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SCHOOL OF NURSING**

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Linda D. Jones

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The project and the manuscript have been successfully completed and meet the standards of the School of Nursing University. The project demonstrates the application of professional knowledge, clinical expertise, and scholarly thinking. An abstract of the project and two copies of the manuscript are attached.

ADVISOR'S SIGNATURE

Raymond S. Carlson

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Please submit the form to the Graduate Coordinator. Attach abstract, two copies of the manuscript, and the documentation of submission to the journal (i.e., postal receipt).

Minority Adolescents at Risk for Obesity:

Health Behaviors and Perceptions

ABSTRACT: The purpose of this study was to examine behaviors related to nutrition and physical activity of inner-city minority adolescents, and their perception of normal weight and overweight. The research study used a descriptive, non-experimental design which had a convenience sample of thirty-seven 8th grade minority adolescents who attended a chartered urban K-8 grade school in Northern California. There were no statistically significant differences in the results, however, over 50% of the students reported not eating the recommended daily servings of fruits and vegetables. Another 68% reported participating more than 30 minutes in exercising or playing sports during physical education class. Although 42% of the students reported being the right weight, they wanted to lose weight. This demonstrates a need for healthy nutritional behavior and physical activity amongst this population. School nurses can play an important role in identifying at risk students for obesity and provide education in nutrition, structured physical activities, and obesity prevention strategies.

Key Words: minority adolescents, middle school, nutrition behavior, physical activity behavior, overweight, perception of weight

Introduction

Obesity is reaching epidemic proportions in the United States (American Diabetes Association (ADA), (2000). Overweight and obesity are the result of an imbalance of calories consumed and those expended during physical activity. According to the Centers for Disease Control and Prevention (CDC, (2002), for adults, obesity is typically measured using BMI (body mass index, a person's weight divided by height squared). Due to rapid growth process of children, the CDC has developed BMI growth chart curves for ages 2-19 years based on height and weight percentiles specific to age and gender. At risk for overweight is defined as a BMI between the 85th and 95th percentile, and overweight is a BMI equal to or above the 95th percentile. Seventeen percent of children and adolescents ages 2-19 are overweight (CDC, 2206).

Overweight adolescents are at risk for numerous health problems, including asthma, type 2 diabetes mellitus, hypertension, high blood lipids, heart disease, and stroke, as well as psychological vulnerabilities such as low self-esteem and depression (American Heart Association (AHA), 2006; CDC, 2006; Ebbeling, Pawlak & Ludwig, 2002). Risk of obesity-related complications can differ by ethnic origin and as a result of cultural factors. According to Ebbeling, Pawlak & Ludwig, 2002), "Blacks and Hispanic youth in the US, are at greater risk for type 2 diabetes and cardiovascular disease than their white counterparts" (p. 474). Obese children and adolescents are more likely to become obese adults (AHA, 2006).

Schools are identified as a key setting for promoting lifelong healthy eating and physical activity among young people (CDC, 2000). Many schools have decreased the amount of physical education in the curriculum due to budget cuts. A substantial number

of school-based programs have been found effective in improving diet and physical activity levels of adolescents (Bergerson, Wechler, Young, & Spain, 2003).

The purpose of the study was to examine behaviors related to nutrition and physical activity of inner-city minority adolescents, and their perception of normal weight and overweight.

Literature Review

School-Based Programs

Current literature addressing the problem of adolescent obesity is limited and focused on classroom intervention (Center for Weight and Health College of Natural Resources, 2001). U.S. schools offer many opportunities for developing obesity prevention strategies by providing more nutritious food, offering greater opportunities for physical activity, and providing obesity related health services (Story, Kaphinet & French, 2004).

According to Frenn & Malin (2003), middle school years are important times to improve health behaviors. Mahat, Scoloveno & Whalen (2002) emphasizes "it is during this period that adolescents develop sophisticated reasoning abilities and begin to make important decisions, such as health behaviors, that may influence their adult life"(p. 163). Many school-based interventions in recent years have promoted healthful eating and physical activity for adolescents. Contento, Manning & Shannon's study of school-based nutrition education (as cited in Malone, 2005) revealed that it takes at least 15 hours of health education to see a gain in knowledge and 50 hours were needed to obtain changes in knowledge, attitude, and behavior "(p. 73). Kilpatrick, Ohannessian & Bartholomew (1999) emphasizes "health education in the classroom provides the opportunity to modify and improve health behaviors among adolescents" (p. 148).

Wang, Tussing, Odoms-Young, Braunschweig, Flay, Hedekert & Hellison (2005), studied 450 low socioeconomic African-American preadolescents, adolescents and their parents who participated in a school-based intervention program to prevent obesity. Four schools were randomized into control and intervention groups before baseline measurements. The intervention was for a period of 1.5 years. The control schools were provided the intervention-related materials such as classroom health curriculum and research findings at the end of the study. The intervention schools were exposed to interventions that targeted environmental factors. Preliminary analysis of baseline data showed high prevalence of overweight, 43% in boys and 41% in girls. There were several problems related to physical activity and eating patterns. Twenty-six percent reported spending greater than 20 minutes engaged in vigorous-moderate exercise on 5 or more days over the past 7 days; 29% reported spending at least 5 hours watching television, playing video games, or using the computer. Consumption of too many fried foods and soda revealed on average, 55% consumed fried food at least 2 times daily and 70% consumed soft drinks at least 2 times daily over the past seven days Wang et al. (2005).

Another school-based program that showed a reduction in obesity among adolescent girls was Planet Health. In this study, Gortmaker, Peterson, Wiecha, Sobol, Dixit, Fox & Laird (1999), 1295 ethnically diverse adolescents participated in this school-based interdisciplinary intervention over a 2 year period. A comparison of 5 intervention schools and 5 control schools found a decline in obesity among adolescent girls from 23.6% to 20.3% in the intervention schools, whereas in the control schools not receiving the Planet Health intervention, obesity increased from 21.5% to 23.7%.

Edmunds, Waters and Elliot (2001), emphasized "school-based prevention

interventions that are integrated into the normal curriculum or health promotion activities, with the aim of reducing obesity and cardiovascular disease, show promise” (p.918).

According to Edwards (2005), a Louisiana school-based program, a free alternative physical education class, shows that it is possible to conduct a weight loss and exercise program in a public school setting for low African American middle school students.

Veugelers and Fitzgerald (2003) found multifaceted school programs that include CDC guidelines were effective in preventing childhood obesity. They also found that schools with a nutritional program had a slightly lower rate in obesity than the schools without a program. The Center for Weight and Health College of Natural Resources (2001) reported on studies that showed that modifications to school setting for interventions related to diet and physical activity were successful.

Healthy People 2010 identified the increasing prevalence of overweight children and adolescents as a public health problem requiring intervention (USDHHS, 2001). The *Healthy People 2010* goal for decreasing obesity and overweight children and adolescents is 5%. Educating adolescents about the importance of consuming a healthy diet as well as being engaged in regular physical activity may help reduce the prevalence of overweight in this population.

Pender (1996) reports that school-based health promotion programs can be a major influence on children, since they spend a majority of time in school. The 5 A Day for Better Health is a national program to encourage Americans to eat 5 or more servings of fruits and vegetables every day. 5 A Day for Better Health is sponsored by the National Cancer Institute; furthermore, this program has been implemented in various school sites throughout the United States (USDHHS, 2001).

Dietary Habits

Poor dietary habits of adolescents is one of the primary risk factors for overweight. American adolescents do not consume enough grain products, vegetables, or fruit to meet the recommended number of daily serving to meet the requirements of the Dietary Guidelines for Americans (Malone, 2005). According to the CDC (2000), 79% of youth ages 12-19 do not eat the recommended five servings of fruits and vegetables each day and 72% exceed recommendations for saturated fats. Eighty-five percent of the adolescent females do not consume enough calcium. During the last 25 years, consumption of milk, the largest source of calcium, has decreased 36% among adolescent females. Contributors include poor food choices, enhanced food portion, convenience food, sweetened beverage, excess snacking, and fast foods (Ogden, Flegal, Carroll & Johnson, 2002). The type and amount of foods and beverages consumed are an important part of the obesity equation. Fast foods are being studied for their contribution to overweight and obesity among adolescents. Findings have varied as to their relationship according to age, gender and socioeconomic status. Recently, in a study of fast food consumption in adolescent aged girls over a three year period, the finding revealed those eating fast foods two or more times a week, had a larger weight gain (Anderson & Butcher, 2006).

According to the School Health Policies and Program Study, foods available to students are high in fat, sodium, and added sugars (CDC, 2000). Seventy-three percent of middle school students can purchase food or beverages from a vending machine, school store, canteen or snack bar. Soft drinks, sport drinks, fruit that are not 100% juice, high fat salty snacks and baked goods are the most commonly purchased, and 68.4% of middle

schools allow students to buy these items from these venues during the lunch period.

According to Rosso (2004), skipping breakfast is associated with a higher risk of obesity because it encourages over eating later in the day. Research suggests that not having breakfast can affect adolescent's intellectual performance. It was found that as adolescents get older, they do not consume breakfast; while 92% of children aged 6-11 eat breakfast and only 78% of adolescent's ages 12-19 eat breakfast (CDC, 2006). Furthermore, consumption of a balanced breakfast contributes to enhanced academic performance and improved student behavior (Rosso, 2004). Wu, Rose & Bancroft (2006) found female students were more likely than their male counterpart to skip breakfast.

Physical Activity

Lack of physical activity is another major risk factor in the increasing rates of overweight adolescents. Felton, Saunders, Ward, Dishman, Dowda & Pate (2005), report that "national surveys indicate that fewer than two-thirds of all adolescents report participating in vigorous physical activity on three or more days per week" (p.57). It was also noted that physical activity in African American and Caucasian adolescent girls decline equally during the same period. Another study done by Van Daaken (2005), found that many girls dropped physical education as soon as the required credits were met. It was further revealed that physical education was not a positive experience for some. Many of the girls felt harassed by both peers and teachers due to their body size and athletic ability. Wu, Rose & Bancroft (2006) found 25.1% of students were active in physical education class 5 days a week and boys were more active than girls.

Adolescents are spending more time in sedentary activities such as watching television, playing computer games and surfing the internet. Kaiser Family Foundation's

study (as cited in Quarry-Horn, Evans & Kerrigan, 2003), indicated that “outside of school, adolescents spend more than 38 hours each week using electronic media; furthermore, there is evidence of a direct relationship between the amount of time spent watching television and obesity” (p.197). Total calorie intake increases with the amount of time spent watching television and length of viewing time is associated with greater snacking.

A study by Robinson (2003), found that Planet Health, a school-based intervention, decreased television viewing, increased physical activity and healthful eating habits. Physical activity is essential for health. According to Gabbard (2001), adolescents must be educated about the need to be physically active and the importance of being physically active helps improve overall physical health. In many school districts, physical education has been decreased in order to promote academic courses. (“Let’s Get Moving,” 2005), reports “even in these times of budgetary constraints, it is important that schools offer quality physical education for youth during the day. Many schools have decreased or cut out physical education programs. However, many school still maintain competitive athletic programs.” (p. 310). All students need an opportunity to participate in physical activities.

Diabetes Mellitus

Adolescent obesity can lead to a multisystem disease with potentially devastating consequences such as diabetes mellitus. The occurrence of type 2 diabetes mellitus in adolescents is exploding at an epidemic rate (ADA, 2000). Many are not aware of the condition and its life threatening complications. Arslanian, 1999, (as cited in Quarry-Horn, Evans & Kerrigan, 2003), states “the adolescents age group demonstrates the

fastest growing increase in newly diagnosed cases of type 2 diabetes mellitus with a mean age at diagnosis of 13.5 years” (p.196).

Risk factors for the development of type 2 diabetes mellitus in adolescents include genetic predisposition, ethnicity, pubertal age, and obesity. Minority groups such as African American and Hispanic youths are at higher risk (Evert, 2001, Ebbeling, Pawlak & Ludwig, 2002). Type 2 diabetes mellitus is considered to be the most serious complication of obesity (Ebbeling, Pawlak & Ludwig, 2002).

There appears to be a link between the prevalence of childhood obesity and the rising incidence of type 2 diabetes mellitus in adolescents; it was also noted that adolescents diagnosed with type 2 diabetes mellitus, were overweight and had a family history of diabetes (Ogden et al., 2002). The risk of developing diabetes mellitus doubles for every 20% increase above the ideal body weight. Population studies found that for every 1-kg gain in mean weight there is a 4.5% increase in this risk; an estimate 85% of children with type 2 diabetes mellitus are overweight or obese at diagnosis (Evert, 2001). Type 2 diabetes mellitus has become a major health concern for adolescents. Those at risk for type 2 diabetes mellitus could prevent or delay the onset of this disease through healthy lifestyle changes in their diet and physical activity. The epidemic of type 2 diabetes mellitus among youth appears to parallel the increasing incidence of obesity. The increasing weight problem is due to both unhealthy dietary habits and sedentary lifestyles (ADA, 2000). Rinderknecht and Smith (2002) found 60% of urban Native American boys and 51.3% of urban Native American girls associated diabetes risk with being overweight.

Weight Perception

Overweight and obesity is higher in African American, Hispanic and Native American children and adolescents (American Obesity Association, 2001). Desmond, Price, Gray & O'Connell, 1986, (as cited in Kilpatrick, Ohannessian & Bartholomew, 1999) states "adolescents have difficulty perceiving their actual body weight, almost one-third of adolescents being unable to appropriately classify themselves as thin, normal or heavy" (p.148). Fifty-three percent perceived themselves to be the right weight. In similar studies, it has been noted that adolescent females were more likely than adolescent males to report being overweight and adolescent males are more likely to report themselves as being under weight (Kilpatrick, Ohannessian & Bartholomew, 1999; Wu, Rose & Bancroft, 2006). In a study of urban Native American youth aged 5-18 years, Rinderknecht & Smith (2002) reports 41% of the boys and 61% of the girls were satisfied with their bodies, however, "they chose a thinner silhouette than their current body size and expressed concerns about the body fat around their midsection" (p.322)..

Theoretical Framework

Nola Pender's Health Promotion Model (HPM) emphasizes promoting healthy lifestyles, as well as behavior changes. The HPM is based on some of the following theoretical propositions by Pender, Murdaugh, & Parsons (2002):

Prior behavior and inherited and acquired characteristics influence beliefs, affect, and enactment of health-promoting behavior. Perceived competence, to execute a given behavior increases the likelihood of commitment to action and actual performance of the behavior. When positive emotions or affect, are associated with a behavior, the probability of commitment and action is increased. Situational influence in the external environment can increase, or decrease,

commitment to, or participation, in health-promoting behavior. Commitment to a plan of action is less likely to result in the desired behavior when other actions are more attractive and thus, preferred over the target behavior (¶ 2).

This study was based on the assumption that if 8th graders have basic knowledge about nutritional education and physical activity, they would see a need to establish a healthy lifestyle leading to healthy behaviors; therefore, decreasing the risk of being overweight. In addition, Mauriello, Driskell, Sherman, Johnson, Prochaska and Prochaska, (2006) adds, “approaches targeting entire populations with healthy lifestyle messages serve as primary, secondary, and tertiary prevention by educating all students about the healthy behaviors, and encouraging behavior change towards the healthy behaviors” (p. 270).

Nutrition and physical activity are the health behaviors that are the focus of this study. Nutrition will be defined as food consumed within the past seven days and physical activity refers to independent physical activity such as exercising, participating in sports, and physical education at school. Pender’s HPM, demonstrates that middle school age is the key to change health behaviors.

Methodology

Sample and Setting

This research study used a descriptive, non-experimental design with a convenience sample of thirty-seven middle school selected as critical population 8th grade minority adolescents attending a chartered urban K-8th grade school in Northern California.

This school incorporates the national nutrition 5 A Day for Better Health program. This program offers weekly nutrition and fitness class. The students learn to make healthy choices from the food pyramid, including learning to prepare healthy nutritional

dishes. They are engaged in exercising for 50 minutes during physical education class 2 times a week. There are also outings to the East Bay Regional Parks for hiking in addition to walking tours around the surrounding neighborhood. The 5 a Day Program supplied the students with pedometers, cookbooks, educational materials, and handouts.

Procedure

The participating school principal, school nutritional coordinator, and the San Jose State University Human Subject-Institutional Review Boards approved the study. On day one, the primary researcher attended the 8th grade health class and briefly explained the purpose of the study. The primary researcher distributed an informational letter along with 2 copies of the parental informed consent, one for the parents to sign and return to the primary researcher; the second copy for the parents to keep. In addition, a return envelope and directions for returning the signed consent was given. The parents were to sign the informed consent, then place it into the return envelope. Once sealed, the parent signed their name across the seal and the envelope was returned by their child to his /her teacher. On day two and three, the primary researcher returned to the 8th grade health class to collect the signed informed consents for the students. For the students who had forgotten to return the signed informed consent, a 3x5 card reminding the parents to return the signed informed consent was distributed to the students. On day four, the primary researcher collected the remaining signed consents, distributed the survey to all 8th grade students who returned signed consents. Students not participating in the survey, were placed in another classroom for a study period. According to the Principal, this was typically how the students were placed when they did not participate in an activity. Student participation was voluntary and all subject's responses were anonymous.

Instrument

The tool that was used was a nutritional and physical fitness survey from the California Adolescent Nutrition and Fitness Program (CANFit). Permission to use this tool was obtained from the director of the CANFit program. The CANFit nutritional and physical activity survey is a self-assessment tool that was used to assess behavior and knowledge on a one time basis. The survey had 40 items: demographics and self-evaluation of personal nutrition and physical activity behaviors.

Data Analysis

Means, standard deviation, and frequencies were used to summarize and describe the sample. Results did not show any statistical significant difference. Responses to the question regarding body weight were collapsed from five to two categories, with “very underweight” and “slightly overweight” being collapsed into “about the right weight” and “very overweight” collapsed into “slightly overweight”. The categories were collapsed at the recommendation of the statistician due to the low responses in some of the categories. Data analysis was conducted using the SPSS (Statistical Package for the Social Science, Version 13.0).

Results

The convenience sample included 22 females (59.5% of the study population) and 15 males (40.5%). The age range was (78.4%) 13 year olds and (21.6%) 14 year olds. Participants included 15 African American students (29%), 9 Hispanic students (18%), 2 Other students (4%), and 25 Multiethnic students (49%). The total exceeds the number of students due to the fact that 25 (49%) considered themselves as multiethnic (Table 1).

Results from the response frequencies confirm that minority adolescents did not meet

the requirements for the Dietary Guidelines for Americans (Table 2). Over 50 % of the students reported they did not eat the recommended 5-9 servings of fruits and vegetables a day. Twenty-five students (67.6%) reported that they spend more than 30 minutes exercising or playing sports in physical education class (Table 3). Results related to students' weight perception and what they were trying to do about it, shows that 10 students (42%) who perceived themselves as the right weight still were looking to lose weight. Additional results found, only one person reported that they drank a glass or carton of milk a day. Fourteen students (37.8%) reported that they ate breakfast on some days and the same number reported eating at least once at a fast food restaurant during the past week. Eighteen students (48%) reported that they had dinner with their family everyday.

Discussion

Findings from this study suggest that minority adolescents have a greater risk for obesity. Poor dietary habits and lack of physical activity are primary risk factors for being overweight. Findings from this study indicates that over 50% of the students did not consume the daily recommended fruits and vegetables which is consistent with studies of adolescents aged 12-19 not meeting the recommended daily serving of grain products, fruits, and vegetables (CDC, 2000; Malone, 2005). Although less than two-thirds of adolescents participates in vigorous physical activity (Felton, Saunders, Ward, Dishman, Dowda & Pate, 2005), finding from this study demonstrated 67.6% spent more than 30 minutes exercising or playing sports in physical education class. These poor habits will have an impact on their lives. According to Clark & Ferguson (2000), once eating habits and exercise patterns are established during childhood they are

difficult to change. These behaviors are likely to be a part of their lifestyles in the future unless they see a need to change. By providing health education focusing on healthy nutritional education, physical activity, and obesity prevention, minority adolescents may increase their knowledge related to healthier food choices and increased physical activity results in possible behavioral changes. Consistent with the findings of a study on school-based health education that reports it takes 50 hours for changes in behavior to be acknowledged (Malone, 2005). The results indicate that minority adolescents are aware and concerned about their weight. There no statistically significant differences in the results. Findings regarding weight perception revealed 42% of the students in this study perceived themselves being the right weight, but they also wanted to lose weight. The findings of the current study are consistent with previous studies that associated weight perception and weight lost (Kilpatrick, Ohannessian & Bartholomew, 1999; Rinderknecht & Smith 2002; Wu, Rose & Bancroft, 2006). Researchers have concluded that effective strategies for obesity prevention are ones that affect both energy intake and energy expenditure (Dietz and Gortmaker , 2001).

Limitations

There are many limitations related to this study. The small sample size and non-randomization limits the generalization of the results. The height, weight, and BMI were not obtained which would have provided physiological data to compare to the perceptions of weight identified by the study participants. The results were based upon self-report. Because the results of multi-ethnicity was high, the demographic section should have a slot for multi-ethnic. Many of the students were not of one ethnic group and results reflect this. It could also be beneficial to include a 24 hour recall in the

nutrition section to get the daily nutritional intake of adolescents. Lastly, the survey can be used as a pre/post evaluation of a health education program for all adolescents, especially those at-risk.

Implications For School Nursing Practice

As leaders in health promotion, school nurses can be advocates for nutritional education and physical activity and its important in obesity prevention. School nurses should assess the need for nutritional education, physical activity, and the lifestyle of all adolescents, especially those at-risk. School nurses should review and implement nutritional education and support physical education programs such as 5 A Day for Better Health and Planet Health. Both of these school-based intervention programs have proven effective and implementing them with minority adolescent groups may provide improved health and healthier lifestyles for at-risk adolescents. School nurses can provide healthy lifestyles information that students, families, and members of the community can use to improve their lifestyles.

Educating students about weight control and body image is an important factor in assisting adolescents to develop healthy perceptions regarding weight norms. Health education needs to start in the elementary school and reinforced throughout the years. Adolescents are exposed to diverse influences including peer pressure. School nurses can influence adolescents by being a positive role model by providing accurate positive healthy information and providing social support for minority adolescents which may result in positive health behaviors.

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Table 1.**Demographic Response (N=37)**

	Characteristic	Respondents	Percentage
1. Gender	Female	22	59.5
	Male	15	40.5
2. Age Group	13 years	29	78.4
	14 years	8	21.6
3. Ethnicity	African American	15	29.0
	Hispanic	9	18.0
	Other	2	4.0
	Multiethnic*	25	49.0

*Total exceeds number of students; some students identified themselves as multiethnic (n=51)

Table 2.**Nutrition Response (N=37)**

Fruit Intake		
Yesterday how many times did you eat...	%	n
0-2 servings	89	33
3 or more servings	11	4
Total	100	37
Raw Vegetable Intake		
Yesterday how many times did you eat...	%	n
0-2 servings	94.6	35
3 or more servings	5.4	2
Total	100	37
Cooked Vegetable Intake		
Yesterday how many times did you eat...	%	n
0-2 servings	98	36
3 or more servings	2	1
Total	100	37

Table 3.**Physical Activity Response (N=37)**

Time spent exercising or playing sports during physical education class		
Minutes	%	n
Less than 10	2.7	1
10 to 20	13.5	5
21-30	16.2	6
More than 30	67.6	25
Total	100.0	37

Minority Adolescents at Risk for Obesity: Health Behaviors and Perceptions

Presented to
The Faculty of School of Nursing
San Jose State University
In Partial Fulfillment of the
Requirements for the Degree Master of Science
by
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Introduction

- Interest in obesity, nutrition, and physical activity in the adolescent population
- As a school nurse for an inner-city Chartered School obesity was identified as a prevalent health problem among the adolescents
- Knowledge level of adolescents

The Problem

- Gaps consuming grain products, vegetables & fruits (Malone, 2005)
- Less than 2/3 of adolescents participate in vigorous physical activity (Felton, Saunders, Ward, Dishman, Dowda & Pate, 2005)

The Problem

- 17% of children & adolescents are overweight (CDC, 2006)
- Obese children & adolescents are more likely to become obese adults (AHA, 2006)
- Obesity can result in hypertension, type 2 diabetes, cardiovascular disease & stroke (Ebbeling, Pawlak & Ludwig, 2002)

Literature Review

- Overweight & obesity is higher in African American, Hispanic, and Native American (American Obesity Association, 2001)
- The Healthy People 2010 goal, decrease the rate to 5% (USDHHS, 2001)
- Middle school 7-8th graders are important times to improve health behaviors (Frenn & Malin, 2003)
- Multifaceted school programs with CDC guidelines were effective in preventing obesity (Veugelers & Fitzgerald, 2005)

Theoretical Framework

- This study was based on the assumption that if 8th graders have basic knowledge about nutrition and physical activity, they would see a need to establish a healthy lifestyle leading to healthy behaviors; therefore, decreasing the risk of being overweight
- Nola Pender's Health Promotion Model emphasizes promoting healthy lifestyles, as well as behavior changes (Pender, 1996)
- Taking a look at where they are now, an 8th grader can set a goal to change a particular behavior

Research Questions

- What are the health behaviors related to nutrition and physical activity among minority 8th graders?
- What are the differences in response regarding weight perception among minority 8th graders?

Methodology

- Quantitative, non-experimental
- Convenience sample of middle school adolescents
- SJSU IRB approval
- California Adolescent Nutritional & Physical Activity Survey (CANFit), English Version
- Researcher distributed the (CANFit) Nutritional & Physical Activity Survey to volunteer participants after consent was obtained

Data Analysis.....

- Means, Standard Deviation, and Frequencies were used for this Quantitative study
- Crosstabulation of weight perception and perceived weight goal with the assistance of a statistician

Results...

Table 1.

Demographic Response (n = 37)

	Characteristic	Respondents	Percentage
1. Gender	Female	22	59.5
	Male	15	40.5
2. Age Group	13 years	29	78.4
	14 years	8	21.6
3. Ethnicity	African American	15	29.0
	Hispanic	9	18.0
	Other	2	4.0
	Multiracial*	25	49.0

* Total exceeds number of students; some students identified themselves as multiracial (n=11)

Results...

- Over 50% did not consume the daily recommended fruits & vegetables
- 67.6% spent >30minutes exercising or playing sports in physical education class
- 42% perceived themselves about the right weight, but were looking to lose weight

Nutrition Response

Table 2. Fruit Intake (n=37)		
Yesterday how many times did you eat...	%	n
0-2 servings	89	33
3 or more servings	11	4
Total	100	37
Raw Vegetable Intake (n=37)		
Yesterday how many times did you eat...	%	n
0-2 servings	94.6	35
3 or more servings	5.4	2
Total	100	37
Cooked Vegetable Intake (n=37)		
Yesterday how many times did you eat...	%	n
0-2 servings	98	36
3 or more servings	2	1
Total	100	37

Physical Activity Response

Table 3
Time spent exercising or playing sports during physical education class (n=37)

Minutes	%	n
Less than 10	2.7	1
10 to 20	13.5	5
21-30	16.2	6
More than 30	67.6	25
Total	100.0	37

Crosstabulation: Perceived Weight and Perceived Weight Goal

Table 4
Perceived Weight Goal

Perceived Weight	Perceived Weight Goal				Total					
	1. LOSE WEIGHT	2. GAIN WEIGHT	3. STAY THE SAME WEIGHT	4. NOT TRYING ANYTHING						
	%	n	%	n	%	n				
About The Right Weight	42	10	5	2	33	8	17	4	100	24
Slightly Overweight	-	0	0	0	0	0	0	0	0	0
Total	62	23	5	2	23	8	10	4	100	37

Limitations...

- Small, non-random sample
- Did not have height & weight
- Did not have BMI
- May have not responded truthfully
- Survey used on a one-time basis

School Nurse Implications...

- Assess nutrition, exercise, lifestyle of at-risk students in 8th grade
- Review and implement nutritional education and support Physical Education programs
- Provide direct classroom education, can train other certified staff members to promote healthy lifestyles through health education for students, families, and the community
- Advocate for nutrition and physical activity and its importance in obesity prevention