

The Role of Classroom Teachers in Nutrition and Physical Education

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Abstract

Nutrition education and physical education in schools is increasingly being explored as a way to prevent childhood overweight and to promote healthy eating and physical activity habits behaviors. Classroom teachers are often responsible for providing this education. The current study examined the roles and perspectives of elementary school teachers regarding student nutrition, nutrition education, and physical education. Data is from a 2001-2002 study of the Los Angeles Unified School District (LAUSD) Nutrition Network. Analyses were based on 78 structured interviews with elementary school teachers. Results showed that teachers perceive their role in nutrition education as teachers, role models, advocates, and motivators. Teachers integrate nutrition education into existing subject areas, and believe that nutrition education results in greater knowledge and healthier food choices. However, teachers report that too little time is spent on nutrition education. Results of this study also indicate that classroom teachers are often responsible for physical education (PE). Teachers believe PE has a positive effect on the school community and on student fitness, but the effect is limited due to lack of structure and lack of time in PE class. Teachers report barriers to both nutrition education and physical education, including other classes taking up too much time, limited teacher training, and a lack of adequate equipment and facilities. Findings suggest that more resources including teacher training, time, curricula and textbooks, and equipment need to be allocated for nutrition education and physical education at the elementary school level.

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Introduction

Data from large, nationally representative surveys over the past two decades show that overweight and obesity are increasing among adults, and overweight is increasing among children and adolescents in the U.S. (Flegal, Carroll, Ogden, & Johnson, 2002; Ogden, Flegal, Carroll, & Johnson, 2002; Hedley, Ogden, Johnson, Carroll, Curtin, & Flegal, 2004). Overweight and obesity increase adults' risk for a number of chronic illnesses, including hypertension, heart disease, diabetes, stroke, and some types of cancer (Pi-Sunyer, 1993). An estimated 200,000 to 230,000 deaths in the U.S. each year are attributable to overweight and obesity (Allison, Fontaine, Manson, Stevens, & VanItallie, 1999; Flegal, Graubard, & Williamson, 2004). Total U.S. expenditures for medical costs and lost productivity related solely

to obesity amounted to an estimated \$99 billion in 1995 (Wolf & Colditz, 1998).

It is well established that diet and physical activity are two key modifiable risk factors for overweight and obesity. Childhood inactivity and poor diet are of concern because physical activity and nutrition habits adopted in early life may continue into adulthood, and overweight children are more likely to become overweight adults (Baranowski, Mendlein, Resnicow, Frank, Cullen, & Baranowski, 2000; Guo, Roche, Chumlea, & Siervogel, 1994). In addition, poor food choices and physical inactivity contribute to problems during childhood and adolescence, including behavioral problems at school, emotional problems, and academic difficulties, as well as health problems such as hypertension

and type-2 diabetes, diseases once thought to only affect adults (Pi-Sunyer, 1991).

Despite the many health, emotional, and academic benefits linked to physical activity and a nutritious diet, studies reveal that schoolchildren are becoming more sedentary and consumption of sugar, fat, and total energy is increasing (Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004; Centers for Disease Control and Prevention, 2000; Healthy People 2010; Jahns, Siega-Riz, & Popkin, 2001; Kant, 2003; Troiano & Flegal, 1998). The prevalence of overweight children in the U.S. ages 6-19 (defined as >95th percentile of the body mass index (BMI) for sex and age growth chart) has tripled in the past 25 years, from 5% in the mid-1970s to 16% in the year 2000 (Healthy People 2010; Hedley, Ogden, Johnson, Carroll, Curtin, & Flegal, 2004). Current data show that 20.5% of African-American, 22.2% of Latino, and 13.6% of White children are overweight (Hedley et al., 2004). Health interventions in childhood are needed to reduce overweight and increase physical activity and nutritious food choices.

School Health Education

For the past several decades, both educators and health professionals have recognized the role schools and teachers can play in promoting health. Schools have the potential to reach the estimated 50 million children and adolescents enrolled in the nation's schools (Lear, 2002). Realizing the potential for schools to promote health, Healthy People 2000 included the objective that 75% of nation's elementary and secondary schools provide "planned and sequential" K-12 quality school health education (Healthy People 2000).

Comprehensive school health education goes beyond the classroom, in particular health education to prevent overweight and obesity. There are three areas where schools can become involved in nutrition education and physical education: 1) direct health services (including nutrition and physical activity counseling) in a school-based health clinic; 2) the school environment (including school meals); and 3) classroom-based nutrition education and physical education (PE) (Jasaitis, 1997;

Resnicow, Cherry, & Cross, 1993). Research suggests that a comprehensive approach can be an effective way to improve the health of children and adolescents, given the multiple influences on health and health behaviors and the limited funds available for health promotion.

In the past, the key school health professional was the school nurse; today, there is a lack of consensus as to who is the key school health professional (Lear, 2002). Comprehensive school health programs rely upon multiple staff members, from principals to food service program managers. Increasingly, classroom teachers are responsible for health education, including nutrition education and physical education. Some experts have expressed concern at assigning additional responsibilities to classroom teachers. As Resnicow notes, "Assignment of additional responsibilities without concomitant increases in pay or status can produce role ambiguity or work overload which can decrease program implementation. If classroom teachers will be expected to add health to their teaching repertoire, they must be adequately trained and motivated," (1993, p. 174).

In the current study, we examined the role of classroom teachers in overweight and obesity prevention. We gathered elementary school teachers' perspectives on nutrition education and physical education (PE); their perceived roles and responsibilities; their institutional and community support; and their beliefs about the effects of nutrition and physical education on students' knowledge, attitudes, and behaviors.

Methods

The Los Angeles Unified School District (LAUSD) is the second largest school district in the United States, covering 704 square miles within Los Angeles County (LAUSD, 2004). There are over 745,000 enrolled students in grades K-12, more than 70 percent are Hispanic, and 75% qualify for free or reduced cost meals (LAUSD, 2004). As part of the district's commitment to improving student health, the LAUSD Nutrition Network was established in 2000 to encourage healthy eating choices and physical activity among LAUSD students

through nutrition education. In 2002-2003, the Nutrition Network served approximately 236 schools with students in lower socioeconomic groups, offering these schools funding for programs focusing on nutrition and physical activity. The Nutrition Network programs reach over 212,500 students annually (LAUSD Nutrition Network, 2003).

In 2001, a research team from the University of California Los Angeles (UCLA) School of Public Health and the LAUSD Nutrition Network collected data about nutrition and physical activity programs in elementary schools with and without LAUSD Nutrition Network program activities. The overall goal of this study was to obtain quantitative and qualitative information on existing nutrition education, physical education, school garden programs, and student participation patterns in schools with and schools without Nutrition Network program activities. Approval to conduct the study was granted by both the UCLA Office for Protection of Research Subjects and the LAUSD Program Evaluation and Research Branch.

Selection of Study Schools

A random sample of intervention schools [LAUSD elementary schools that participated in Nutrition Network program activities in 2000-2001] was selected for the current study. Each intervention school was matched with a non-intervention but eligible school for Nutrition Network funding. The matching was based on school racial/ethnic composition and local district. Twenty-five out of approximately 150 Nutrition Network schools and 20 out of approximately 350 eligible, non-Nutrition Network schools were originally randomly selected. At the request of the Nutrition Network, eleven additional conveniently selected intervention schools were added to create a larger convenience sample of schools with Nutrition Network programs in the 2000-2001 school year. Five non-intervention schools were dropped to allow for the addition of the convenience sample, resulting in a final sample of 53 schools: 32 Nutrition Network schools and 21 non-intervention schools. All schools in this study were comprised of at least 50% of students who were eligible and had applied for the

USDA's free or reduced price student meals program, available to students from families with income less than 185% of the Federal Poverty Level. At each of the 53 schools, upon our request, the school principal recommended specific key informants [teachers, cafeteria managers, school nurses, students, and parents] to be interviewed. School and individual participation was strictly voluntary.

Development and Administration of Questionnaire

A face-to-face structured interview administered by research study staff was selected as the best strategy to gather comprehensive information from key informants. Researchers in nutrition, health education, and social science, as well as education professionals and a registered dietitian collaborated to develop the questionnaire. The questionnaire was pre-tested at schools not included in the final sample.

The questionnaire included items on definitions of nutrition and physical education (PE); perceptions of students' nutritional problems; perceptions of one's role in nutrition education; integration of nutrition education and PE into other subjects; time spent on nutrition education and in PE; resources available and resources needed for nutrition education and PE; and effects of nutrition education and PE on the school community. Teachers were also asked about their education, years teaching, and time at their current school.

Data Analysis

A total of 361 interviews were completed with teachers, principals, cafeteria managers, school nurses, other school staff, students, and parents. All interviews were read and analyzed. Open-ended questions were read and coded by two research associates into common themes. Data was entered into a computer database and analyzed using Statistical Package for the Social Sciences (SPSS) 11.5.

Multiple responses were allowed in the open-ended questions, therefore results reported for a particular question may exceed 100%. Several questions involved first allowing the respondent to answer freely, and then prompting the

respondent for specific answers not previously mentioned. For the current study, prompted and unprompted responses were collapsed, except where explicitly stated.

Results

Interviews were completed with at least one classroom teacher in each of the 53 elementary schools in the study, for a total of 78 interviews with classroom teachers. The sample of classroom teachers was predominantly women (84.6%), and had a median age of 40.5 (range: 25-70 years old). The sample was racially and ethnically diverse, with 38.5% of teachers identifying themselves as White, 26.9% Latino/Hispanic, 12.8% Asian, 11.5% African American, 5.8% Filipino, and 5.1% other. The diversity of the teacher sample reflected the schools where they teach: 60% of teachers represented schools with more than 80% Hispanic students, 20% of teachers represented schools with 60-79% Hispanic students, and 6.6% of teachers represented school with either a majority of African-American students or a 50/50 split of African American and Hispanic students. All teachers came from schools with at

least 50% of students eligible and applied for free or reduced priced school meals, as this was part of the school selection criteria. Most teachers (79.3%) represented schools with at least 80% of students eligible and applied for free or reduced school lunch. Most teachers were experienced teachers as three-fourths had worked in schools for six or more years. In addition, most teachers had several years of experience at their current school, as 86% had been with their school for at least three years. For 64.1% of teachers, a Bachelor’s degree was their highest education. An additional 34.6% had a Master’s degree and 1.3% had a doctoral degree.

Nutrition and Student Nutrition

When asked how they define nutrition, two-thirds of classroom teachers (69.2%) said that nutrition is eating right, eating a balanced diet, and/or choosing healthy foods (see Table 1). In addition, 28.2% said nutrition is one’s overall health and lifestyle, and one in six teachers included physical activity or exercise in their definition of nutrition.

Table 1
How teachers define nutrition

Response Category	N	Percent
Teach nutrition	36	46.2%
Model or encourage healthy eating	22	28.2%
My role is an important one	15	19.2%
Lead, motivate, advocate, and/or facilitate	11	14.1%
Provide information or resources	6	7.7%
Teach parents nutrition	6	7.7%
Provide healthy foods	4	5.1%

Note. Due to multiple responses, total percentages exceed 100%.

Nearly all teachers (93.6%) reported that overweight was a nutritional problem for students at their school. Ninety eight percent reported excess junk food (high fat and/or high sugar) consumption and 92.3% reported low fruit and vegetable consumption as problems for students at their school. In addition, more than

half (55.1%) said that hunger was a significant problem for some students at their school.

Nutrition Education

Most teachers (84.6%) defined nutrition education as teaching or raising awareness about nutrition in students. Fewer than one in ten

teachers (9.0%) said that nutrition education involves teaching parents and families. Teachers were asked how they perceive their role regarding student nutrition. The most common response was “teach nutrition” (46.2%) (see Table 2). Other common responses included

modeling or encouraging healthy eating (28.2%) and leading, motivating, advocating, and/or facilitating healthy eating (14.1%). Nineteen percent of teachers thought that their role in student nutrition was an important one.

Table 2
Teachers’ perceived roles in nutrition education

Response Category	N	Percent
Teach nutrition	36	46.2%
Model or encourage healthy eating	22	28.2%
My role is an important one	15	19.2%
Lead, motivate, advocate, and/or facilitate	11	14.1%
Provide information or resources	6	7.7%
Teach parents nutrition	6	7.7%
Provide healthy foods	4	5.1%

Note. Due to multiple responses, total percentages exceed 100%.

Teachers described using a number of different activities and materials in nutrition education, primarily posters and bulletin boards, books, art project and murals, gardening, and audiovisual materials. Most teachers reported integrating nutrition education into a variety of subject areas, including Science (89.0%), English as a Second Language (ESL) (84.6%), Health (83.3%), Art (83.3%), and Reading/Language Arts (71.8%). Teachers reported using math exercises (counting, graphing, and working with fractions), art projects, stories, vocabulary, and growing foods or gardening in order to integrate nutrition education into these other subjects.

Teachers generally believed that nutrition education improves student knowledge and awareness of nutrition. More than one in six (17.9%) teachers thought that nutrition education resulted in parents and students interacting over the subject, which affected food choices at home. Fifteen percent thought that nutrition education increases interest or awareness of nutrition. In addition, 80.8% of teachers said that students eat either a little or a lot better as a result of nutrition education at school. Fifty percent of teachers believed that

this effect was due to students being more aware of healthy eating, and 25.6% thought students were making healthier food choices.

Teachers reported that classroom teachers at their school (including themselves) worked with a number of people both within and outside of their schools on nutrition education. The most common responses were school food program staff (reported by 46.2% of teachers), the school nurse (46.2%), and PE teachers (25.6%). Only 11.5% said that classroom teachers worked with someone from another school on nutrition education.

When asked about the organizations with which their school collaborated for nutrition education, three-quarters (75.6%) of teachers mentioned a food commodity organization, such as the Dairy Council. Other common responses included health organizations (67.8%) such as Healthy Start (33.4%), and 5-A-Day Power Play! Campaign [a California Department of Health Services social marketing program] (33.4%). Less common responses included religious organizations (6.4%) and the local health department (5.2%).

Teachers estimated the average minutes per week students at their school spend learning about nutrition. There was wide variation in the teachers' responses (see Table 3). While 28.2% of teachers thought their students receive more than 60 minutes of nutrition education per week, 20.5% thought their students receive between one and fifteen minutes per week. Two-thirds (67.9%) of teachers thought that too little time is spent learning about nutrition. Reasons given for why more time is not spent on nutrition education are shown in Table 4. Common

responses included other classes taking up too much time (76.3%), Reading/Language Arts taking up too much time (69.5%), teachers not being adequately trained (62.7%), the school not having adequate equipment (45%), and the school not having adequate facilities (37.3%). Additional reasons for why more time is not spent on nutrition education included not having enough time (17.2%), nutrition not being a priority (10.3%), and not being tested on standardized tests (8.6%).

Table 3
Average time teachers report that students at their school spend per week in nutrition education

Response	N	Percent
0 Minutes	1	1.3%
1-15 Minutes	16	20.5%
16-30 Minutes	12	15.4%
31-45 Minutes	18	23.1%
46-60 Minutes	8	10.3%
More than 60 Minutes	22	28.2%
Don't Know:	1	1.3%

Table 4
Teachers' most common responses to the question, "Why isn't more time spent on nutrition education?"

Response Category	N	Percent
Classes (other than Reading/Language Arts) take up too much time.	45	76.3%
Reading/Language Arts takes up too much time.	41	69.5%
Teachers are not adequately trained.	33	62.7%
The school does not have adequate equipment.	27	45.8%
The school does not have adequate facilities.	22	37.3%
Nutrition education is not important.	2	2.6%

Note. This question was asked only of teachers who indicated that the time spent on nutrition education was inadequate. Due to multiple responses, total percentages exceed 100%.

Teachers recognized a wide variety of resources for nutrition education within their schools, including supplies such as books and curricula (62.8%); school staff such as teachers, nurses, and counselors (23.1%); and organizations such

as the Dairy Council and the American Heart Association (20.5%). Nearly eight percent (7.7%) of teachers reported that their school had no resources for nutrition education. Teachers named several resources their school needed for

nutrition education. The most common response was curricula and books (reported by 29.5% of teachers). Other responses included guest speakers for classes (14.1%), better school meals and snacks (12.8%), and staff development (11.5%). Teachers were able to identify many potential resources in the community. These resources include grocery stores (mentioned by 30.8% of teachers), Healthy Start (21.8%), local businesses (15.4%), and hospitals, health care facilities, and health care providers (15.4%).

Physical Education

Three-quarters of teachers (74.4%) defined physical education as actually doing physical activities (e.g., playing basketball) or exercise (see Table 5). Twenty nine percent defined physical education as something that helps keep the body in shape, healthy, and strong. In addition, 28.25% said it is education about physical activity, and 20.5% mentioned that it involves developing motor skills.

Table 5
How teachers define physical education

Response Category	N	Percent
Actual physical activities/exercises (e.g., playing basketball)	58	74.4%
Helps keep body in shape, healthy, and strong	23	29.5%
Education about physical activity	21	26.9%
Develops motor skills	16	20.5%
Affects overall health	14	18.0%
Teaches skills	9	11.5%

Note. Due to multiple responses, total percentages exceed 100%.

Teachers reported that a variety of staff teaches PE at their school. Nearly all teachers (97.4%) reported that regular classroom teachers teach PE. Fewer than one in five teachers (19.2%) said that PE teachers teach PE at their school. In addition, 73.1% said that adaptive PE specialists teach PE at their school, and 47.4% said that teacher aides teach PE at their school. Teachers indicated that PE consists of several types of activities at their school, including competitive and non-competitive individual and group activities; discussions of the benefits of fitness; non-structured free play; and dance activities.

Physical Education and Students

Teachers generally thought that PE has a positive effect on the school community. The most common responses included that PE teaches sportsmanship, teamwork, and/or cooperation (23.1%), PE makes kids do some type of physical activity (15.4%), students enjoy the social aspects of PE (11.5%), and PE

promotes a healthy lifestyle and improves overall health (10.3%).

Teachers also thought that PE has a positive effect on student fitness; 76.6% of teachers thought PE improves student fitness either a lot or a little, while 22.1% believed PE does not affect fitness. Teachers indicated that the effect of PE on fitness was somewhat limited due to lack of structure and lack of time in PE class. Twenty-five percent of teachers said that PE is the students' only exercise, and 20.5% said not enough time is spent in PE to have an effect on fitness. However, 17.9% of teachers believe that PE increases student activity.

Teachers were asked to estimate the average minutes per week students at their school spend in PE. Results are shown in Table 6. Nearly half of teachers (48.7%) reported that students receive less than the minimum California State requirement for PE of 100 minutes per week.

Twenty-seven percent reported an average of 100 minutes per week, 11.5% reported an average of 101-150 minutes per week, and 9.0% reported an average of more than 150 minutes of student time per week in PE. About half (51.3%) of teachers said that too little time is spent in PE. Reasons given for why more time is not spent on physical education are shown in Table 7.

Common responses included Reading/Language Arts taking up too much time (80.8%), other classes taking up too much time (73.1%), the school not having adequate equipment (51.9%), and the school not having adequate facilities (48.1%). Four out of ten (46.2%) believed that more time was not spent on PE due to teachers not being adequately trained.

Table 6
Average time teachers report that students at their school spend per week in physical education

Response	N	Percent
1-30 Minutes	5	6.4%
31-60 Minutes	12	15.4%
61-99 Minutes	21	26.9%
100 Minutes	21	26.9%
101-150 Minutes	9	11.5%
More than 150 Minutes	7	9.0%
Don't Know	3	3.8%

Table 7
Teachers' most common responses to the question, "Why isn't more time spent on physical education?"

Response Category	N	Percent
Classes (other than Reading/Language Arts) take up too much time.	41	80.8%
Reading/Language Arts takes up too much time.	38	73.1%
The school does not have adequate equipment.	27	51.9%
The school does not have adequate facilities.	25	48.1%
Teachers are not adequately trained.	24	46.2%
The weather is too hot.	10	19.2%
Students get enough physical activity at other times of day.	7	13.5%
Physical education is not important.	4	7.7%

Note. This question was asked only of teachers who indicated that the time spent on physical education was inadequate. Due to multiple responses, total percentages exceed 100%.

Teachers were able to identify resources for PE within their schools. Forty percent of teachers mentioned their school has PE equipment; 14.1% said outdoor facilities (such as a playground, track, or courts); and 9.0% said staff or personnel to supervise PE. When asked to

name resources needed for PE at their schools, top responses from teachers included equipment (32.1%); a PE teacher (17.9%); more outdoor space and/or a grassy area (17.9%); indoor facilities (gymnasium) (6.4%); and staff training (5.1%). When asked what community resources

could be used in physical education, the most common response was that there are no community resources that could be used in PE (11.5%). However, many other teachers were able to name community resources. These resources include local parks and recreation departments (9.0%); local businesses (and donations from businesses) (6.4%); and local colleges and universities and their staff (3.8%). Only 2.6% of teachers mentioned parents and families as a resource that could be used in PE.

Discussion

The present study examined the roles and perceptions of elementary school teachers regarding nutrition education and physical education. Results showed that these teachers recognize overweight, excess consumption of high-fat and high-sugar foods, and lack of physical activity as problems among students at their schools. Results also showed that teachers understand the multiple factors affecting student nutrition and exercise, including the family, the school environment, and student knowledge, attitudes, and behaviors.

Teachers perceive their role in nutrition education primarily as that of classroom instructors who teach nutrition concepts. However, they also believe their role involves modeling healthy eating habits, advocating for the students, and motivating and facilitating the good nutrition habits of their students.

In the face of increasing student overweight and increasing pressures to produce students who score well on standardized tests, elementary school teachers in this study are creatively integrating nutrition education into existing subject areas of an already impacted curriculum. They use activities such as counting, graphing, art projects, stories, and gardening to accomplish this integration. Integration of health education into other subject areas has been described as a key aspect of effective health education (Davis et al., 1985). This strategy helps teachers to efficiently use classroom time, while presenting new material in a familiar setting and context.

Teachers in this study believe that nutrition education does have an effect on students,

improving their knowledge of nutrition and helping them to make healthier food choices. Most teachers think that students eat either a little or a lot better as a result of nutrition education. However, teachers also believe that too little classroom time is spent on nutrition education. Barriers to nutrition education include other classes taking up too much time, limited teacher training, and a lack of adequate equipment and facilities.

The results of this study also indicate that classroom teachers are often responsible for physical education of their students. Less than 20% of teachers reported that a physical education teacher teaches PE at their school. Physical education consists of several types of activities, ranging from motor skill development, to instruction in individual and group sport and dance activities, to instruction about the benefits of fitness. Teachers report that PE has a positive effect on both the school community and on student fitness, teaching teamwork and sportsmanship and promoting a healthy lifestyle. Most teachers think that PE improves student fitness either a lot or a little. Teachers also indicate that the effect of PE is somewhat limited due to lack of structure and lack of time in PE class. As with nutrition education, barriers to physical education include other classes taking up too much time, limited teacher training, and a lack of adequate equipment and facilities.

The findings of the current study support the findings of several prior studies. Nearly twenty years ago, Davis and colleagues (1985) documented several “essential elements” of school health curricula. These included integrating health curricula into other subject areas, providing teacher in-service training, and making available teaching and learning resources, as appropriate for different grade levels (Davis et al., 1985). Teachers in the current study cited lack of training as a barrier to both nutrition education and physical education. Other researchers have found that teacher training significantly affects the quality of health education. A study in North Carolina found that teachers who received nutrition education training used more resources and planned more

activities than teachers who received no training (Farthing, Graves, Turchi, & Smith, 1989). In addition, a national study found that teachers in schools with fewer resources and lower institutional support for nutrition education and teachers with no training were less likely than other teachers to integrate nutrition education into other subjects (Celebuski & Farris, 2000).

The results of the current study suggest that additional teacher in-service training and additional resources should be made available to teachers to support nutrition education and physical education. In-service training has been shown to improve health education implementation (Basen-Engquist, O'Hara-Tompkins, Lovato, Lewis, Parcel, & Gingiss, 1994; Farthing et al., 1989; Fors & Doster, 1985), and to help teachers feel more confident about health education (Jacobs & Wylie, 1995). In addition, the availability of resources, including curricula, textbooks, equipment, and facilities, affects the ability of teachers to implement health education (Farthing et al., 1989). Teachers in the current study mentioned curricula, books, and classroom materials as resources their school needs for nutrition education and physical education. In addition, teachers mentioned several organizations in their communities that could be explored as potential resources, including grocery stores and other local businesses; hospitals, health care facilities, and health care providers; Healthy Start programs; parks and recreation departments; local colleges and universities; and parents and families of students.

The results of this study offer several insights into the roles and perspectives of elementary school teachers in the prevention of overweight and obesity. Increasingly, responsibility for

nutrition education and physical education is placed on classroom teachers, who are faced with a number of competing demands on their time. The current study highlights some of the creative ways teachers are implementing nutrition education and physical education in their schools. In order to support the continued efforts of elementary teachers in the prevention of overweight, resources such as time, training, and teaching materials need to be made available to them.

There are several limitations to the current study. First, the sample was a convenience sample, and may not be representative of all elementary schools in the district. Second, the Los Angeles Unified School District is a large, primarily Hispanic school district, which limits our ability to generalize results to all low-income schools. Third, teachers were asked about their perceptions of nutrition, nutrition education, and physical education, which are their personal assessments and may not represent the experiences of all teachers in the district. In addition, many of the questions in the interview asked teachers to comment on the whole school, and teachers may not be fully aware of what goes on outside of their own classroom. Similarly, the ability of teachers (or any single person) to judge the impact of school on student behavior and associated health is limited, given the numerous factors that affect behaviors and health.

Despite these limitations, the current study provides a valuable glimpse into the elementary school teachers' perceptions of their role in educating students about nutrition and physical activity.

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