contributors to obesity and chronic diseases during adolescence and adulthood. Food choices and dietary behaviors develop in childhood and are difficult to change in adulthood. Nutrition education in elementary schools can provide children with the information and skills to develop healthy food choices and dietary behaviors. Current approaches for teaching nutrition and dietary behavior are largely ineffective to change elementary school students' food choices. Using a cross-sectional, anonymous mail survey, we asked classroom teachers how to improve nutrition education in 17 Oregon elementary schools. Among 106 teachers who responded, most perceived that nutrition education in elementary school is very to somewhat important (97%) and can improve students' food choices long-term (53%) or at least short-term (16%). Teachers noted multiple barriers for nutrition education, the primary being competing academic expectations (52%), lack of available time (48%), lack of suitable curricula (36%), and a food environment at school and home that does not reinforce what is taught in the classroom. Teachers preferred nutrition education that is integrated into the math, science, and/or English curriculum (54%) and includes a school cafeteria component (70%) and parent participation (53%). In conclusion, there is insufficient time and incentive to teach nutrition education as stand-alone curriculum. Renewed focus should be on developing and implementing nutrition education programs that are integrated in the math, science, and/or English curriculum and that involve and target also the food environment. Unless the food environment at school and home reinforce what is being taught in the classroom, nutrition education will have limited impact on student's food choices.
Keywords: Childhood obesity, Curriculum, Elementary school teachers, Food choices, Food Environment, Nutrition education

1. Introduction

The foundation for a healthy life span is laid in childhood, as a balanced diet provides the essential nutrients for healthy development and growth. In contrast, inadequate nutrient intake is associated with obesity and chronic diseases during adolescence and adulthood as well as poor academic behavior and performance (O'Dea & Mugridge, 2012; Anzman-Frasca et al., 2015). We previously documented that inadequate nutrient intake is even prevalent in elementary school-aged children living in communities with a very knowledgeable, affluent population and easy access to high quality, affordable food in the community as well as at school (Bobe et al., 2013; Frei et al., 2014).

Nutrition education in elementary schools plays an important role in shaping students' food choices and ultimately health and performance (Contento et al., 1995). Most U.S. states, including Oregon, require elementary school classroom teachers to teach nutrition and dietary behavior as part of health education; however, nutrition and dietary behavior is one of up to 15 subject matters taught in health education (Kann et al., 2007; Oregon Department of Education, 2012). As health education is not a subject matter covered in standardized state test, time, if any, left for teaching nutrition and dietary behaviors is limited. Since No Child

Left Behind (NCLB) was enacted in 2001, the median length for teaching nutrition and dietary behavior in elementary school decreased, according to the nation-wide School Health Policies and Programs Study (SHPPS), from 5 hours per school year in 2000 to 3.4 hours in 2006 (Kann et al., 2001, 2007). Furthermore, 17% of New York state elementary school teachers do not incorporate nutrition education into their classroom curriculum (Watts et al., 2012).

Given this context, the objective of this study is to identify facilitators, barriers, and preferences to improve nutrition education in elementary schools. We focused on classroom teachers and asked how to improve nutrition education in elementary schools, as they will implement new nutrition education programs. This has been evaluated quantitatively by only two U.S. studies during the last 20 years (Pèrez-Escamilla et al., 2002; Hammerschmidt et al., 2011).

2. Materials and Methods

2.1. Design and data collection

The study was a cross-sectional mail survey study to identify facilitators, barriers, and preferences of elementary school classroom teachers on how to improve nutrition education in elementary schools. The study was reviewed and approved by the Oregon State University Institutional Review Board (IRB protocol number 4953; "Childhood Nutrition and Exercise in Elementary Schools"). After receiving written approval from the school district (we had mailed all Oregon school districts information about the study) and school principals, packages that contained anonymous teacher mail surveys in English and paper format, alternative consent forms, and stamped return envelopes were mailed in May 2011 to 17 elementary schools in 6 school districts across Oregon. Of the 206 contacted teachers, 111 teachers returned by June 2011 the completed survey (54% response rate; responses of 5 non-classroom teachers were excluded from the analysis). The participating school districts provided a representative sample of Oregon schools, as they covered urban, semirural, and rural districts.

2.2. *Instrument*

To identify facilitators, barriers, and preferences on how to improve nutrition education in elementary schools, we developed a one-page questionnaire (Appendix). The questions were formulated to assess the following constructs: facilitators (importance, concern, knowledge, interest, impact, and responsibility for a total of 6 questions), barriers (at school, personal, at home, and for training for a total of 4 questions), and preferences (2 questions). The scales for most facilitators were five-level Likert-type scales. Questions for barriers and preferences were designed to be open-ended; some options were provided to provide a general direction of the question; however, respondents could fill in their personal responses under "others". These questionnaires were not pretested for their validity. The survey was in paper format, English only, and anonymous. To maintain confidentiality, we did not ask questions about the student population (race, ethnicity, social economic status), training background of the responding person (training in nutrition, culinary arts, or health science), and what types of nutrition programs already existed at the school of the responding person. The primary theoretical framework for the survey was the health belief model, as classroom teachers are mostly guided by rational decision making (Glanz et al., 2002). To account for environmental and social factors and the complexity of the task of improving food choices of elementary school students, we included constructs from the social-ecological model and the social cognitive theory (Glanz et al., 2002).

2.3. Statistical analysis

Statistical analyses were performed using SAS version 9.2 software (SAS Institute, 2009). To maintain the anonymity of the respondents, the mail surveys did not contain any demographic information and, thus, only descriptive statistics were calculated.

3. Results

3.1. Facilitators of nutrition education in elementary schools

Nutrition education in elementary schools was perceived as important by nearly all classroom teachers (Table 1). This is indicated by the fact that 97% of teachers considered nutrition education in elementary schools as somewhat to very important. Nearly all teachers (98%) were somewhat to very concerned about childhood nutrition, rated their knowledge as average to proficient (95%), and were somewhat to very interested in learning more about childhood nutrition (89%). Teachers perceived that nutrition education in elementary schools could improve students' food choices long-term (53%) or at least short-term (16%), and that they together with parents are responsible to provide children nutrition education (87%).

Table 1. Classroom Teachers' Facilitators for Nutrition Education in Elementary Schools (n = 106)

Facilitators	Responses (Values are % followed by number of responses in parenthesis)					
Importance: How important is nutrition education in elementary schools?						
Very	Important	Somewhat	Little	Not	Not sure	No answer
53% (56)	41% (44)	3% (3)	3% (3)	0% (0)	0% (0)	0% (0)
Concern: Are you concerned about childhood nutrition?						
Very	Concerned	Somewhat	Little	Not	Not sure	No answer
57% (60)	32% (34)	9% (10)	2% (2)	0% (0)	0% (0)	0% (0)
Knowledge: How would you rate your knowledge on childhood nutrition?						
Proficient	High	Average	Little	No	Not sure	No answer
22% (23)	31% (33)	42% (45)	4% (4)	0% (0)	1% (1)	0% (0)
Interest in More Information: Would you be interested in learning more about childhood nutrition?						
Very	Interested	Somewhat	Little	Not	Not sure	No answer
23% (25)	40% (42)	24% (26)	7% (7)	2% (2)	4% (4)	0% (0)
Impact: Do you think that nutrition education in schools could positively impact students' eating habits?						
Short- and long-term	Yes, only short-term		Little impact	No impact	Not sure	No answer
53% (56)	16% (17)		14% (15)	1% (1)	16% (17)	0% (0)
Personal Responsibility: Who is responsible for providing nutrition education to children?[a]						
Parents and teachers	Parents only	Teachers only	Government	Health Professionals		Others[b]
87% (92)	3% (3)	3% (3)	31% (33)	39% (41)		8% (9)

[a]In contrast to the other questions, participants chose more than one answer.

[b]Others include everyone (n = 4), not sure (n = 1), grandparents (n = 1), cafeteria (n = 1), media (n = 1), and "national obesity epidemic" (n = 1).

3.2. Barriers for nutrition education in elementary schools

The greatest barriers for incorporating nutrition education into the classroom curriculum were competing academic expectations (52%) and lack of classroom time (48%; Table 2). Nearly all teachers (84%) circled at least one of these two barriers on the survey. Lack of time was also perceived as the primary personal barrier (61%). Several teachers responded under "others" that they try to include nutrition education into their curriculum as time allows. Another important barrier was the "lack of a suitable curriculum" (36%) combined with limited proficiency in nutrition education (21%). Suitable curriculum was not further defined; however, teacher commented under "other" that the challenge was to find nutrition curricula that are "easy/short lessons/readily available" and "embedded across curriculum". Most teachers (83%) were interested in nutrition education training; the greatest barrier being cost ("only if it is free" or "only if the school district pays for it"), which was circled by 48 of 88 teachers interested in training (55%). Only 31 teachers that were interested in training reported no barriers (35%).

Table 2. Barriers of Classroom Teachers for Providing Nutrition Education (n = 106)

What do you think are the greatest barriers at school to incorporate nutrition education into your classroom curriculum?	Responses[a]
Competing academic expectations	52% (55)
No time available to include nutrition curriculum	48% (51)
Lack of suitable curriculum	36% (38)
Lack of administrative support	4% (4)
Others [cafeteria needs to model good nutrition (n=4), lack of money (n=4), insufficient time (n=3), teachers are not proficient in nutrition education (n=1), lack of home support (n=1), lack of motivation as it is not a state test (n=1), and it is in our curriculum and I teach it (n=1)]	16% (17)
Did not answer	1% (1)
What do you think are your greatest personal barriers for incorporating a nutrition curriculum?	**Responses[a]**
I cannot fit a nutrition curriculum into my already busy schedule	61% (65)
I don't have enough nutrition education	21% (22)
I don't think I'm the right person to teach nutrition and healthy eating	6% (6)
It's not my responsibility	3% (3)
Others [no suitable curriculum (n=8), our cafeteria needs to model good nutrition (n=6), I try to include nutrition into the curriculum as time allows (n=6), not a priority (n=1), staff need to be health conscious (n=1), health curriculum is bigger than just nutrition (n=1), lack of money (n=1), incorporate nutrition education into meeting standards (n=1), we should be funding PE and health teachers (n=1), and food at home unhealthy (n=1)]	21% (22)
Did not answer	8% (8)
Would you be interested in nutrition education training that provides a curriculum for your use?	**Responses[a]**
Yes	83% (88)
Only if it is free	31% (33)
Only if the school district pays for it	27% (29)
Only if I get continuing education credits	8% (8)
No	13% (14)
Others [not sure (n=3), if it is low cost (n=3), if it is during summer (n=2), level of education training (n=1), only if it's in Spanish (n=1), only if I can use it along with my specially designed instruction (n=1), and depends on how intense the training is (n=1)]	10% (11)
Did not answer	1% (1)

[a]Values are percentages followed by number of observations in parenthesis. Participants can choose more than one answer.

The home and school food environment were pointed out as important barriers for nutrition education (Table 2). Under "others", 4 teachers wrote for school barriers and 6 for personal barriers that the food choices offered by the cafeteria do not reflect what has is being taught, as exemplified by the comments "our cafeteria needs to model good nutrition" and "poor choice offered by food services- all carbs and sugar and fat". Teachers provided similar comments for food choices offered at students' home ("too much sugar at school and home"). Table 3 lists reasons for an inadequate home food environment; the primary being lack of parental role modeling (67%) and money (57%). Barriers noted most commonly under "others" were "convenience/accessibility" of processed foods ("I think people focus on short term fixes rather than lifestyle choices") and that parents did not have time and skills for preparing healthy meals.

Table 3. Classroom Teachers' Explanations for Inadequate Home Food Environment (n = 106)

What do you think are the greatest barriers for improving students' eating habits at home?	Responses[a]
Parents are not health conscious	67% (71)
Parents can't afford to buy healthful food	57% (60)
Parents do not think it is their responsibility	17% (18)
Others [convenience of fast/processed foods (n=13), parents' lack of time (n=8), parents are not good role models (n=8), parents don't know how to prepare healthy meals and snacks (n=3), advertising media (n=2), and school lunches aren't always nutritious (n=1)]	25% (27)
Did not answer	1% (1)

[a]Values are percentages followed by number of observations in parenthesis. Participants can choose more than one answer.

3.3. Preferences for nutrition education in elementary schools

Most classroom teachers preferred a nutrition curriculum which can be integrated into other state-tested subject matters (54%) and includes a school cafeteria component (70%) and parent participation (53%; Table 4). This was summarized by the comments "It is a team effort" and "integration into curriculum (math, science, health) and support from district/ school cafeteria (serving healthy food choices)". Some teachers wrote under "others" that they would like a curriculum that is "hands on, interactive-not just exposure but mastery to continue long term". Only a minority of teachers (5%) were in favor of a "stand-alone nutrition curriculum". Only 13 teachers (12%) responded to how many sessions of nutrition education they preferred. The median was 10 sessions per class year with a range of 1 session to daily.

Table 4. Classroom Teachers' Preferences for Nutrition Education in Elementary Schools (n = 106)

In your opinion how should an effective and successful nutrition curriculum look?	Responses[a]
Includes school cafeteria component	70% (74)
Nutrition integrated into math, science, and/or English curriculum	54% (57)
Includes parent participation	53% (56)
Stand-alone nutrition curriculum	5% (5)
Others [interactive/hands on (n=3), it's a lifestyle (n=1), be part of social studies (n=1), I'm not sure (n=1), it would depend on the type of curriculum (n=1)]	7% (7)
Did not answer	1% (1)

[a]Values are percentages followed by number of observations in parenthesis. Participants can choose more than one answer.

4. Discussion

Promoting healthy food choices in children is one of the core public health goals. Nutrition education in elementary schools, which is generally taught by classroom teachers, can play an important role in shaping students' food choices (Contento et al., 1995). However, there are various personal, school, and environmental barriers that impact negatively the effectiveness of nutrition education programs. Our goal is not to blindly criticize current efforts but to articulate, based on our results, some of the challenges and opportunities to improve current nutrition education programs in U.S. elementary schools. Using the concept of 'disjoint constitution' (Ten Eyck et al., 2006), we argue that there is a disjoint between the learning outcomes for nutrition education, the amount of time and incentives provided for nutrition education, and the food environment students are exposed to. The disjoint questions the validity and importance of the messages learned in the classroom (Bauer et al., 2006; Shepherd et al., 2005). Thus, the nutrition messages become information without connection to the students' environment, i.e., 'nothing', and thus negatively impact the effectiveness and implementation of nutrition education programs. We will highlight some aspects of the disjoint constitution of nutrition education and opportunities to move nutrition education from 'nothing' to 'something'.

4.1. Facilitators of nutrition education in elementary schools

Elementary school teachers have a strong personal motivation to teach nutrition and dietary behavior. Similar to studies in Minnesota and urban Connecticut (Stang et al., 1998; Pėrez-Escamilla et al., 2002), nearly all teachers in Oregon perceived nutrition education as important. Other personal reasons for providing nutrition education were concern, interest, knowledge, and responsibility, as well as an expected positive impact on students' food choices (Table 1). In addition, Stang et al. (1998) cited personal enjoyment of teaching nutrition, requirement, and student interest as common reasons for teaching nutrition.

4.2. Barriers for nutrition education in elementary schools

There are various barriers for elementary school teachers to teach nutrition and dietary behavior, the greatest being insufficient time (Table 2). This is consistent with studies in Northwestern Nevada (Woodson et al., 1995), Minnesota (Stang et al., 1998); urban Connecticut (Pėrez-Escamilla et al., 2002), and low-income schools in Michigan (Hammerschmidt et al., 2011). There is a disconnect between the number of hours expected to teach nutrition education and the number of hours required to achieve learning outcomes (Oregon Department of Education, 2012). Successful nutrition education programs require 15 hours per year to cause changes in knowledge and 50 hours per year to result in long-term changes in attitudes and behavior (Contento et al., 1995). Nutrition and dietary behavior is one of up to 15 subject matters taught in health education ("Health curriculum is bigger than just nutrition"), which leaves little or no time for the nutrition and dietary behavior unit ["we have one health curriculum that includes one month of lessons (4 lessons)"]. Similarly, the median time currently used for teaching nutrition is according to the nation-wide 2006 SHPPS study 3.4 hours per school year (Kann et al., 2007). In summary, there is currently insufficient time to teach effective nutrition education programs during the school day.

A major reason why teachers do not spend more time on nutrition education is that nutrition and

dietary behavior is not on the state-wide tests ["lack of motivation ("not a state test") and "focus on testing"]. Given the primary task of teachers is to prepare students for state-wide tests, which cover subject matters in math, science, and English language arts (Cho & Nadow, 2004), nutrition education has a low priority ("haven't made it a priority") and taught as time allows ("we do incorporate nutrition into our curriculum as time allows", and "I cannot fit it in but would try"). For example, 17% of New York state elementary school teachers do not incorporate nutrition education into their classroom curriculum (Watts et al., 2012) with even higher proportions reported for Minnesota (22%; Stang et al., 1998), Northwestern Nevada (26%; Woodson et al., 1995), and urban Connecticut (44%; Pėrez-Escamilla et al., 2002). In summary, there is currently insufficient external incentive for classroom teachers to teach effective nutrition education programs during the school day.

Following insufficient time, classroom teachers perceived lack of a suitable curriculum ("need to find ways to put it together with other curriculum") combined with limited nutrition education training as barriers for teaching nutrition and dietary behavior ("most teachers not proficient to teach it"). This is consistent with studies in Northwestern Nevada (Woodson et al., 1995), Minnesota (Stang et al., 1998), urban Connecticut (Pėrez-Escamilla et al., 2002), and low-income schools in Michigan (Hammerschmidt et al., 2011). This stands in contrast with the wide availability of effective educational materials and curricula for nutrition and dietary behavior and the wide availability of funds for nutrition education training (Kann et al., 2007, 2013). The underlying question becomes why teachers who have high personal motivation to teach nutrition do not take advantage of available educational material and training. We argue that seeking out nutrition educational material and training for nutrition is not a priority for teachers despite the high personal motivation because nutrition and dietary behavior is not on the state-wide tests, the proportion of teaching devoted to nutrition is minimal, and the time allocated for nutrition is insufficient for achieving changes in students' food choices. Currently available training materials and courses may not adequately address the needs of teachers, i.e., training materials have to be short, flexible in length, and also cover subject matters in state tests, specifically math, science, and English language ("easy/short lessons/ readily available" and "needs to be imbedded across curriculum").

Classroom teachers perceived a disjoint between what is taught in nutrition and the school food environment ("do not have breakfast/lunch at school to support" and "little support through our school food providers"). The school breakfast and lunch program and food-related policies are critical for reinforcing classroom nutrition education (Lytle, 1995); otherwise, students will question the validity and importance of the messages learned in class (Bauer et al., 2006; Shepherd et al., 2006) and behavior changes will not occur. Nutrition services and the school nutrition environment have greatly improved over the last decades (Merlo et al., 2013). We argue that the disconnect between classroom messages about healthy/unhealthy food choices and what is offered in the cafeteria stems from the fact that the food services' evaluation is based on the nutrient content of the whole menu, emphasizing healthy food options offered but often rarely consumed at the salad bar (Adams et al., 2005; Cohen et al., 2013). In contrast, teachers primarily noted individual unhealthy food options in the cafeteria such as pizza, corn dogs, etc. ("the foods served at school- not great" and "poor choices offered by food services- all carbs and sugar and fat") and, thus, questioned the expertise of the cafeteria personnel ("district food/ services may not be as knowledgeable about nutrition as they perceive themselves to be"). Other studies also noted the limited communication between classroom teacher and food service personnel (Stang et al., 1998; U.S. Department of Education & National Center for Education Statistics). In summary, availability of unhealthy food options in school contradicts classroom nutrition education messages.

Besides the school food environment, classroom teachers perceived a disconnect between what is taught in nutrition and the home food environment ("needs to be supported at home" and "too much sugar at school and at home"). Family involvement is critical for reinforcing learning outcomes in classroom nutrition education (Lytle, 1995). Similar to a study in low-income schools in Michigan (Hammerschmidt et al., 2011), classroom teacher emphasized that nutrition messages in the classroom are not reinforced at students' home. The easy access, the lower price, and the convenience (i.e., less time to prepare and clean up) of less nutritious food options were perceived by us and others (Shepherd et al., 2005) as primary barriers for a healthy home food environment. Parents may not know how to find and prepare healthy meal options on a tight budget. Experiential learning assignments at home are an option to improve the food environment but one has to consider food insecurity. Furthermore, parents may feel resentment that the teacher try to influence what they eat (Downs et al., 2012).

4.3. Preferences for nutrition education in elementary schools

Most teachers preferred a nutrition curriculum that is integrated into state-tested subject matters, namely math, science, and English language ("needs to be imbedded across curriculum") and thus, would not limit the time spent on state-tested subject matters. Given the time constraints, only 5% preferred a separate course in nutrition education. Studies report that only approximately 25-35% of teachers provide nutrition education as a separate subject; most teach nutrition integrated into other subjects, primarily health and physical education or science

(Woodson et al., 1995; Stang et al., 1998; U.S. Department of Education & National Center for Education Statistics, 2000; Watts et al., 2012). Only a minority of teachers integrated nutrition with math or English language (U.S. Department of Education, & National Center for Education Statistics, 2000; Watts et al., 2012). Both math and English language are well suited for embedding information about nutrition and modeling desirable food choices. Thus, renewed focus should be on developing and implementing nutrition education materials that are integrated in the math, science, and/or English curriculum. We have developed lesson plans containing nutrition information that is embedded in science, math, reading, and writing (http://lpi.oregonstate.edu/healthyyouth/grades-k-5), which have not yet been evaluated. In addition, incorporating nutrition examples in state test material will elevate the importance of teaching nutrition education ["lack of motivation (not a state test)"].

Teachers preferred nutrition education programs with a school cafeteria component ["support from district/ school cafeteria (serving healthy food choices)" and "our cafeteria (especially breakfast) needs to model good nutrition") and parent participation ("it is a team effort!'). Parent and school cafeteria involvement increases the success of program, but require time, resources, strong leadership, and collaborations between teachers, food service personnel, and parents (Stang et al., 1998; Della Torre et al., 2010; Rana & Alvaro, 2010; Middleton et al., 2012). Other suggestions in our study were experiential learning ("curriculum/education nutrition classes during lunch w/ guided lessons & eat while learn" and "hands on, interactive-not just exposure but mastery to continue long term") and cooking demonstrations ("cook in the classroom to try new foods"). These options, however, require outside resources to deliver those programs (Levine et al., 2002; Briggs et al., 2010). After-school or summer programs and school-home-community partnerships are more viable options for hands on nutrition education because of the time constraints during the school day (Briggs et al., 2010; Hammerschmidt et al., 2011). An option that was not mentioned by our respondents is to make less nutritious food items less accessible on school grounds; e.g., improving the food options at vending machines (Briefel et al., 2009; Gonzalez et al., 2009; Woodward-Lopez et al., 2013).

5. Conclusion and Implications

Our study focused on how to improve nutrition education in Oregon public elementary schools and preferences of classroom teachers. Our findings are regional; however, the challenges for nutrition education are similar in other U.S. states and countries. Moreover, the perceptions voiced in our survey are similar to those reported from elementary school teachers in other U.S. states (Woodson et al., 1995; Stang et al., 1998; U.S. Department of Education & National Center for Education Statistics, 2000; Pérez-Escamilla et al., 2002; Hammerschmidt et al., 2011; Watts et al., 2012). We focused on classroom teachers because they will implement new nutrition education programs; we also understand that other stakeholders, including students, may differ in their responses. Classroom teacher perceived that nutrition education in elementary schools plays an important role in shaping students' food choices and ultimately physical, emotional, and cognitive function. However, unless the food environment at school and home reflects what is being taught, nutrition education will have limited impact on student's food choices. Thus, renewed focus should be on developing and implementing nutrition programs that involve and target the food environment in and outside of school. There are multiple options available to improve the food environment: 1) increased availability and easy access to nutritious and appealing foods and beverages, 2) structured access to less nutritious, calorie-dense, high sugar- and high sodium foods and beverage, and 3) opportunities to experience new, nutritious foods and beverages (Rana & Alvaro, 2010). When targeting the school and home environment, nutrition education programs have to accommodate monetary limitations and cultural food prescriptions of students and their families, including promoting and providing culturally sensitive foods. The second main message was that there is insufficient time and incentive to teach nutrition education as stand-alone curriculum. Thus, renewed focus should be on developing and evaluating nutrition lesson plans that are integrated in the math, science, and/or English curriculum. Furthermore, studies are warranted to examine how to engage more food service personnel and families into nutrition education programs.

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Appendix: ***Nutrition Education Survey for Teachers*** *(PLEASE CIRCLE OR UNDERLINE THE OPTION(S) THAT BEST DESCRIBE YOUR ANSWERS)*

1. Are you concerned about childhood nutrition?
not concerned little concerned somewhat concerned concerned
very concerned not sure

2. How important is nutrition education in elementary schools?
not important little important somewhat important important
very important not sure

3. How would you rate your knowledge of childhood nutrition?
no knowledge little knowledge average knowledge high knowledge
proficient not sure

4. Would you be interested in learning more about childhood nutrition?
not interested little interested somewhat interested interested
very interested not sure

5. Who is responsible for providing nutrition education to children?
parents only teachers only parents and teachers government/USDA pediatrician/health professional others_____

6. Do you think that curriculum-based nutrition education in schools could positively impact students' eating habits?
yes, short-term and long-term yes, but only in the short-term little impact no impact not sure

7. What do you think are the greatest barriers for improving students' eating habits at home?
parents are not health conscious parents can't afford to buy healthful foods parents do not think it is their responsibility
others:
_____
_____

8. What do you think are the greatest barriers at school to incorporate nutrition education into your classroom curriculum?
competing academic expectations no time available to include nutrition curriculum lack of suitable curriculum lack of support from principal and/or school district

others:
_____
_____

9. What do you think are your greatest personal barriers for incorporating a nutrition curriculum?

I don't have enough nutrition education it is not my responsibility I cannot fit a nutrition curriculum into my already busy schedule I don't think I am the right person to teach nutrition and healthy eating

others:
_____
_____

10. In your opinion, how should an effective and successful nutrition curriculum look?

Stand-alone curriculum Nutrition integrated into Math, Science, and/or English curriculum includes parent participation includes school cafeteria component

others:
_____
__ how many sessions? _____

11. Would you be interested in nutrition education training that provides a curriculum for your use?

Yes No only if it is free only if the school district pays for it only if I get continuing education credits others_____