Walden University

COLLEGE OF HEALTH SCIENCES

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Cynthia Soraoka

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Abstract

Insights into the Decision-Making Process of Adolescent Food Choice

by

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MBA, Pepperdine University, 1981

MSW, University of Hawai'i at Manoa, 1976

BA, Springfield College, 1973

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Health Promotion and Education

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Abstract

The incidence of obesity among adolescents has increased over the past 30 years leading to an increase in chronic disease, such as type 2 diabetes, in this age group. Food choice is a part of the weight management equation. The purpose of this study was to explore, describe, and understand factors that influence adolescent food choice decisions, in particular consumption of fruits and vegetables, to give insight into adolescents' decision-making process and to influence changes to school curriculum and health promotion programs. The results of this study were analyzed within the framework of cognitive development theories by Bandura, Erikson, Kohlberg, and Piaget. A qualitative, exploratory study design was employed using a random, purposeful sample of 32 adolescents, from 4 different ethnic groups, in Grades 9 through 12 at a high school in California. Individual interviews were conducted using guiding questions. Emergent themes were extracted and categorized from interview data into a hierarchy of internal and external factors that influence adolescent food choice. The most influential external factors identified by the participants were family, especially the female head of household, and availability of food when they were hungry. Adolescent decision making and food choice was not influenced by ethnicity, age, grade level, or GPA. Family, availability, taste, and friends were influences on food choice decisions. This study may lead to positive social change by providing guidance to health education curriculum developers in creating nutrition curriculum for the Health Science 1 class at this high school, a useful model to encourage more healthy food choices in the school cafeteria, as well as incentives for more nutrition education in other high schools in the local school district.

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Chapter 1: Introduction to the Study

Background

Obesity among adolescents is an epidemic in the United States (Centers for Disease Control [CDC], 2006). Adolescent obesity is linked to higher rates of type 2 diabetes, hypertension, and social and emotional problems leading to increased morbidity, mortality, and medical costs (CDC, 2006). Schools can play a role in providing nutritious foods for students to purchase during breakfast and lunch (American Medical Association [AMA], 2004). The AMA (2004) recommended creating a health advocacy council at schools and implementing standards for a la carte items in school cafeterias. Secondary recommendations included cultural sensitivity in nutrition education and foods offered at school cafeterias (AMA, 2004). Decisions and behaviors affecting decisions about what adolescents eat may have an effect on the increase in obesity rates in the United States (Merrick, Birnbaum, Kandel, & Morad, 2004).

Katz et al. (2005) reviewed literature to determine public health strategies to prevent and control overweight and obesity in school settings. Of 44 studies, only 10 met the criteria for successful intervention at reducing or preventing obesity in school settings. Two of the most common factors in successful intervention were eating nutritional foods and physical activity (Katz et al., 2005). Participants who focused on physical activity or behavior factors without healthy food choice did not result in reduction or prevention of obesity (Katz et al., 2005). Sharma (2006) reviewed population-based research studies to determine what interventions were effective in obesity prevention and reduction programs for children and adolescents at school sites.

Sharma found that the main interventions to reduce or prevent obesity at all age levels were physical activity and nutrition behaviors (food selection). Based on an analysis of the literature, Sharma recommended that schools provide nutritious meals to promote healthy eating habits, including increased fruit and vegetable consumption. In addition, Doak, Vissher, Renders, and Seidell (2006) recommended that intervention programs target these factors: (a) ethnicity, age, and gender; (b) physical or social environment including food selection in school cafeterias; and (c) make behavior changes sustainable by incorporating interventions in school curriculum.

Food choice of adolescents is listed as the primary contributing factor to obesity in this age group (The Obesity Society, 2009). Muñoz, Krebs-Smith**,** Ballard-Barbash, and Cleveland (1997) studied the eating habits of 3,307 children ages 2 to 19 using data from the US Department of Agriculture's 1989-1991 Continuing Surveys of Food Intakes by Individuals. Muñoz et al. concluded less than 30% of study participants met nutritional recommendations for fruit and vegetable consumption. Rasmussen et al. (2006) conducted a meta-analysis of 98 articles on children and adolescent consumption of fruits and vegetables. Rasmussen et al. found that factors of gender, ethnicity, socioeconomic position, preferences, parental intake, and home availability/accessibility to analyze fruit and vegetable consumption influenced whether or not adolescents consumed vegetables and fruits. Schools need to provide healthy food choices to reduce obesity in adolescents, such as fruits and vegetables (Trust for America's Health, 2009).

While researchers have studied obesity and weight gain in adolescents, many of these studies did not include a variety of ethnicities in the study populations. There is

limited diversity in terms of participant ethnicity, and most studies primarily include Caucasian populations (Stuart, Broome, Smith, & Weaver, 2005). Studies also lack inclusion of individual adolescent food preferences, family, peer and cultural influences, accessibility to fast food, and food in the school setting.

In this study, I determined what healthy food, including fruits and vegetables, adolescents will eat to provide feedback to the school district's nutrition services that provide breakfast and lunch at the high school. Community members of Dozier-Libbey Medical High School (DLMHS) were concerned about the wellness of students. DLMHS formed a Wellness Council in April 2009 with a small grant from the California Wellness Foundation. The council was concerned about the lack of fruit and vegetable consumption of the student population. A task of the DLMHS Wellness Council was to determine how to increase fruit and vegetable consumption among the students who purchase a school lunch. In this study, I focused on decision-making factors that influence adolescent consumption of fruits and vegetables eaten during lunch from a school cafeteria. I also evaluated ways Health Science 1 curriculum may need to be modified to promote and educate students on health benefits of consuming fruits and vegetables. I addressed nutritional behaviors by asking students how they choose food to eat, including fruits and vegetables, served at school. I included boys and girls and multiple ethnicities in the study population. A detailed discussion of literature associated with adolescent decision-making and food choice is discussed in Chapter 2.

Problem Statement

The DLMHS Wellness Council has been tasked to determine how to increase fruit and vegetable consumption among students attending the school. Understanding the decision-making process of students as to why they do, or do not, eat fruits and vegetables from the school cafeteria, or in lunches brought from home, will help educators and nutritionists at the school aid students in making better food choices. Conducting individual interviews during this study to ask students how they would increase their consumption of fruits and vegetables may give the council ideas on how to improve consumption. Based on data gathered in this study, the Health Science 1 nutrition curriculum unit may be modified to more effectively educate and promote the health benefits of fruits and vegetables.

Nature of the Study

Qualitative research is systematic in discovery and allows participants to express data in their own words and images (Ulin, Robinson, & Tolley, 2005). A qualitative research study consists of multiple individuals who experience the same phenomenon (Creswell, 2003). I used qualitative research to develop a holistic understanding (Blumenthal & DiClemente, 2004) of the decision-making practices of adolescents enrolled in DLMHS. Interviewing students about food choice pertaining to fruits and vegetables at purchased at DLMHS in the cafeteria may develop a holistic understanding.

Participants in this phenomenological study were aged 14 to 17 in the ninth through 12th grade classes attending the same high school. To gather data, interviews were conducted as the form of collection data. Individual interviews of ninth through

12th graders who volunteered for the study were conducted over a 4-week period. Detailed methodology is discussed further in Chapter 3.

Research Questions

The overall research question for this study is the following: What can adolescents tell us about their decision-making process about food choice and how they use nutrition knowledge to increase consumption of fruits and vegetables?

Subquestions were

1. How do students apply nutrition knowledge learned in Health Science 1 to the decision-making process choosing to eat fruits and vegetables?
2. What sources of information are persuasive in teaching the importance of eating fruits and vegetables?
3. What factors influence adolescents' decisions to eat fruits and vegetables, or not?
4. What recommendations can adolescents offer to make more fruit and vegetable choices available in the school cafeteria that would encourage them to eat more fruits and vegetables?

Theoretical frameworks for answering these questions are discussed in Chapter 2.

Purpose of the Study

The purpose of this study was to explore, describe, and understand the decision-making process of ninth through 12th graders to determine factors influencing the purchase of fruits and vegetables during lunch at DLMHS. A second purpose of this study was to determine whether the nutrition unit in the Health Science 1 curriculum

affects a student's decision to eat fruits and vegetables. The third purpose of this study was to explore with students ways to increase purchases and consumption of fruits and vegetables from the school cafeteria during lunch, or food brought from home for lunch. In previous studies, adolescents noted availability and taste (Neumark-Sztainer et al., 2003), and convenience (Neumark-Sztainer et al., 1999) as considerations when choosing food to eat.

Data from this study were shared with the DLMHS Wellness Council and school district nutrition services personnel to discuss possible changes to menu items to encourage students to eat fruits and vegetables. Results were shared with teachers who teach the Health Science 1 course, and all teachers at the school who assist in curriculum development for this course. A presentation was made to the school principal, superintendent, and elected school board. Data from this study may influence menu changes and affect social change at DLMHS and the other two high schools in the school district. Modifications to school meal menus may promote greater consumption of fruits and vegetables, bringing more fruits and vegetables in homemade lunches, and modification of Health Science 1 curriculum to educate students appropriately on the importance of consuming fruits and vegetables as part of a healthy diet.

Definition of Terms

Adolescent: An adolescent was a young adult between the ages of 14 to 17 years old in the ninth, 10th, and 11th grades.

Choice: The voluntary and deliberate selection of a food item from a selection of two or more.

Decision-making: The thought process involved in making a decision by an adolescent about food choice.

Free lunch: Family at 130% of poverty level. Public education students that are eligible for free lunch are served by school cafeterias.

Reduced lunch: Family at 185% of poverty level. Public education students eligible for reduced price on lunch are serviced by school cafeterias.

Assumptions

This study was based on three assumptions. The first was that adolescents aged 14 to 17 are mentally and emotionally capable of making decisions concerning their choice of food. The second assumption was that adolescents were honest and truthful in answering study questions during interview sessions. A third assumption was that this age group has a working definition of what constitutes fruits and vegetables.

Limitations

A limitation of this study was the small number of students being interviewed and the study being conducted at a medical magnet high school in one school district in California. Although admission to the medical magnet school was via lottery, students or parents must submit an application to be a part of the random drawing. Most students apply to the medical magnet school, or their parents apply for them, because they are considering a career in health care. The study may not represent a cross-section of the school population due to the magnet high school application process. Results of this study may not be applicable to adolescents in a different school, geographical location, or a population with difference ethnic characteristics. Another limitation was that I may have

known the students being interviewed, having taught some of them in a medical terminology class during freshman year.

Some interview participants may have felt uncomfortable expressing their eating habits to an adult since this may be considered personal and private behavior. Whitehead and Biddle (2008) observed that adolescent girls felt uncomfortable when asked to share their physical activity level. Data self-reported during the interview process may not be accurate due to peer pressure to please me by giving me what they think was the correct answer to interview questions.

Some researchers have stated that adolescents are incapable of making decisions and as minors they have no legal or practical influence about what they eat. Policy-makers and school administrators may disagree with this study, stating adults need to control what children purchase in school-run cafeterias based on federal- and state-mandated guidelines to receive public funds. Parents and other family members may disagree with this study by stating children need to be taught what to eat at home. Educators and members of the medical profession may believe that instructing adolescents on healthy food choice is too late to have an impact on decisions that prevent or reduce obesity. These same professionals may state that healthy food choice decisions are the parents' responsibility beginning with babies and continuing through the adolescent years. However, with the current epidemic of obesity in the United States, it may be argued that allowing parents and adults to continue to make food choice decisions for adolescents is not working to reduce or prevent obesity.

Significance of the Study

This study added to the body of literature about adolescent decision-making and food choice. I incorporated a more diverse ethnic representation in this study than what was included in previous studies. Most studies about adolescents and decision-making are limited to tobacco, sexual behavior, and contraception. This study will provide a different dimension to adolescent decision-making using food choice. Determining how adolescents decide to eat fruits and vegetables may result in positive social change by helping educators and nutritionists understand how to prevent and reduce obesity. Cafeteria menus at DLMHS, and the two other comprehensive high schools in the district, may be changed to offer different types or more fruits and vegetables to increase consumption. Health Science 1 curriculum at DLMHS may be changed to influence student behavior in choosing to eat more fruits and vegetables.

Summary

Obesity in children and adolescents continues to plague the United States and is now at epidemic proportions. Additional research to determine behaviors that will reverse this trend are needed to prevent and reduce obesity among adolescents in order to prevent future morbidity, early mortality, and health care costs associated with obesity related diseases. Understanding the decision-making process of adolescents about food choice may give insight into preventing and reducing obesity in this age group now and into their adult years. In this qualitative study, I explored the decision-making process of adolescent selection of fruits and vegetables.

Chapter 2 includes literature and theories on adolescent decision-making that affect food choice. Decision-making of adolescents regarding life-changing situations similar to food choice (e.g., sexual behavior) are reviewed and applied to food choice behavior. Chapter 2 includes theoretical frameworks and the relationships of developmental theories by Bandura, Erikson, Kohlberg, and Piaget to adolescent decision-making and food choice. Chapter 3 will include the qualitative research design based on the research questions. The researcher's role and procedures for accessing participants, and ethical considerations are discussed in more detail in Chapter 3. Study design including selection of participants, data collection, data analysis procedures, and any relation to a larger study are presented. Chapter 4 will include the study results and Chapter 5 will include researcher reflections and suggestions for future research.

Chapter 2: Literature Review

Introduction

Adolescent decision-making results in both positive and detrimental outcomes. In some ways, adolescents are going through a development stage similar to 2-year-olds. Adolescents and 2-year-olds demonstrate behaviors with a need for independence, knowing there is still a need for dependence on adults to meet some of their needs. Adolescents have the added complication of hormone maturity affecting their growth both physically and cognitively. Students seem to move seamlessly from logical to nonlogical thinking and then revert to egocentric thinking characterized by 2-year-old cognitive behavior. There are some parallels between an adolescent's decision-making and independence-seeking behaviors and developmental stages characterized by 2-year-olds. These behaviors may influence adolescent food choice.

In this chapter, I review, analyze, and synthesize cognitive development theory to gain an understanding of the process of decision-making and relate these theories to current literature about adolescent decision-making. Potential themes in qualitative studies related to adolescent decision-making and food choice are explored. Literature related to the research topic using nonquantitative methods is explored. All literature reviewed was from accepted peer-reviewed journals.

Literature was searched by using Walden University online databases for peer-reviewed studies (conducted within the last 5 years) on adolescent decision-making related to risky behaviors engaged by adolescents related to health status. Key words used were *adolescent*, *teenager*, *decision-making*, *eating*, *food*, *alcohol*, *smoking*, *birth*

control, *contraception*, *sex*, and *obesity*. Literature about adolescent decisions regarding sex, smoking, alcohol consumption, and birth control were reviewed since these behaviors involve decision-making strategies that may be applied to food choice, and there were a limited number of peer-reviewed studies about adolescent food choice.

Researchers who discussed adolescent decision-making related to health education and promotion frequently relate to sexual decision of adolescents. External and internal factors influence decisions made by adolescents. Adolescence is characterized by rapidly changing physical, social, and moral environments in the journey to adulthood. Integrating these factors into health decisions was demonstrated by applying cognitive development theories to specific research articles to determine conclusions and gaps in literature.

Adolescent Decision-Making and Food Choice

Baker and Brownell (2003) researched eating and physical activity decisions of 279 boys and girls from one parochial high school. The theory of planned behavior (TPB) was used as an outcome predictor (Baker & Brownell, 2003). Based on self-reported surveys administered to 13- to 17-year-olds to determine attitudes, beliefs and norms, Baker and Brownell found that parents and peers had little or no effect on eating or exercise habits. Baker and Brownell found that girls had a slightly more positive attitude about exercise than boys did but social norms had little or no effect on attitudes about eating and exercise habits. However, according to Bandura (1977), attitudes and norms of these students, their peers, and parents alone may not be accurate predictors of behavior. Including response consequences with verbal and imagined symbols, such as pictures of

obese adolescents, plastic fat students can touch and feel, or a video on how obese adolescents are treated, may be better motivators of decisions to each healthy and exercise. Although Kohlberg (1984) agreed with Bandura (1977) that external environmental influences have an effect on adolescent decision-making, Kohlberg believed that decision outcomes are based on what hierarchical developmental and moral judgment stage a child is in. Baker and Brownell did not incorporate hierarchical moral judgment or developmental stages into explanation of their outcomes on eating and exercise habits of adolescents. Applying Kohlberg's stages of moral development to the 14- to 17-year-old age range in this study might show how moral judgment affects decisions about eating and exercise.

Moving from concrete to abstract thinking in adolescence affects adolescent decisions (Piaget, 1978). Combining Bandura's (1977) concept of imagined symbols and Piaget's (1978) theory that adolescents comprehend abstract concepts might lead to more effective health education and promotion program showing how decisions influence eating and exercise habits. Erikson (1980) believed that school affects adolescents by observing respected adults and getting positive feedback from those adults. Bandura and Erikson agreed that modeling has an effect on decision-making behavior. Respected teachers at the school who model good eating habits and exercise, and who are not obese, may have a positive influence on adolescent decision-making about eating and exercise.

Byrnes (2002) suggested that adolescents use a logical four-step process of decision-making that requires multidimensional thinking, which can be disrupted by emotions and impulsiveness. Aging, life experience, and knowledge acquisition over time

can lead to better decisions by adults than adolescents (Byrnes, 2002). Erickson (1980), Piaget (1978), and Kohlberg (1984) stated that aging is a process of going through physiological and cognitive stages and as people age, they create better decisions. Bandura (1977) found that life experiences are a contributor to better decision-making behavior and decisions are less likely to be disrupted by emotions and impulsiveness. Bandura and Kohlberg argued that the type of experience contributes to decision-making. Adolescents exposed to bad decisions and decision-making skills might continue to make bad decisions in adulthood, no matter how much life experience or knowledge they acquire. For example, if an adolescent lives in a home where a respected adult smokes cigarettes, smoking cigarettes may not seem like a bad decision even though the child is given information at school or through the media about how bad it is for his or her health.

Cargo, Grams, Ottoson, Ward, and Green (2003) developed a framework for adolescents to participate in health education and promotion activities. Cargo et al. found that when an adults collaborated with adolescents and acted as a caring mentor, healthier behaviors ensued. Bandura (1977) theorized that people are not born with repertoires of behavior, but learn them through modeling, which includes attention, retention, motor reproduction, and motivation. Erikson (1980) believed that adolescents gains self-esteem by modeling behaviors of adults. Exposure to a model may change behavior over time (Bandura, 1977).

Change in health behaviors in adolescents may be incremental with the interaction of caring adults (Cargo et al., 2003). Kohlberg (1984) and Piaget (1978) described behavioral change in stages. A crisis stage leads to different capacity development

(Erikson, 1980). By interacting with adults modeling good health behavior, adolescents could go through one or several crisis stages to change their behavior based on new decision-making techniques. Empowering adolescents by giving them support and feedback may assist them in developing healthier behaviors (Cargo et al., 2003). Erikson described ego identity as a culmination of successive crisis stage in social context. By providing adolescents with support, knowledge, and empowerment, Cargo et.al. (2003) determined that these characteristics contributed to a healthy ego identity, leading to healthier decisions about health behavior, such as food choice.

Neumark-Sztainer et al. (1999) conducted focus groups with seventh and 10th graders to explore reasons they selected certain foods. In a qualitative, exploratory study, Neumark-Sztainer et al. identified factors such as taste, convenience, parental influence, and availability as primary and secondary factors associated with food selection. Neumark-Sztainer et al. categorized factors affecting food choice into three levels: (a) most important (hunger/food cravings, appeal of food, time and convenience); (b) factors of secondary importance (availability, parent influence, perceived benefits, and the situation); and (c) factors of less importance (mood, body image, habit, cost, media, and vegetarian life style. This study is 13-years-old and took place when certain external influences, such as the Internet, Myspace.com, MP3 players, and cell phones were not as accessible to teenagers. These external factors were not mentioned in their study. There was no conceptual or theoretical framework for this study.

Similarly, Wu et al. (2009) conducted a study of eating habits of Southern Appalachian teens focused on external influences, such as teasing about weight by peers,

body image, and cognitive intent to eat healthy foods. Wu et al. mentioned the theory of planned behavior (TPB) as a conceptual framework for the study, yet did not relate the findings to the TPB. Wu et al. concluded that 29.8% of study participants intended to eat healthy foods in the 2 weeks postquestionnaire, with no follow-up to determine if participants acted on their intentions. Wu et al. conducted the study with 13- to 17-year-olds. Adolescents ages 16 to 17 have advanced cognitive abilities and may not be compared to decision-making abilities of adolescents ages 13 to 15.

Ackard et al. (2002) studied correlations between overeating and sociodemographic factors. Ackard et al. could not determine if any factor studied, such as gender or ethnicity, caused overeating. Overeating was associated with compromised psychological health related to body image (Ackard et al., 2002). Neumark-Sztainer et al. (2003) noted that most studies regarding obesity in adolescents involved primarily Caucasian populations in middle-income populations. Neumark-Sztainer et al. proposed to test a model based on social cognitive theory to determine influences of socioenvironmental and personal factors on weight-control behaviors of adolescents ages 13 to 17. I used the same population described in Neumark-Sztainer et al., a qualitative study exploring factors that influence adolescent food choices including middle and high school participants.

Neumark-Sztainer et al. (2003) surveyed 4,746 students in the Project EAT program in Minneapolis, MN. Neumark-Sztainer et al. found an association with weight-body image and an increase in unhealthy weight-control behaviors such as binge dieting, bulimia, and anorexia. Family and peer socioenvironmental influences had some effect

on weight-control behaviors but did not have as strong a correlation as personal weight-body image perceptions of the study participants (Neumark-Sztainer et al., 2003). Weight-body image may be an internal factor in how adolescents decide what food to eat. Conducting interviews with adolescents as part of this study may confirm weight-body image as one factor in food selection.

Masheb and Grilo (2006) conducted a study with adults to determine via questionnaire if emotional triggers were associated with binge eating disorder (BED). Masheb and Grilo identified emotions of anxiety, sadness, loneliness, tiredness, anger and happiness as potential BED triggers for the test survey instrument in this study. Masheb and Grilo found that emotional eating was associated with an increase in binge eating. The research did not include adolescents. Exploration of emotions associated with overeating are one factor that many influence food choice decisions of adolescents in this study.

Stice, Spoor, Bohan, Velduizen, and Small (2008) conducted a study where magnetic resonance imaging (MRI) scans were taken of obese and lean adolescents to determine if there were different brain patterns related to anticipated food consumption. MRIs and body mass index (BMI) were done on 44 adolescent girls with a mean age of 15.7 years, of which 86% were Caucasian to measure dopamine levels and brain response to drinking or anticipation of drinking a chocolate milkshake (Stice et al., 2008). In the MRI results, there was less dopamine, a neurotransmitter and hormone, generation in girls with a greater BMI. Stice et al. found girls with a greater BMI and who were considered obese demonstrated greater brain sensory pleasure anticipating and drinking

the chocolate milkshake. Stice et al. could not determine whether the pleasure response was learned over years of overeating, or if this response was due to biological factors developed early in life. If the eating pleasure response is due to biological factors developed early on, decisions adolescents make about selecting certain foods could be influenced by brain chemistry and Piaget's (1978) theory of internal, physiological developmental phases may be more relevant than Bandura (1977) or Erikson's (1980) theories involving social, external influences on behavior such as food selection.

Snoek, Van Strien, Janssens, and Engels (2008) studied the relationship between BMI and eating patterns. Snoek et al. (2008) studied siblings in 404 Dutch families over a 3-year period. Snoek et al. concluded that restrained eating, or dieting, were predicted by a BMI of overweight or obese, but a high BMI did not result in weight loss. Several factors contributing to these results were (a) the questionnaires were self-reporting, (b) participants may have reported restrained eating but not at a level low enough to lose weight, or (c) food intake was reduced but not consistently (Snoek et al., 2008). Because this study was conducted with siblings, they may have influenced the results. This was an ethnically homogenous study and did not take into account factors in food choice for the participants.

Scharoun-Lee, Adair, Kaufman, and Gordon-Larsen (2009) studied 11,250 young adults with a mean age of 21.9 years with data from the National Longitudinal Study of Adolescents Health (Wave III: 2000-2001). Scharoun-Lee et al. applied quantitative methods to the data to determine if four factors: (a) social advantage, (b) schooling, (c) employment, and (d) economic hardship had an effect on obesity rates had an effect on

obesity rates. Scharoun-Lee et al. found that adolescents who transitioned to postsecondary education, at all ethnic levels, had a slower increase in obesity as they aged. Based on the correlation of reduced obesity and postsecondary education from research by Scharoun-Lee et al. (2009), a higher GPA may lead to healthier eating habits. If this was the case, perhaps providing intervention programs for adolescents in high school to improve GPA that lead to college acceptance will reduce and prevent obesity in adolescence into adulthood.

Physical environment at school may play a role in an adolescent's decision to choose certain foods. French, Story, Fulkerson, and Gerlach (2003) described the effect of a la carte food, vending machines, and food policies and practices at 20, secondary schools in the Minneapolis-St. Paul, Minnesota area. Although DLMHS does not have vending machines, a la carte food is offered, making this study relevant. French et al. (2003) found fruits and vegetables made up only 4.5% of a la carte items in 17 of the 20 school studied. This was a concern since 35% to 40% of purchases were from a la carte stands. Most of the food available a la carte was high in fat, salt, and sugar (French et al., 2003). A la carte items are not subject to mandated federal nutrition guidelines for meals served in the cafeteria. French et al. suggested further research to explore whether food in the school environment is associated with student food choice. In my study, I explored how students decide what food to eat, which will add to the results of French et al.'s study.

In analyzing these articles and comparing them to theories of cognitive development, the conclusion is that there is no one theory contributing to decision-

making practices of adolescents. Most of the researchers studied adolescent decision-making related to sexual issues, such as deciding to have sexual intercourse or prevention of STD's, and applied one or two concepts from these theories. More studies need to be completed assessing adolescent decision-making behaviors related to other health decisions besides sex and STD's. With concerns about obesity and a rise in type 2 diabetes, studies are warranted to determine an adolescent's decision-making behavior regarding eating and exercise habits. No researchers within the past 5 years have examined how adolescents make decisions about food choice.

Since Bandura (1977), Erikson (1980), Kohlberg (1984), and Piaget (1978) developed their theories, mass media and the Internet have become common modes of communication for adolescents. E-mail, cell phones, chat rooms, Myspace.com, Youtube.com, and iPods did not exist when these theorists studied cognitive development and human behavior. Biological and psychological theories of stage development in humans do not change. Current and future studies need to include technological changes in environmental influences on adolescent decision-making. Face-to-face contacts with family and peers may not influence adolescents as heavily as in the past, but may be replaced by contact with significant others through mass communication (e.g., cell phones, Myspace.com). In this study, I explored how technology influences adolescent decisions about food choice.

Several studies involving adolescents and food selection determined decisions about food selection involved internal and external influences. Internal influences based on self-esteem (self-image) and hunger determined food choice. External influences were

peer opinion (positive and negative), cost of food, parental influence, eating situation (alone or with someone else), time and convenience of food preparation, and food availability. Most of these researchers focused on Caucasian populations and did not factor in sociodemographic or educational factors. In this study, I employed an ethnically diverse population to select from for individual interviews.

Adolescent Decision-Making and Sexual Behavior

Chambers and Rew (2003) described how an adolescent female's decision to have sexual intercourse and use contraception can be influenced by conflict theory. Conflict theory of decision-making has several steps that do not occur intuitively in adolescents (Chambers & Rew, 2003). Conflict theory can be used as a decision-making tool for adolescents; however, they must be taught how to use it (Chambers & Rew, 2003). Other factors affecting the use of conflict resolution theory are emotions, pressure to have sexual intercourse, the type of relationship, and social consequences of having or not having sex (Chambers & Rew, 2003). Decisions involve ego strength using individual freedom basing a decision on what is known and what has to be done to get to the next stage (Erikson, 1980). Adolescents go through crises to get from one stage of development to another (Erikson, 1980). Moving from one crisis stage to the next can involve conflict, such as deciding whether to have sexual intercourse and use contraception.

Kohlberg (1984) stated that movement from one stage of development to another involves integrating knowledge from experience. Adolescents deciding to have sexual intercourse who integrate this experience into decision-making may move to a new

cognitive-developmental stage towards adulthood. An adolescent's decision to have sexual intercourse involves interactions between another individual, emotions, and their environment. Kohlberg and Bandura (1977) stated that interaction between people and their environment leads to cognitive change. Kohlberg (1986) believed that this interaction leads to the next stage in development. Bandura believed that it leads to behavioral change. In both theories, the decision to have sexual intercourse, whether or not it advances an adolescent to the next stage of development, is integrated into the thought process.

In deciding whether to engage in sexual intercourse, an adolescent must deal with emotions imposed internally and externally (Chambers & Rew, 2003). Moral judgment in the form of self-critical fear, self-imposed guilt, and fear and guilt about how others will view their decision affects an adolescent's decision to have sexual intercourse (Kohlberg, 1984). Fear of rejection by peers may be more powerful than consequences imposed by adults (Kohlberg, 1984). Adolescent decisions influenced more by interactions to the external environment (Bandura, 1977), where sexual intercourse is accepted, may be more likely to engage in sexual intercourse than those influenced by internal moral judgment (Kohlberg, 1984).

Adolescence is the beginning of experiencing and defining intimacy (Erikson, 1980). At this stage, decisions about sexual intercourse and use of contraception are more common. Commendador (2003) found that older adolescents who understood themselves and how they related to intimacy, made appropriate decisions about delaying conception and using contraception. Adolescents, who do not know their own identity and

understand intimacy, become stuck in self-absorption (Erikson, 1980). Less chronologically mature adolescents may opt for immediate sexual satisfaction instead of weighing the consequences of using contraception staying in the self-absorption stage. Adolescents who know themselves and have goals, yet still want intimacy through sexual intercourse, are more likely to think about and use contraception (Commendador, 2003).

Cothran and White (2002) applied Bandura's (1977) social learning theory to an adolescent's decision to prevent transmission of sexually transmitted diseases (STDs), specifically human papillomavirus (HPV). Adolescence is extended in industrialized societies with postsecondary education delaying adult decision-making skills (Cothran & White, 2002). Self-efficacy is a predictor of future behavior (Cothran & White, 2002). In order to develop self-efficacy, adolescents need to believe in their capabilities to have control over influences that affect achieving a goal (Bandura, 1977). Learning theory and reinforcement theory contribute to awareness of behavioral consequences (Bandura, 1977). Adolescents who know consequences of contracting an STD from unprotected sex, with reinforcement of this from facts, may decide to practice safe sex and are then less likely to contract an STD (Cothran & White, 2002).

Short and Rosenthal (2003) reviewed research to determine developmental and environmental influences on female adolescent decisions to engage in sexual activity. A female adolescent's self-perception, mother's influence, and peer group interaction had the most impact on decisions to have sexual intercourse (Short & Rosenthal, 2003). External threat and fear do not have a positive impact on adolescent decision-making (Kohlberg, 1984). Mothers who communicate honestly with their adolescent daughters

have more impact on delaying sexual activity than those who threaten and use fear (Kohlberg, 1984; Short & Rosenthal, 2003). Short and Rosenthal, Erikson (1980), and Miller (2001) agreed that honest communication from a trusted source has a positive impact on decisions made by adolescents.

Peer group has an effect on an adolescent's decision. Short and Rosenthal (2003) found adolescents in peer groups or more steadily dating an adolescent male that condoned sexual intercourse, were more likely to decide to have sexual intercourse. By continuously interacting with a boyfriend or peer group, reciprocal determinism takes place condoning sexual behavior (Bandura, 1977). Piaget (1978) and Bandura (1977) discussed the influence of environment on adolescent decision-making. Modeling of behavior by peers, in the form of discussion of having sexual intercourse, influences and condones the behavior of members of the peer group to engage in sexual intercourse (Bandura, 1977). If a female adolescent's mother had a baby as a teenager, the adolescent is more likely to model her mother's behavior, being a trusted adult, and have a child as a teenager (Bandura, 1977; Short & Rosenthal, 2003). Adolescents exposed to trusted, adult models such as parents and medical professionals, may be less likely to engage in sexual intercourse at an early age (Bandura, 1970; Miller, 2001; Short & Rosenthal, 2003).

Another factor in delaying an adolescent female's decision to have sexual intercourse was an authoritative parenting style and close supervision by parents (Short & Rosenthal, 2003). Short and Rosenthal's (2003) findings contradict theories of Bandura (1977) and Kohlberg (1984). Bandura theorized that an authoritative style will regulate

behavior and does not reinforce new behaviors. If an adolescent decides not to have sexual intercourse, an authoritative style of parenting may reinforce this behavior. If an adolescent has decided to have sexual intercourse, an authoritative style will not change an adolescent's behavior to refrain from intercourse. Depending on the stage of adolescence, an authoritative style may have the opposite effect.

Adolescent Decision-Making and Media

Chen and Matthews (2003) used ambiguous, situational videos about threats and violence to determine if lower socioeconomic groups would perceive threats and violence greater than those higher socioeconomic groups. College freshman and sophomores were shown the videotapes to determine decision-making behavior by socioeconomic status (Chen & Matthews, 2003). Showing videotapes is a valid tool for measuring decision processes of adolescents through observable responses (Chen & Matthews, 2003). External influences alter behavioral responses (Bandura, 1977). External influences influencing adolescent decisions can be from television, movies and music, and videos or DVDs.

Videos, which can include symbols and modeling behavior, can inform adolescents and influence response consequences to decisions (Bandura, 1977). Response consequences influence decision-making behavior by informing an adolescent of a consequence based on their behavior (Bandura, 1977). By showing situational videos of threats and violence to adolescents, symbols and situational modeling affect the decision to participate in threatening and violent acts. Videos are a powerful tool in using modeling a behavior and then verbalizing it without acting on it (Bandura, 1977).

Decision-making by adolescents may be affected by using mass media to communicate appropriate and inappropriate social behavior (Bandura, 1977).

Bandura (1977) characterized adolescence by risky behaviors. Adolescents are influenced by symbols through mass media (Bandura, 1977). In deciding to use contraception, if teenage motherhood is glamorized in the media, or by a trusted adult, an adolescent is likely to avoid using contraception (Bandura, 1977). External influence by peers has an effect on the decision to use contraception (Bandura, 1977). If not using contraception is accepted behavior by peers, an adolescent was more likely to follow that behavior.

Adolescent Decisions and Theory

Adolescents can make decisions against family and societal norms without guilt (Kohlberg, 1984). Levels II and III of moral judgment are typical in adolescence (Kohlberg, 1984). In Level II of moral development, adolescents continue to respond to behavioral expectations of respected adults and make decisions to maintain their social order (Kohlberg, 1984). In Level III, adolescents focus on logic and independent thinking with an emphasis on self and the role in the larger society (Kohlberg, 1984). Fear of consequences from outside sources drives adolescent decisions in Level II (Kohlberg, 1984). Applying this theory, adolescents deciding on contraceptive use in Level II follow expectations of respected adults such as parents and educators, and perhaps, peers. Contraceptive decisions in Level III include self-esteem, consequences of behavior, and how those consequences place them in the larger society. Kohlberg (1984) and Bandura's

(1977) explanations of internal and external influences on the decision of adolescents to use contraception, concurs with Commendador's (2003) research findings.

Commendador (2003) found a progressive sophistication in decision-making practices related to contraception as adolescents' age. Byrnes (2003) found a similar correlation. Erikson (1980), Piaget (1978), and Kohlberg (1984) described stages of decision-making sophistication as a condition of chronological age. Moral judgment develops with maturity, although it does not always follow a linear path (Kohlberg, 1984). Age is a determining factor in achieving Stages 5 and 6 in moral development, but does not guarantee attaining those stages to influence decision-making (Kohlberg, 1984). Piaget found that older adolescents make decisions based on their individuality, whereas younger adolescents base decisions on group acceptance. Erikson (1980) believed that maturity is defined by chronological stages, supporting Commendador's (2003) findings. Chronological, developmental stages of crisis culminate in adolescence leading to self-esteem and understanding of self in a social context (Erikson, 1984).

Dashiff (2000) examined factors contributing to successful data collection on adolescent studies. Dashiff mentioned three stages of adolescence. Dashiff stated that when designing data collection instruments, researchers need to take into account cognitive and maturation differences in these stages, along with psychosocial development. Dashiff stated that age alone is not a predictor of adolescent maturity. Dashiff like Kohlberg (1984) and Piaget (1978), discussed chronological stages of cognitive development as a factor in adolescent decision-making.

Dashiff (2000) sited peer pressure and confidentiality as sources of conflict for adolescents deciding to complete survey instruments. Erikson (1980) discussed trust as the first stage of ego development. Adolescents completing data collection surveys must trust that the data is confidential in order to respond truthfully. Adolescents are taught early in school that if they produce the correct answer on assignments and tests, they will earn recognition (Erikson, 1980). In deciding to participate in a survey, adolescents need to know the data are confidential and there is no withholding of recognition for submitting an answer the researcher may deem undesirable. If an adolescent thinks an environment, such as completing a survey, is depriving him or her of self-expression, he or she may choose not to participate (Erikson, 1980). Peer approval affects a decision to participate in a survey.

Bandura (1977) stated that peers, as part of the external environment of reinforcing influences, affects an adolescent's behavioral decision to participate in an activity. Level II of cognitive and moral development puts emphasis on peer approval (Kohlberg, 1984). Adolescents at Level III put more emphasis on their own decision-making capabilities than on peer pressure (Kohlberg, 1984). When designing survey instruments and other programs, administrators need to understand cognitive functions of adolescents at different stages.

Duryea (2003) discussed adolescent decision-making using counterfactuals. A counterfactual is a decision pathway different from the one presented (Duryea, 2003). Duryea studied students whose teacher presented scenarios where adolescents made bad decisions (e.g., decided to have sexual intercourse without contraception and the girl

became pregnant). Reactions to these scenarios involved incorporation of peer pressure, consequences, behavior in context of self and society, ego strength, and moral judgment. Duryea used if-then structures to show adolescents the effects of their decision-making. Bandura (1977) described decision-making as a constant interaction between peers, family, and surroundings. Incorporating if-then structures that use influences from an adolescent's surroundings is an application of Bandura's theory. For example, if some of an adolescent's peers are smoking cigarettes, the adolescent may be faced with two predominant decision-making scenarios: (a) if I smoke, they'll continue to like me and I'll still be part of the group but I'll put my health at risk; or (b) if I don't smoke, I may lose my friends, be exposed to second-hand smoke, but may reduce my health risk.

Miller (2001) conducted a qualitative study on how pediatric nurses see themselves involved in adolescent decision-making in making health decisions. Miller determined adolescents need age-appropriate information delivered by trusted nurses. Miller's finding coincided with Langer and Warheit (1992) who determined information from a trusted source is necessary for adolescents to accept information in making a decision. Adolescent health decisions require individual evaluation to deliver appropriate informational material (Miller, 2001). Although Miller (2001) interviewed only eight nurses for this study, Miller concluded that adolescents need age-appropriate information; these findings are reinforced by Kohlberg (1984) and Piaget (1978). Adolescents move from one stage to the next integrating knowledge at different levels. One type of conceptual analysis used through cognitive-developmental stages is logical analysis of new concepts (Kohlberg, 1984). Although adolescents arrive at different stages at

different chronological times, each stage requires appropriate presentation of new concepts (Kohlberg, 1984). Miller found that adolescents need appropriate information tailored to their specific age and need. Age-appropriate material presented to adolescents to make health-care decisions follows Kohlberg's stages of development theory.

Piaget (1978) described adolescence as moving away from concrete to thinking that is more abstract. Adolescents interact with their environment in determining behavior choices (Piaget, 1978).Illness can be considered a threatening situation in which the adolescent has to make decisions to adapt (Piaget, 1987). In this context, adolescents will take abstract information from a trusted source, such as nurses, interact with their hospital environment and process the abstract information to make decisions about their health outcomes. Adolescent's behavior is goal-directed and is based on the need to get well (Piaget, 1987).

Nelson and Buchholz (2003) conducted a study to determine the relationship between an adolescent female's internal "will" and interactions with environment in decision-making to participate in good and bad behaviors. Nelson and Buchholz determined decision-making was influenced by internal beliefs and environmental factors. Piaget (1978) theorized that behavior is internalized and preserved until situations warrant a behavior change that is advantageous to the organism. Nelson and Buchholz found that internal and environmental factors presented in their questionnaire did influence female adolescents' decisions about good and bad behavior scenarios; however, the perception of the scenarios by the adolescents may be different over time, depending on their stage of development and interactions with their environment. Older adolescents

with more autonomy may react differently to the good and bad questions than younger adolescents who want to be part of a peer group (Piaget, 1987).

Kohlberg (1984) stated that parents, culture, and religion define normal morality. Adolescent females in this study most likely determined answers to the questions in the study as bad or good based on moral definitions provided by parents, religious or cultural experience. Two stages of moral development are (a) a willingness to agree with society on what is right and wrong and, (b) responsibility to family (Kohlberg, 1984). Collective norms of peers and the stage of adolescent development will have an effect on how an adolescent makes a choice between "good" and "bad" decisions (Kohlberg, 1984).

Adolescent Depression and Decision-Making

Okwumabua, Duryea, and Wong (2002) examined the relationship between low-income, African American adolescents experiencing depression and their decision-making skills. Depression in low-income, African American adolescents has two possible effects on decision-making: (a) depression may cause adolescents to make unhealthy behavioral decisions, or (b) unhealthy decisions may lead to depression in adolescents (Okwumabua et al., 2002). Erikson (1980) believed that adolescents in a crisis situation are self-absorbed and will make decisions only to satisfy the self. As adolescents mature, they become less self-absorbed and make decisions in social context (Erikson, 1980). Adolescent depression may be part of a developmental crisis reliving a previous "normative crisis" that was never resolved (Erikson, 1980). Having an adolescent stuck in a developmental stage, due to depression, may lead to self-absorbed decision-making.

Kohlberg (1984) stated that self-critical fear and guilt are powerful motivators in decision-making. Depression may be an outcome of self-criticism, leading to bad decision-making. Social settings and definitions determine emotions felt by adolescents in different situations (Kohlberg, 1984). Adolescents experiencing self-criticism or rejection by their selected peer group, because of bad decisions, may feel depressed. Based on study results by Okwumabua et al. (2002), if a male 14- to 16-years- old feels pressured by his peer group to date another female member of their group, but does not conform to the expected behavior, he may feel rejected and depressed based on that decision. He may then feel so depressed he contemplates suicide due to peer group rejection. This example shows a bad decision causing depression and depression leading to a bad decision to commit suicide, or more recently, mass homicides, such as Columbine in Colorado.

Kohlberg (1984) stated parental attitudes and discipline have no effect on an adolescent's behavior. Parental power struggles with adolescents have no effect on moving an adolescent from one stage to another or influencing decision-making (Kohlberg, 1984). Parent and peers may influence younger adolescent decision-making, but older adolescents focus on decisions making them more independent from their parents (Kohlberg, 1984).

Kohlberg (1984) believed that adolescents make better decisions when empathy is involved. Tapping into emotions and empathy for self and others affects decision-making (Kohlberg, 1984). Adolescents who use empathy in decision-making more easily advance through stages of moral and cognitive development (Kohlberg, 1984). Communication

with parents, peers, and trusted adults using compassion and empathy may result in better decisions and less rebellion among teenagers of all ages (Kohlberg, 1984; Miller, 2001; Short & Rosenthal, 2003).

Literature Related to Qualitative Method

Mortimer, Zimmer-Gembeck., Holmes, and Shanahan (2002) used qualitative methodology to explore how students make decisions about vocational training when transitioning from high school to vocational or college education. Mortimer et al. took a random sample of 14- and 15-year-olds in ninth grade in 1988 in St. Paul, Minnesota, to follow longitudinally with interviews and surveys to answer specific questions about educational and occupational experiences. The Mortimer et al. (2002) study ended 7 years after the students graduated from high school when participants were 24-25-years-old. Of the 1,000 initial participants, approximately 660 completed surveys at the end of the study. Mortimer et al. developed themes from surveys and directed interview questions. Mortimer et al. (2002) broke their study population into smaller groups for interviews. Data were analyzed and categorized in the smaller groups, and then put together by similar themes. Due to the large amount of data gathering, it was manageable in smaller data sets and combined to analyze the larger set of data. Themes were based on answers to the directed questions.

My study consisted of a small group of students leading to a smaller, more manageable data set and elicited responses from more general questions to determine themes about how adolescents choose food to eat. This dissertation study was exploratory because I wanted to elicit responses from adolescents ages 14 to 17 to determine factors

that influence decision-making about food. Study questions during focused interviews were used to guide the discussion to explore and elicit factors affecting food choice from study participants. My study was not longitudinal.

Becker (2004) conducted a qualitative study to determine the effect of television advertising and messaging on eating habits of Western Fijian adolescent girls. Thirty adolescent girls were purposefully selected from 65 self-selected girls (mean age of 16.9 years) in two secondary schools to maximize variety for the study 3 years after television was introduced to Fiji. Open-ended, semistructured interviews were used to collect narrative data reflecting the influence of television on Western Fijian adolescent girls' identity and body image. This approach was appropriate in collecting information that determined Western Fijian girls exposed to television developed an idealized body image of thinness and eating habits congruent with creating and maintaining that thinness with Western (U.S.) culture (Becker, 2004). Like Becker's approach, I also used a study focus of open-ended, semistructured questions in focus groups consisting of 32 adolescents to collect information about food choice. However, my population was not self-selected. Participants were selected at random from the study population. My study had multiple ethnicities represented instead of one as in the study by Becker (2004).

Palmqvist (2006) conducted a qualitative study to determine if Finnish adolescents' use of alcohol was a rational goal-directed behavior that was predictable based on specific influences. Results of the open-ended questionnaire were analyzed qualitatively into categories of similar answers. Palmqvist determined two major categories to explain why adolescents drink: (a) to feel good (internal), and (b) to be like

their peers (external). The participants in this study were a self-selected sample of 488 adolescents ranged in age from 14 to 16 from five comprehensive high schools. This study only involved Finnish students. In my study, I did not involve self-selection of participants and I used interviews instead of questionnaires. Interviews allowed the me to delve more deeply and explore answers to semistructured questions with participants instead of structured answers from a questionnaire.

Schulman (2006) conducted a qualitative study to determine how an adolescent-adult relationship can foster change at the community level. Schulman wanted three questions answered: (a) What does youth engagement look like now, and how does it need to look in the future to affect social change? (b) What organizational structure best supports youth as decision-makers? and (c) How can youth-adult partnerships help an organization fulfill its social change function? In answering Question 3, Schulman found that adolescents who developed a partnership relationship with adults were more likely to listen to the adults and become involved in community change. Adolescents who committed time and energy to community change were more likely to be engaged in the process of social change (Shulman, 2006).

Like Shulman's research, the resulting data may have an impact on the school community's cafeteria food offerings to students at the high school in my study. Adolescents may need to develop partnerships with adults in power to make the change, and make a time commitment to see the change take effect. Factors discovered in Shulman's study of developing a good adolescent-adult relationships, shared vision for social change, and equal power sharing may be useful in implementing changes in food

offered by the school cafeteria with help from the DLMHS Wellness Council to encourage students to eat more fruits and vegetables. Like Shulman, I also used semistructured questions in interviews. Adolescents who participate in this study are part of the school where change may take place based on outcomes from the study. Perhaps students who participate in the interviews and study will develop passion and excitement for changing the cafeteria menu and eating more fruits and vegetables.

Roseman and Niblock, (2006) conducted a qualitative, exploratory study of 947 middle school students in one, central Kentucky school district to determine if participants could identify healthy menu items in the school cafeteria and the decision factors influencing students what to eat from the menu at school. The study population was primarily Caucasian (73%). Factors that most influenced decisions of study participants were (a) taste of food (87%), (b) food looked good to eat (71%), (c) hungriness of participant (70%), (d) perception of being a healthy food (47%), and (e) amount of food for the cost (46%) (Roseman & Niblock, 2006). In my dissertation, I determined if adolescents between the ages of 14 and 17 have similar decision-making patterns about the food they consume.

Neumark-Sztainer et al. (1999) identified similar factors of cost, perceived benefits (healthy), hunger, and taste among middle and high school students in Minnesota. Hunger and taste were the most important factors for participant food choice, and cost was third in the Minnesota study (Neumark-Sztainer et al., 1999). Both of these studies involved qualitative methods in exploratory studies. Internal and external factors were put into categories to determine influences on adolescent food choice. In my study, I

asked students how they decide to eat certain foods, based on internal or external influences.

Literature Related to Different Methodologies

Several studies related to adolescent decision-making and food choice using quantitative methodology were examined. Neumark-Sztainer et al. (2003) conducted a quantitative study to examine unhealthy weight-control behaviors of adolescents to help design obesity prevention programs in clinics and community-based settings. A model using personal and socioeconomic factors was applied to gather data that would explain unhealthy weight control behaviors for 4,746 adolescents from 1998 to 1999. Data were collected during school hours with surveys and height and weight data for BMI calculations and to correlate with the survey data. Two outcomes of the study were that adolescents' weight concerns mirror those of family and peers (external) and personal body image perceptions (internal). Obesity prevention programs need to address body image issues with the adolescent and peers and family (Neumark-Sztainer et al., 2003). As an external factor, peers and family may be an influence to the adolescents, and body image may be an internal factor for adolescent food choice. I examined these external and internal factors in this dissertation.

Ackard, Neumark-Sztainer, Story, and Perry (2002) conducted a quantitative study to assess the prevalence of overeating among 4,746 adolescents in several public middle and high schools in Minneapolis/St. Paul, Minnesota. Ackard et al. administered a 221 question survey, for Project EAT that measured nutritional and weight-related factors. The first goal was to determine the prevalence of overeating (no overeating,

objective overeating, subclinical binge eating, and binge eating syndrome) as described by *DSM-IV*. The second goal was to identify weight and BMI associations with overeating. Ackard et al. found that overeating behavior was more prevalent among low-income males compared to other males. Ackard et al. also found that overeating was associated with higher weights and BMI, depression, suicidal thoughts, and low self-esteem. In my study, in conducting interviews, information about these behavioral influences on eating may come out in answers and subsequent categorizations of data.

School cafeterias at middle and high schools are allowed to have a la carte meals on campus. These a la carte items are under different federal regulation than food served in the main cafeteria and are not offered in elementary school. Cullen and Zakeri (2004) examined self-reported eating habits of fourth graders in elementary school, and resurveyed the same cohort when they attended middle school to determine if they consumed fewer fruits and vegetables, and less milk once a la carte items were available at lunch. Participants came from one school district in southeast Texas. Twenty-four percent of students in the study qualified for free or reduced meal pricing (Cullen & Zakeri, 2004). Student participants completed "lunch food records" for 5 consecutive days during the fall and spring semesters during lunch period (Cullen & Zakeri, 2004). Cullen and Zakeri (2004) found that middle school students consumed less milk and more sweetened beverages, with a significant decline in fruit and vegetable consumption. Cullen and Zakeri concluded school lunch offering may be partly to blame for the increase in adolescent obesity. Offering more fruits and vegetables as a' la carte items may increase consumption, although currently a' la carte items reduce the nutritional

value of foods offered during lunch at schools. There was no ethnic breakdown in this study, or questions posed as to why students in middle school ate fewer fruits and vegetables and drank less milk. In my study, questions included information on decision-making practices of high school students when selecting to eat fruits and vegetables during lunch, or not.

The qualitative and quantitative studies analyzed and discussed in this chapter that relate to adolescent decision-making and food choice provide a foundation for my study. Huang and Glass (2008) advocated using a multilevel approach to studying obesity prevention. Studies of the community, and particularly unhealthy foods sold at school sites, health education curriculum, and policies governing food choice at schools needs to be explores (Huang & Glass, 2008). Grassroots mobilization, study and intervention, along with policy change, needs to be done to imbed healthy eating and physical activity into everyday routines of all U.S. citizens. Qualitative researchers need to explore how to imbed exercise and healthy eating into daily living.

Fink (2005) suggested that qualitative research should be used in program evaluation. The value of qualitative research is to add personal stories and "emotion" to "provide a means of gauging outcomes" and add to quantitative sources of data (Fink, 2005, p. 14). The value of qualitative data in my study aligned with Fink's definition as I evaluated the effectiveness of the Health Science 1 nutrition portion of the curriculum on decisions of adolescents to choose fruits and vegetables over other foods as part of a healthy diet. Students in this study participated in interviews to share their emotion and decision-making process for choosing food to eat.

Norman, Zabinski, Adams, Rosenberg, Yaroch, and Atienza (2007) looked at eHealth interventions on obesity in the form of physical activity and dietary change from 2000 to 2005. EHealth is defined as interactive electronic interventions used on computers, PDAs, and cell phones by individuals. Methodologies included qualitative, quasi-experimental, and quantitative methods. Norman et al. did not find one research method more beneficial than another in determining effectiveness of eHealth interventions to prevent or reduce obesity. Norman et al. concluded that all research methods need to be employed to gather more data on the effectiveness of eHealth interventions. A role of qualitative research in future studies may be to explore and evaluate how eHealth options can reduce or prevent obesity, especially since technology has changed since Norman et al. (2007) conducted their research review.

Because qualitative research was exploratory, it may be valuable in discovering new factors to study in preventing and reducing obesity. Qualitative research is a systematic analysis that is time-consuming and labor intensive and can produce large quantities of data about social phenomena which may branch into other qualitative or quantitative studies (Pope, Ziebland, & Mays, 2000). Qualitative research is iterative where new ideas for other research methodologies may evolve from qualitative studies, such as quantitative studies.

In my study, I explored a deeper understanding of how adolescents choose food which contributes to the problem of obesity in the United States. Qualitative research has value in this design and purpose. Interviews facilitated this deeper understanding of how adolescents think about and choose food (Trochim, 2001). Advantages of using

qualitative research include personal interviews, the quality of the response can be judged by the researcher during the interview process, and there is a high rate of response compared to surveys (Trochim, 2001). Qualitative researchers are able to be flexible in gathering information by starting with predesigned questions with questions evolving during the interviews to gather a deeper understanding of the issue (Trochim, 2001).

Summary

There were no studies conducted in the ethnically diverse state of California about the education, prevention, and reduction of obesity among adolescents. This study includes an ethnically diverse population of ninth through 12th grade students in California. Ethnicity was added to interview responses and analyzed. These factors, associated with qualitative data responses, added to and expanded on research pertaining to eating behaviors of adolescents. By analyzing answers to interview questions and ethnicity, insight may be gained on how to develop health education and promotion programs that will successfully reduce or prevent adolescent obesity in one school district in California. Data from this study would add to research on the topic of obesity prevention and reduction among adolescents and local school district policy decisions governing food availability in the school cafeteria and a la carte food items.

Chapter 3 provides a detailed description of qualitative research methodology for this study. Detailed description includes research sampling and population, data collection and procedures, procedures for data management, methods of data analysis, ethical and quality considerations, researcher's role, subjectivity and bias, and

participant's protection as minors, their parents, school site, and school district considerations.

Chapter 3: Research Method

Introduction

Chapter 3 includes a description of the research design including theoretical rationale of inquiry, research population, sample, data collection method and procedures, data management, method of data analysis and rationale for software selection, Institutional Review Board (IRB) procedures, and ethical considerations. Discussion of the narrative report rounds out this chapter.

The overall research question for this study was the following: What can adolescents tell us about their decision-making process about food choice and how they use nutrition knowledge to increase consumption of fruits and vegetables? Subquestions were

1. How do students apply nutrition knowledge learned in Health Science 1 to the decision-making process choosing to eat fruits and vegetables?
2. What sources of information are persuasive in teaching the importance of eating fruits and vegetables?
3. What factors influence adolescents' decisions to eat fruits and vegetables, or not?
4. What recommendations can adolescents offer to make more fruit and vegetable choices available in the school cafeteria that would encourage them to eat more fruits and vegetables?

Data to answer these questions were collected via individual interviews of adolescents 14 to 17 years of age at DLMHS. Understanding factors that influence food

choice of adolescents may lead to data to develop or modify health promotion and education programs aimed at preventing or reducing adolescent obesity.

Research Design and Approach

Theoretical Method of Inquiry

The purpose of this qualitative, exploratory study was to understand the decision-making process and influences of adolescent food choice to determine barriers and facilitators to eating fruits and vegetables as part of a healthy diet. Creswell (2003) described a qualitative study of this nature as identifying "the "essence" of human experiences…described by participants in the study" (p. 15). The human problem being explored was how adolescents make decisions about what to eat which may contribute to the obesity problem that has reached epidemic proportions over the past 30 years (CDC, 2007). Individual interviews with students were conducted to discover behaviors and meaningful relationships between decision-making, external and internal influences on those decisions, and food choice. Data collection consisted of answers to open-ended questions in individual interviews with adolescents. Participants in this study at one high school were from several cultural and ethnic backgrounds mirroring the school district population and were randomly selected from the school population of ninth through 12th graders.

Case studies were not applicable since this study was limited in time and scope. There was no documented case information on adolescents at this high school and their decision-making processes in food selection. I did conduct in-depth research on a specific activity, event, or program typical of case studies (Creswell, 2003). Narrative and

biographical qualitative research was determined to be inappropriate for this study since this form of inquiry is used when individuals are asked to discuss the story of their life from several different perspectives (Creswell, 2003). In this study, I focused on the decision-making behavior of adolescents aged 14 to 17 to determine how they decide what to eat. This type of inquiry did not involve long, narrative chronological stories of their short lives.

After analyzing qualitative methodologies, I used a phenomenological qualitative approach to explore, describe, and understand the decision-making process of adolescent food selection for students 14 to 17 years of age at DLMHS. Data collected through interviews were analyzed with human development theories discussed in Chapter 2.This analysis may be used to determine how health promotion and education programs may be modified to promote and facilitate healthier food choices that may lead to a healthier diet to prevent and reduce obesity in adolescents.

Setting and Sample

Study Population Selection Procedures

The target population for this study was the freshman through senior class of DLMHS (classes of 2012 through 2015), a public high school that has a focus on a health care curriculum with the intent that students will pursue a career in health care. Students in the eighth grade from Park Middle, Antioch Middle, Dallas Ranch Middle, and Black Diamond Middle Schools submitted an application to be admitted to this public high school in December prior to the next August enrollment. There were over 400 applicants for each class. The population for enrollment at DLMHS was based on proportional

numbers and ethnicities of enrollees at each middle school. Names for admission to the school were randomly drawn by members by the health care community in the city of Antioch, California, where the school resides for matriculation at the school. Two hundred and twelve students were admitted and started classes on August 25, 2008. As of April 24, 2011, there were 144 juniors, 160 sophomores, and 170 freshmen at DLMHS. Students generally leave the school to attend a comprehensive high school in the school district or move out of the school district. The estimated total student population was 625 by August 2011.

Purposeful sampling refers to the process of selecting study participants that will help the researcher understand the problem and answer the research question (Creswell, 2003). The purposeful sample came from all students registered at DLMHS from the 2011-2012 school year. Event data were collected via individual interviews. Students enrolled in my classes at the time of the study were excluded from the sample prior to randomly selecting students for interviews. Once participants were selected for the interview, permission slips were sent home to the parents in the sample to acquire parental consent to participate in the study. Participants signed the permission slip to acknowledge that they agreed to participate in an interview with me.

Criteria for Selecting Study Population

Sample Size

Sample size for qualitative research requires selecting enough participants to reasonably answer the research questions (Ulin et al., 2005). Qualitative researchers generally begin with minimum sample sizes to "represent the range of perspectives,

behaviors and experiences relevant to the research questions" (Ulin et al., 2005, p. 55). A sample size of 16 was reasonable for this type of research (Ulin et al., 2005). The Walden University IRB approved interviewing 32 participants to make this research meaningful.

Individual participants were selected equally from four ethnic groups represented by the school and district population: African American, Asian-Pacific Islander, Caucasian, and Hispanic. This was a small, purposeful sample (Ulin et al., 2005). There were eight participants randomly selected from each of the four identified ethnic groups for a total of 32 participants. With permission from the principal and superintendent of the Antioch Unified School District, a list of students was obtained from school administration and was organized in Excel by self-selected ethnicity required by the California Department of Education for state testing, and grade level. Students were selected with stratified random sampling from these four groups for interviews.

Hispanic students selected for the study had a Spanish translator available to them for interviews if they were part of the English Language Development (ELD) class, or if requested by the participant. This translator, the school counselor, signed a confidentiality statement in order to maintain confidentiality of student input. Consent forms were translated and back-translated from English to Spanish by two different people. One translator was a bilingual counselor who was a native speaker, and the other was a Spanish teacher who had been teaching Spanish for 35 years.

Neumark-Sztainer et al. (1999) focused on adolescents primarily of Eastern-European descent (Caucasian). Ethnic breakdown of DLMHS students is in Figure 1. My purpose was to expand on the study of Neumark-Sztainer et al. by adding ethnic diversity

to factors and decision-making for adolescent food selection expressed during their interviews.

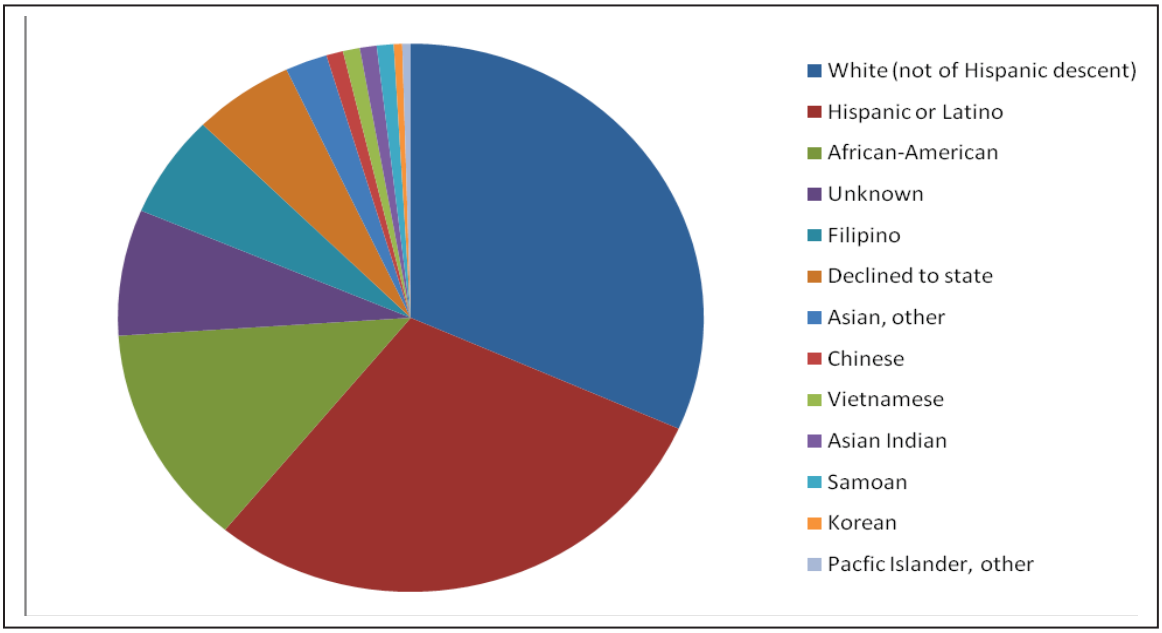

Figure 1. Ethnicity of student population, DLMHS

Access to Participants

Permission was granted to conduct this study and acquire the protected data by the principal of DLMHS and the superintendent of the Antioch Unified School District. Student participants were registered at DLMHS for the 2011-2012 school year. IRB approval was obtained before requesting a list of enrolled students and obtaining a random sample. The IRB approval process took almost 12 months, which was longer than expected since the study population involved minors.

Participants were informed of their selection for this study with a written letter sent to their parents with a permission slip requesting parental permission and participant signatures to take part in the interviews. If parents did not want their minor child to take part in the study, the next participant on the random list by ethnicity was selected until

there was a group of 32, eight for each ethnic group. I was available during regular school hours by phone or e-mail to parents and participants to answer questions about the study.

Consent forms were collected and locked in a file cabinet to ensure confidentiality of the participants. Only I had a key to this file cabinet. Limited access to consent forms and information about the participants was critical not only for the study, but because participants were minors under the age of 18 years. Confidentiality procedures were explained to parents and stakeholders as well as participants. A random number used to select participants was assigned to each consent form to ensure anonymity for computerized and coding data analysis.

Data Collection and Analysis

Interviews were conducted in familiar surroundings of the career center at DLMHS after school hours on a Wednesday or Friday when school ended at 2:30 pm. Consent forms included parental permission for students to stay for an hour after school to participate in these interviews. Interviews took no more than 1 hour due to parental time constraints for picking up their children, bus schedule limitations, and the attention span of high school students.

I used the interview guide approach to collecting data. Presenting an outline creates a systematic method for data collection and allows interviews to be conversational (Ulin et al., 2005). This approach made the adolescent participants feel comfortable and simulated a classroom situation that was familiar to them. An outline of the topics and issues to be covered was presented to the participant in written form and given to the participant during the interview for reference.

I greeted each student at the career center door, making sure they were comfortable. I then presented the reason for the study. Questions were given to the participant in written form in the language they preferred (Spanish or English). If needed, a translator was available to translate into Spanish. Interview sessions were recorded with a digital audio recorder and I took notes of participant answers on paper during the interview.

A limitation to using interviews was that students might feel uncomfortable discussing answers with an adult. Participants may not be equally articulate or perceptive in answering questions (Creswell, 2003). If needed, participants were given the option to answer the questions on 3 x 5 cards for me to review after the session ends. Data from cards and lists were sorted into similar categories. Answers on the 3 x 5 cards were added to the vocalized data. These data collections techniques are known as free-listing or pile sorting (Ulin et al., 2005). Another limitation was my presence, which might have led to may biased responses since some students knew me as a teacher at the school (Creswell, 2003).

I used guided interview questions to determine internal and external factors that might affect the decision-making processes of adolescents when deciding what to eat. I had a masters in social work, have practiced social work for over 20 years, and was skilled in interviewing techniques. Sample interview questions from the interview guide were

1. What factors determine what you choose to eat?
2. How do you decide what you want to eat?

3. What would make it easier for you to eat fruits and vegetables at school and home?
4. What other questions would you recommend I ask students to find out why adolescents don't eat healthy food?
5. What did you learn in Health Science class as a freshman that would help you choose healthier food?

The interview ended after 45 minutes, allowing 15 minutes summarization, final comments, and possible questions from participants.

Sociodemographic information on the study group was obtained from school records with permission from the principal and superintendent. Data on ethnicity were self-reported by students when taking the annual California State Academic Achievement Test.

Data Analysis Methods and Data Management

Recorded data, both written and digital, was stored in a locked file cabinet. Only I had a key, with a back-up key being held by the school's administrative assistant according to school policy. Files were kept according to recommendations by Ulin et al. (2005): (a) original proposal; (b) data collection protocols; (c) informed consent forms and parent permission slips; (d) written IRB, principal approvals to conduct the study; (e) sociodemographic data sheets; (f) code books; (g) interview transcripts; (h) student observation notes; and (i) information about local food establishments. Ethnicity and student names were kept in an Excel workbook, which was password-protected and

locked in a file cabinet. Two back-up copies of this spreadsheet were maintained at all times on USB drives and in printed format with one copy being kept off site.

Data collected using the digital audio recorder during interviews was transcribed and hand-written notes were incorporated in the transcription. The transcribed data were put into an Excel workbook with the column titles of random number, grade, age, gender ethnicity, grade point average (GPA), and interview consecutive number. Comments were labeled according to the section category on the interview guide and research questions.

Data Analysis

Using an open-coding approach, data were analyzed to obtain themes and were categorized based on statements from participants (Creswell, 2003). Data were categorized and coded using sort and pivot table commands in Excel. Techniques used included finding words with similar roots, specifying ranges of synonyms, and joining similar concepts together. In developing conclusions from the data, I addressed the following questions from Ulin et al. (2005, p. 159):

1. Do the categories created make sense?
2. What pieces of data contradict my emerging ideas?
3. What pieces of information may be missing or underdeveloped?
4. What other information or opinions should I take into account?

Interpreting data from the study required me to put the pieces of data into a meaningful context (Ulin et al., 2005). I had to remain true to the participants' responses

and develop relationships with the research questions. Finally, I synthesized findings into themes that answered the research questions and identified gaps in the research.

Data Representation

After data analysis, categories and themes culled from the data were presented. Tables in Excel and diagrams representing coded data themes were presented and interpreted to answer the research questions. Graphs in the form of pie charts and bar graphs were used. A diagram displaying an adolescent's decision-making process on what to eat and the factors leading to those decisions was used and is depicted in Figure 2 below. Outliers were analyzed and explained.

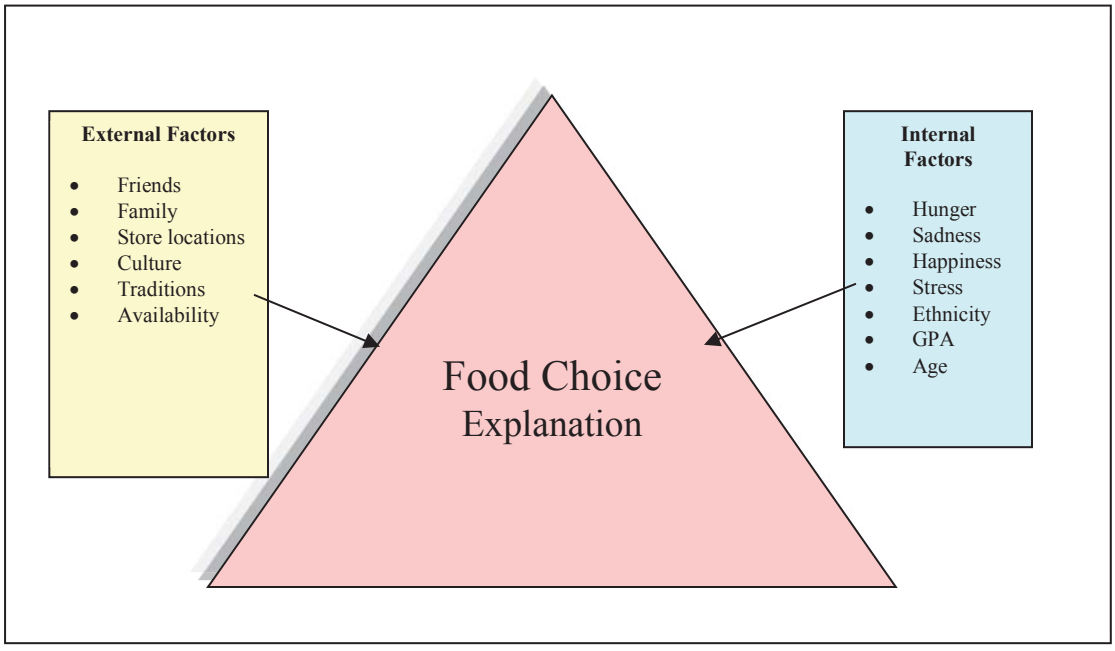

Figure 2: Possible data representation of decision-making process after data analysis

Structure of Narrative Report

The narrative report for this qualitative study followed an analytic and problem-solving approach (Ulin et al., 2005). Data were discussed in context of cognitive behavior theories of Bandura (1977), Erickson (1978), Kohlberg (1984), and Piaget (1980). The report included diagrams and charts demonstrating data. When applicable, direct quotes from interview participants were used to back-up analysis and conclusions.

Using the problem-solving approach, the problem was stated and the importance of understanding and solving the problem of adolescent obesity was addressed in the results citing recent, peer-reviewed literature. How this research was relevant to the problem, themes, and conclusions were offered in relationship to development of health policies and social change for health education and promotion in reference to adolescent obesity and food choice behavior.

An overview of the narrative report was presented using a Microsoft PowerPoint presentation at an open community forum for parents and students at DLMHS at an evening session. Findings were presented to the DLMHS Wellness Council at one of their meetings. A brief summary of the study was presented at a meeting of the Antioch Unified School District Board, along with a brief summary of the study findings, conclusions, and implications for social change. Findings were discussed with nutrition services staff and faculty teaching curriculum for the Health Science 1 course.

Protection of Participant's Rights and Ethical Considerations

Minors as Study Participants

Having minors, under the age of 18, participate in a study created unique ethical issues. Parents must be involved in giving permission to participate, as well as other stakeholders responsible for protecting minor children. Parental involvement as well as involvement of the school principal was necessary through every step of this study. These stakeholders were kept appraised of the study progress through personal, e-mail, and telephone contact. Communication with parents was continuous while the study was being conducted, and stakeholders were notified, at a minimum, monthly until the study was completed. Appendices B through E contain assent and consent forms that were approved by the Walden University IRB and used in this study. Appendix B contains the assent form for participants in English and Appendix C contains the participant assent form in Spanish. Appendix D contains the parent consent form in English, and Appendix E contains the parent consent form in Spanish.

Reliability and Validity

Creswell and Miller stated that the validity of qualitative research is related to the accuracy of reporting determined by the participants, researchers, and or the readers of the study (as cited in Creswell, 2003). Terms such as "trustworthiness," "authenticity," and "credibility" determine validity of qualitative research, although this definition continues to be debated in the literature (Creswell & Miller, 2000; Lincoln & Guba as cited in Creswell, 2003). Creswell (2005) suggested several strategies to check for validity in qualitative research. Two procedural strategies suggested by Creswell (2005)

were used to add validity to this study and are self-reflection of the researcher to identify bias, and presentation of negative or discrepant information that runs counter to the resulting themes.

Ulin et al. (2005) defined validity and reliability in qualitative research as credibility, dependability, conformability, and transferability as the standards of rigor to evaluate qualitative research. Credibility means the true value of the findings, meaning whether the findings are logical, whether the findings have a theoretical basis, and whether participants and reviewers consider the results to be accurate. Dependability involves the researcher's attention to detail and complying with rules and procedures of qualitative research. Conformability refers to nonbias on the part of the researcher. Transferability, although primarily a goal of quantitative research, means knowing if results and conclusions may be generalized to a larger population adds to validity of a qualitative study.

Data were coded, categorized, and analyzed to develop themes about how adolescents determine what food to eat. Ethical considerations and validity and reliability issues were discussed in the narrative report. Results and conclusions were reported to all stakeholders at the end of the study.

Although the results of this study may not be applicable or transferable to a larger population, the study may affect social change by providing data to the Antioch Unified School District Nutrition Services department for modification of food offered to students in the cafeteria and a la carte, and result in changes to the Health Science 1 curriculum at DLMHS to promote more fruit and vegetable consumption.

Summary

Chapter 3 included a description of the rationale and methodology for conducting this qualitative study to explore the decision-making process of adolescents in choosing food to eat. Chapter 4 includes the analysis of the data and the findings of this study.

Chapter 4: Results

Data Analysis and Findings

The findings for this qualitative, exploratory study are presented in Chapter 4. The purpose of this study was to explore insights and provide a deeper understanding on the decision-making process of how adolescents choose what to eat. Interviews were used to explore, describe, and understand the decision-making process of ninth through 12th graders to determine factors influencing the purchase of fruits and vegetables during lunch at DLMHS and influence changes and development to the health science curriculum related to nutrition information taught to adolescents about healthy food choices.

The overall research question for this study was the following: What can adolescents tell us about their decision-making process about food choice and how they use nutrition knowledge to increase consumption of fruits and vegetables? Subquestions that guided the study were

1. How do students apply nutrition knowledge learned in Health Science 1 to the decision-making process choosing to eat fruits and vegetables?
2. What sources of information are persuasive in teaching the importance of eating fruits and vegetables?
3. What factors influence adolescents' decisions to eat fruits and vegetables, or not?

4. What recommendations can adolescents offer to make more fruit and vegetable choices available in the school cafeteria that would encourage them to eat more fruits and vegetables?

This chapter includes the changes to the organizational methodology of the study, the sample population interviewed, and how the data were gathered, recorded, and categorized. The process of determining categories and how meanings emerged is discussed in relation to guided interview questions and previous literature review. Finally, the findings from the research questions are presented.

Setting

Study Organization Changes

Originally, participant interviews were scheduled for after school. After parental consent forms were obtained and the interview times discussed with several parents, it was determined that most parents preferred their children to be interviewed during the school's advisory period before lunch due to after school transportation issues. Two interviews were still conducted after school as requested by participants and parents. The location of the school was far from the residential areas of Antioch and most students were transported to and from school by their parents. Some parents, whose children participated in sports after school and had to travel at least 30 minutes to get to practices, were concerned their children would miss practice if they participated in the interview after school. By doing interviews during the advisory period, students randomly selected for the study and played sports could still participate.

The time of day of the interviews did change to the middle of the school day during the advisory or Creating Understanding and Relevance Every day (CURE) period with teacher and parent permission to leave the advisory period for the interview session. The time allotment for the interview of 45 minutes to an hour did not change. The room location of the interviews did not change and confidentiality was maintained. The originally proposed method of giving students a common pass from class to attend the interview did not change. I determined that by accommodating this parental request, students would be more likely to participate in the study and would not be stressed about finding a ride home after school or feel rushed during the interview session. The interviews were conducted over a 12-week period instead of 4 weeks due to these accommodations. This change did not influence research outcomes since all other aspects, such as interview time allotment and interview questions, remained the same.

Demographics

Students in Grades 9 to 12 from four ethnic groups were randomly selected from the school population of 485 students at DLMHS in Antioch, California, from the 2011-2012 school year that started in August 2011 and ended in June 2012. The sample population of enrolled students was extracted from the e-school computer system in November 2011 by the administrative assistant and consisted of 485 students after students enrolled in my classes were removed from the population. The self-declared ethnic groups used for the study were African American, Asian, Caucasian, and Hispanic/Latino. Thirty two participants were interviewed with eight students represented

from each ethnic group. If students or parents declined to participate, the next student in the randomly generated list was selected.

After the initial selection of 32 participants, one African American participant, two Asian participants, and two participants in the Hispanic/Latino groups declined to participate either at the student or parent level. Participants were selected from the random lists in each of these groups in order to interview eight participants from each ethnic group. Participants interviewed in the Caucasian group consisted of the first eight randomly participants selected from the school population. Grade representation from the random sample was an overrepresentation of 10th graders based on grade levels of the population sample: ninth grade (73), 10th grade (172), 11th grade (143), and 12th grade (97). Table 1 depicts grade level by ethnicity, and Table 2 shows age range by ethnicity for the study group.

Table 1

Study Group Participants Interviewed by Ethnicity and Grade Level

	African American	Asian	Caucasian	Hispanic/Latino	Total by Grade Level
9th grade	1	3	0	1	5
10th Grade	4	4	3	3	14
11th Grade	1	0	4	1	6
12th Grade	2	1	1	3	7
Total by Ethnicity	8	8	8	8	32

As demonstrated in Table 2, most participants who participated in the interviews were 15- and 16-years-old. This coincides with the ages of freshmen and sophomores, which were the largest random sample in the study shown in Table 1. They were also the largest classes at the school during this study.

Table 2

Study Group Participants Interviewed by Ethnicity and Age at Interview

	African American	Asian	Caucasian	Hispanic/Latino	Total by Age
14 years old	1	3	0	0	4
15 years old	3	3	1	3	10
16 years old	2	1	6	2	11
17 years old	1	1	1	1	4
18 years old	1	0	0	2	3
Total by Age	8	8	8	8	32

The average GPA of all participants was 2.90. The lowest GPA of a participant was 1.14 and the highest was 4.00. Individual GPA data was noted on interview comments by participant.

There are more females enrolled in the school than males. This has been a phenomenon for the past 4 years since the school opened in 2008. In the participant pool, 312 (64%) were female, and 173(36%) were male. In the randomly selected study sample of 32 participants, 25 (78%) were female and 7 (22%) were male.

Data Collection

Participants

Walden University IRB approval was obtained on November 7, 2011, number 11-07-11-0019459. A database of a total of 621 students enrolled at DLMHS was extracted from the e-school data system by an administrative assistant on November 12, 2011. After excluding 136 students who were registered in my classes, there were 485 students in the possible participant population. A purposeful sample of participants was randomly selected from four self-declared ethnic groups by sorting the population into ethnic groups and assigning random numbers to each group using the *rand* function in Microsoft Excel 2010.

The sample was then sorted by the smallest random number to the largest. Thirty two participants were selected for individual interviews by selecting eight participants from each ethnic group using the random numbering system beginning with the smallest random number. Participants were then called individually to the career center and the study was explained to them by reading the participant assent form. If students agreed to be part of the study, they were asked to sign the assent form and take a consent form home to their parents and return it within 5 school days.

Individual interviews were conducted during the advisory period, called CURE, in the middle of the school day to accommodate parent transportation requirements and students attending practice for sports activities. All students attend the advisory period. Interviews were conducted with eight participants from each of the above-stated ethnic groups. Ages of students ranged from 14- to 18-years-old in Grades 9 through 12 at

DLMHS. The three 18-year-olds were 17 at the time of the study and it was determined turning 18 within the 1-2 months from population selection to study would not affect answers to the study questions. All students at DLMHS went through the same health science and other high school curriculum regardless of their age at the time of the interview. All participants were eager and willing to help with this study. They answered my questions with as much information as they could.

Location, Frequency, and Duration of Data Collection

Interviews were conducted in the career center at DLMHS which has a separate entrance from any other school office or classroom which maintained confidentiality during the interviews. Participants were given a CURE pass, which was a pass that releases any student from the advisory period. This pass was used for all students at the school who need to leave the advisory or CURE period for any reason. This ensured student confidentiality by not making it a separate process and singling out study participants being released to participate in the study. Students reported to the career center for their interview with me.

Interviews were conducted from November 29, 2011 through May 22, 2012 during CURE which lasts from 11:35 a.m. through 12:45 pm, or after school on an early-out day, which was Wednesday or Friday. As stated in Chapter 3, interviews were scheduled for 1 hour, and took no longer than 1 hour in order for students to eat lunch and go to their next, regularly scheduled class, or go home if interviewed after school. Participants were interviewed during CURE on Tuesdays through Friday when their schedule permitted. Monday CURE time was shorter than other days due to class

scheduling, and interviews were not scheduled on Mondays to allow for the full hour of interview time.

At times participants had to make up a test or other work for a class during CURE and were unable to make the scheduled interview. At times, students were absent the day of their scheduled interview. These participant interview times were rescheduled to accommodate participant academic needs or excused absences. Due to these accommodations, completion of the 32 interviews took longer than I had anticipated. At the time of the data extraction, all students were ages 14 to 17. Due to rescheduling interviews, three participants turned 18 during the interview time period. These students were not eliminated from the study, since they were 17 at the time of the data extraction and random selection and were no more than 1 to 2 months into their 18th year when they were interviewed.

No participants required translation from Spanish to English, and no parents required consent forms translated into Spanish. This was verified by asking participants if they or their parents needed a translated consent form. I double-checked with the counselor who spoke Spanish and knew all parents that needed translation services in verbal and written format to make sure no parents needed translated consent forms. No English Language Learner (ELL) was randomly selected from the participant population. No interviewees indicated that they needed translation services during the interview, although all students were asked if they needed these services.

All student assent and parent consent forms were signed and obtained prior to scheduling each interview. Participants were given signed copies of assent and consent

forms for their records at the time of the interview. Original forms were maintained in a locked file cabinet, and copies were stored in a password-protected file on my computer. There were two copies of the participant database stored off site on a laptop, and on a USB portable hard drive. All electronic copies were password-protected and paper copies were in a locked file cabinet in my office.

Data Collection Methods

The data collection instrument consisted of the guided interview questions (Appendix A). Only the one instrument of guided interview questions was used to collect participant data. I took hand-written notes in a bound journal, and a digital recording of the responses to the interview questions. This was agreed to in the student assent and parent consent forms. Only the randomly generated number and the interview date were used in the digital recording or journal notes to identify participants at a later date if needed. Participants were told all data would be kept confidential prior to and at the end of each interview. Participants were told they could leave at any time during the interview, and did not have to answer any question if they felt uncomfortable. At the end of each interview, the participant was given the opportunity to ask me any last questions. The participant was then thanked for the interview and was given a $5.00 Jamba Juice gift card in appreciation of their participation.

Variations and Unusual Circumstances in Data Collection

The only variation in data collection outlined in Chapter 3 was the time of day for the interviews and that three of the participants turned 18 during the data collection process. Originally, interviews were going to be scheduled on early-out days after school,

which begins at 2:30 pm, on Wednesdays or Fridays. After receiving parent consent forms requesting students be interviewed during the day to accommodate transportation issues and after school sports activities, interviews were scheduled during the CURE advisory period in the middle of the school day. Total interview time was not compromised with an hour still allocated for each participant interview. It was determined there would be no major effect on the study by interviewing randomly selected participants who turned 18 since their experience at DLMHS was the same as all other students enrolled at the school.

Some interviews took less time than anticipated. I followed the guided interview question protocol, and even with additional probing based on participant answers, some interviews lasted less than 45 minutes. This occurred when students gave short, concise answers to the guided interview questions and did not elaborate when asked. Even though some interviews took less time, data were gathered on all the guided interview questions.

Data Analysis

Data Coding Process

Data were typed into a Microsoft Excel 2010 spreadsheet by rereading and relistening to answers to the guided interview questions of each participant several times to obtain themes and categories. Answers to interview questions were typed into columns labeled knowledge, source of information, experience, and opinion based on each guided interview question groupings. A search using the "find all" function was done for common word roots and synonyms. Common concepts were noted and joined together to

form coded categories to answer the research questions. Common themes based on interview question categories are described below.

Sources of information. In the group of guided interview questions asking about sources that influence participant food choices, common words used were physical feelings as a source of information (hunger and mood), friends, family, the Internet, television, school, doctors, and other less common influences.

Physical feelings and mood. Males talked more about hunger as a physical influence on food choice such as "When I'm hungry I need something to eat now." Another male stated, "When I'm hungry, I need something quickly that fills me up." Females mentioned feelings or mood more often as a determinant of what food they chose to eat. One participant stated "I like to eat almost anything, but mood always wins." Males and females said they might choose salty or sweet depending on their hunger level. A female participant stated, "I want sweets when feeling down or slow and need energy."

Friends. Friends influenced food choice for some participants, but not all. Participants stated that even if friends ate things they did not want, they would not necessarily eat what their friends were eating if they did not feel like eating it or knew it to be an unhealthy choice. However, if they were at a friend's house, they would eat what was offered instead of being rude and asking for something else. Some participants mentioned that they would not eat an unhealthy food offered (e.g., chips) if it would not offend their friend or the friend's family as stated by one participant, "if my friends are eating junk food, I'm more likely to eat junk food." Participants stated that if their friends

told them to eat healthier they probably would not listen, but if they were out at a fast food establishment or restaurant, they would be influenced to eat what their friends ate: "Yes, say they want to eat something, and I'll eat it, too."

Participants mentioned that their friends were not an influence if they tried to convince them to eat healthier. As one participant stated about friend influence, "Not really, it's what I want to eat; they don't influence me." Another participant stated, "At school, no (friends don't influence me), I eat what I want to eat. If I'm at their houses, if they want ice cream or chips, I won't eat with them." Friends' behavior in the moment seemed to be more of an influence than what was verbalized.

Family. In almost every interview, participants mentioned family as an influence on what they ate at home, especially during dinner or supper time. Several participants moved back and forth between mother and father living arrangements due to parents not living in the same house. In most interviews, participants mentioned females such as their mother or grandmother that had the most influence on their food choice "Mom doesn't let me eat junk food close to dinner time." Mothers and grandmothers were mentioned most often as doing the food shopping and cooking and participants ate whatever was prepared. A female participant stated, "whatever they cook you'll eat because that's what there" and another stated, "Mom cooks what I like." Another participant mentioned she would "eat what family makes even if I don't like it." One participant mentioned she thinks food eaten at home prepared by her mother was "a healthier option than eating fast food."

Two participants were influenced by family eating habits due to health situations of family members. One participant's father has diabetes, and the other hypertension. Due to these health conditions, their mothers fixed meals based on diet restrictions and the study participants ate the same food served to all family members.

One participant mentioned she ate Vietnamese food when she's at her Dad's house "when at my Dad's house I have to eat more Vietnamese food." Another participant ate Nigerian food because that is what her mother cooked: "I eat Nigerian food at home," and another mentioned he ate Mexican food because he "considers it healthy" and that is what his mother cooked most often. Cultural preferences of family influenced food choice in a few instances.

Internet and television. Participants stated that advertisements or pictures of food on the Internet did not influence them on food choice but television was more influential with advertisements. One participant mentioned she looked up food recipes online and cooked some of them. Most participants stated that television advertisements and commercials did not influence their food choices. A few participants mentioned food advertisements on television that made the food look "enticing" and influenced participants to ask their parents to buy the item now, or within the next few days: "Yeah, when a commercial comes on and show food makes you want to eat it. Sometimes, go out and eat it. Most of the time, the ad just goes by." One male participant stated that the television did not influence food choice "unless I'm really hungry then I want something I see in an ad, but normally I wouldn't be influenced by TV." A few participants stated, "I see commercials on TV about food, and when go to that place I get it. Then find out it's not that good. Commercials make the food look good, like a juicy hamburger or really good taco or burrito, but then it's not that good." Two participants stated, "Commercials may make it appealing, but I don't pay much attention" and "TV ads like McDonalds new chicken pocket thingies; I went to go get some and they were good. If doesn't look good, I ignore it." Television advertisements about food influenced some adolescents but not others, but the ads needed to make the food look good or enticing. The Internet did not seem to influence any of the participants on food choice. They pointed out to the interviewer that they were on Facebook a lot and they did not notice any food advertisements on that web site that would influence their food choice.

School. Most participants stated that school did not influence them unless they purchased food in the school cafeteria. Then they were influenced by what was served on the daily breakfast and lunch menus. “If I buy lunch, there’s a limited amount of choices to buy. Depends on what they have. I buy regular Cheetos because they taste good, and water. Sometimes I buy a burrito or hamburger or nachos, too.” One participant mentioned she does not like what is on the school menu and “I bring my own lunch like a turkey sandwich. I don't like school lunch and how it tastes.” Two participants worked in the school cafeteria and got free lunch. “The cafeteria influences what I eat based what's on the menu, since I work in cafeteria. Usually I get one healthy choice and one unhealthy choice. It all taste like "rubber," but the unhealthy choice, like pizza, tastes better.” Another participant stated, “(In the cafeteria it’s) hard to have a healthy choice, but I buy salads and sandwiches.” Another participant stated, “Yes (the school influences me), but I’m limited to what's on the cafeteria menu.” Food choice was influenced by what was on the cafeteria menu which served some healthy (salad) choices, and nonhealthy choices, like pizza.

Doctors. Most participants stated that doctors did not influence their food choice. One participant was on the Jenny Craig diet because her doctor told her to lose weight. One participant stated doctors did not influence him because "I feel like he's criticizing me more than helping me. I feel more attacked or that they're lecturing me." Some of the females said their doctor will tell them to eat more fruits and vegetables, although this did not lead to more consumption of fruits and vegetables.

One doctor told a participant to "eat more calcium. He did talk to me about diet." but she did not necessarily follow his advice. Another participant followed a doctor's suggestions because "my doctor said to eat things with iron due to anemia." One participant shared, "I went to the doctor and found out I had a bacterial infection in my stomach, and now I can't eat spicy food, citrus, or caffeine. The infection hurt and my doctor told me what food to avoid to heal. If I'm not sick, my doctor is not an influence."

Two other participants' doctors talked to them about food choice when they went for annual physicals required for a job or participation in high school sports. For the cheer physical the doctor told her to "eat vitamins," and for a summer camp job the participant said 'I'm usually pretty healthy, so my doctor and I don't talk about food." Doctors may only be influential on food choice if an adolescent has a specific problem that needs to be treated or if they need to lose weight. Those that participated in sports, which were swimming, volleyball, track and cheer, stated they ate healthier during their sport's season because "eating healthier give me more energy and helps me perform better."

Most influential experiences. When asked what influenced participants the most, family and "what we have at home" was mentioned as the most influential factor in

adolescent food choice. Family influences what adolescents have at home since family members are the primary food shoppers. The most influential family member mentioned was the mother, and sometimes the grandmother. In most interviews, participants mentioned that their mother was the primary shopper and food preparer: “my Mother and Grandmother plan meals,” “for meals if my Mom is cooking dinner I usually eat everything being cooked,” and “what Mom cooks affects what eat.” Another participant shared ,“My Mom buys groceries, and she asks me what I want. She gets fruits and vegetables. Often we eat frozen dinners because she works late. My Mom usually gets meat and potatoes and fixes ahead of time can so I can heat the food up in the microwave.”

The second most influential factor mentioned was time or convenience of getting something to eat due to hunger. Participants wanted something quick to satisfy their hunger: “I eat what's there, even if not healthy,” “What we have at home,” “What's available,” and “What's available, and how I feel (salty or sweet). Mood has a lot to do with it.” Participants mentioned availability which related to what was at home and most likely purchased by their mother. One participant each mentioned these influences: culture, image, weight, and food that is “good for my health.”

In the influence category of guided interview questions, parents (mother) and what was available at home, which was related to family, was the most prominent factor.

Experience

Questions were asked about location of fast food, sit-down restaurants, and grocery stores in the vicinity of the participants’ homes. Common key words for

experience with food choice were convenient, time, taste, quality, and availability. They were asked how they felt after eating healthy food vs. unhealthy food. The majority of participants showed they knew what was healthy by verbalizing that healthy food included fruits, vegetables, whole grains, and lean meats/protein.

Location of fast food, restaurants and grocery stores. Most participants stated that since their family was the most influential in what they ate, their food was purchased at grocery stores and prepared at home. Participants lived a varied distance from fast food, sit-down restaurants, and grocery stores. Even though some participants lived closer to fast food than grocery stores, their parents primarily purchased food from grocery stores to prepare at home. "The location of fast food has no influence, since all we eat is home-cooked food." "Yes, we have fast food and grocery stores close to home, but I prefer grocery stores. We do get fast food from the grocery store (e.g., Safeway), but we buy prepared sandwiches that are healthier instead of McDonald's which is across the street from my house." One participant stated, "I don't eat fast food. All of my life I hated hamburgers. Hate In and Out. We buy groceries."

Time. Participants stated that they were more likely to eat fast food like McDonald's or Taco Bell, if they passed it on the way home from school or sports team practice, and their mother was in a hurry and did not have time to cook supper. "Convenient to stop by," "It's my Mom's mood if we go to fast food, or a restaurant." A few participants stated they go to fast food places more often when they are on a road trip with family. "On road trips like to Lake Tahoe we stop at fast food because it's quick."

A family's time seemed to be a factor when selecting fast food or cooking at home. "We eat at a fast food place if we're in a rush to go somewhere after school or at night." "If we want something fast, we go to fast food, even though it's not close to our house."

Cost. Cost seems to be an experiential factor in several situations. Participants stated that they would go to fast food places if their friends were going and they had money to spend. They would not necessarily eat the fast food their friends purchased, but would go to socialize. Participants with discretionary income who did purchase food stated, "When I go to fast food, I stay on low end at dollar menu for myself." A few participants said it costs too much to eat at fast food and other restaurants due to the size of their family: "too expensive; won't eat out due to big family." At fast food places or restaurants, "you get less quantity of food for the price." "Cheap food is important since our family struggles with finances. Healthy food may be cheaper in the grocery store than at fast food places." Another participant stated, "My family buys off brand if the food costs less." Adolescents were cognizant of food costs for themselves and their families.

Taste. Taste was an experience that influenced food choice for some adolescents in this study. Participants stated, "If it looks good and tastes good, I'll eat it. I'm not going to eat anything that doesn't taste good. I may eat cauliflower over broccoli because I like cauliflower better." Another participant stated, "Of course, if something tastes good I will want it," and other stated, "If it doesn't taste good, I won't eat it." One participant stated, "I will not eat more if doesn't taste like what I want." Interpreting this answer, the participant meant that if they think a food tastes a certain way, and then after they eat it and it does not taste they imagined it would taste, then they will not continue to eat that

food choice. However, if the food was available at home and prepared by the family, the participant would still eat it to avoid hurting a family member's feelings; meaning, taste was secondary to food being prepared, feelings of the preparer, and availability of food when they were hungry. "No, not picky on taste when it comes to food that's already prepared", or "not picky about taste when I'm hungry."

Quality. Some participants mentioned quality of food they choose using different concepts. One participant called it quality food when "it tastes good and fills me up." Another defined quality as having a higher nutritious value by stating, "if good quality food and would pay if more expensive." A few other participants defined quality as "freshness of food." Although this term came up often enough to be a key category of experience, the definitions expressed by the participants varied considerably.

Availability. Participants mentioned food availability many times when linked to hunger and when they wanted to eat something quickly. When a participant was hungry, such as when they got home after school, they seemed to eat whatever was quick and available. "I would pick less healthy food if readily available when I'm hungry." When I get home from school, I "reach for a cheese and crackers snack, so I don't have to cook." "Say there's chips sitting there and no healthy foods, then I choose chips." After school, "I like to have cookies and fruit, but most times go for something quick and easy in small bags, like chips." Family provided most of the food eaten at home, and one participant suggested they "buy more fresh fruits and vegetables and have them available to eat." When one student got home from school, she shared "When fruit out, I will grab that instead of chips. Don't like peeling fruit." Based on this data, since adolescents are

hungry and want something quick to eat, especially after school, perhaps having healthy snacks like fruit readily available may influence them to make healthier food choices at that time of the day.

Healthy versus unhealthy eating. Participants were asked how they felt after they ate healthy versus unhealthy foods. First they were asked to define a healthy food. Most participants listed fruits, vegetables, whole grains, and protein (meat or nuts) as healthy. They defined unhealthy foods as those high in fat, salt, and sugar.

Most participants agreed that unhealthy food tastes better to them compared to healthy food. "Not all healthy food is tasty. I will choose a fast food hamburger over a salad." Most students responded to the difference by staying they felt "lighter" after eating healthy food, and "sluggish and tired" after eating unhealthy food. "I feel lighter (better) after eating healthy food. Unhealthy food feels like weight on me, and I feel bad." "Healthy food stays in me longer and I feel more energized and it makes feel better about myself." "Healthy food gives me more energy than unhealthy food." "I feel more tired when eat I eat unhealthy food." Another participant stated, "Eating fast food, or unhealthy food, makes me feel tired and want to go to sleep. When I eat healthy food I feel better and so awake and not tired and lazy. With healthy food I have more energy." Many participants stated that they feel tired after eating unhealthy food, and energized after eating healthy food.

Participants stated that when they eat healthy food, it fills them up more, and eating unhealthy food makes them feel hungry sooner. Sometimes when participants ate unhealthy food it made them feel sick. "Eating healthy feels good, and when eating

unhealthy food I feel disgusted, and my stomach feels upset." "When I eat healthy food, it feels like I ate something good and I don't think of fat and calorie intake. When I eat unhealthy food, like fast food, I think 'I can't believe I just ate that!' and how it negatively affects my body." Participants seemed to feel physically bad when they ate unhealthy food and wanted more food quicker than when they ate healthy food such as a salad.

Knowledge

Good eats. All but one student remembered learning about nutrition in ninth grade Health Science class. Most students remembered the Good Eats project and many remembered reading the book *Chew on This* in English class. The Good Eats project had students work in groups to research conditions related to nutrition and present an advocacy project to the community advocating for healthy eating to prevent the condition. "My Good Eats project was on caffeine. After this research it influenced my and my family's eating habits to cut down on caffeine." "I did my Good Eats project on nutrition on athletes and realized how nutrition affects life and hypertension." "Good Eats taught me how choosing unhealthy food can result in diabetes and heart disease and influenced me to eat healthier. I also found out heart disease and diabetes runs in my family and makes me want to eat healthier." "Doing the Good Eats project, I learned how to exercise and what we eat helps to maintain healthiness. I learned to watch for calorie intake; take estimate on calories. I learned my daily diet should be about 1,800 calories." Most students remembered the Good Eats project and it affected their food choice in some way.

Books. The book *Chew on This* is a simpler rendition of *Fast Food Nation* geared to adolescents. *Chew on This* depicts in an unfavorable light, how fast food organizations, like McDonalds and Burger King, procure produce, meat, and other food products for their restaurants (Schlosser & Wilson, 2007). “By reading "*Chew on This* I stopped eating as much junk food because of the way they treat animals.” Another participant stated, "*Chew on This* disgusted me about fast food and I don't eat as much.” One participant stated, “I thought fast food was healthy since has lettuce and tomatoes in it.” Even though this book had an impact on participant’s choice of eating fast food, it did not stop them totally from eating food by fast food restaurants.

Learning Activities in Health Science 1

Labels. Several participants mentioned that learning how to read labels in Health Science 1 in ninth grade changed how they chose what to eat. “I now look at labels more than I did before to check fat content,” said one participant. Another participant stated, “I now read food labels to check calories, fat, and carbs” to make healthier food choices. One participant stated, “Reading labels was the most valuable activity in eating healthy. The teacher brought actual food packaging and we looked at serving size, put food in a cup, and showed what the serving size should be compared to what we actually eat.” Participants mentioned this activity often in relation to learning the actual serving size of cereal compared to what they actually ate in the morning. Reading labels helped one participant, “be more aware and pick healthier food.” One participant stated, “I learned label tricks. Now I read labels. I try to stay around the perimeter of grocery store for fresh foods. I learned when comparing fresh vs. packaged foods, fresh food is more healthy.”

Students remembered the label activity and seemed to learn how to read them and continue to use this knowledge to pick healthier food.

Food pyramid. In Health Science 1 class, participants learned about the United States Department of Agriculture (USDA) food pyramid and then learned about the new portion sizes using a dinner plate model when the USDA changed their graphic depiction of healthy eating from a pyramid to a dinner plate. They created food diaries and tracked what they ate for a week. This information was typed into the USDA web site to determine if students were meeting their nutritional needs. One participant commented, the "food pyramid activity on how much nutrition I got in foods each day showed me what I needed to eat more of. It showed me I had too much sodium in my diet via canned food." Learning about the "food pyramid I realized I wasn't getting all the daily fruit and vegetable servings which was eye-opening." One participant stated, "I liked the pyramid that showed salt, fat content of food I ate." The food pyramid activity in Health Science 1 made students more aware of the nutritional content of their food choices.

Curriculum in Health Science 1 seemed to raise awareness of nutritional value, food content, and diseases and conditions that can result from an unhealthy diet. This awareness did not necessary change food choices.

Opinion

This section gave participants a change to give their opinion on how the school cafeteria might change its menu to encourage students to make healthier food choices. Previously, participants told the me that healthy foods are fruits, vegetables, lean means and nuts, and whole grains. This section gave participants an opportunity to give their

opinion on how parents, community and the school could help them make healthier food choices.

Changes to cafeteria menu. Participants were given the opportunity to suggest ways the school cafeteria could change its menu to offer healthier food choices. Participants expressed their concerns that the pizza was "too greasy and the grease soaks through the cardboard container it's served on," and the cafeteria offered high calorie burritos, hamburgers, cheeseburgers, and pizza too many times during the week for lunch. One participant expressed disbelief that anyone would consider "donuts and Pop Tarts offered at breakfast as a healthy choice." Several participants did not agree that "chips, cookies, and ice cream" offered on the a la carte area were healthy enough to serve in schools. One participant suggested "getting rid of the snack bar that sells cookies and brownies" so students have to pick healthier choices from the main food line. The cafeteria did start putting a bowl of fruit (apples and oranges) on the snack bar, but students chose cookies and brownies over the fruit. According to one of the participants who works in the cafeteria, no one ever bought fruit from the fruit bowl.

Several participants suggested that the cafeteria serve "fresher foods and watch portion sizes." All the cafeteria food was cooked at an off-site high school cafeteria that served the entire school district and the prepackaged food was distributed to all other cafeteria elementary, middle, and high schools in the school district. One participant wondered why food was not fresher since "we live in an area that grows fresh fruit, and has U-pick farms." Several participants wanted different salads, and fresh spinach added

to salads. Students commented that “at elementary school we had a fruit and vegetable bar that’s included with the price of lunch” and they want that at high school, too.

Participants considered the “salads and sandwiches” as the freshest meals offered although some expressed concern about the salad dressings. “I usually buy a Caesar salad, but looking on dressing packet with 19g of fat, I usually only use 1/2 the packet because of the high fat content.” Participants suggested a “greater variety of sandwiches like they have at Subway” for the cafeteria. “Maybe we can have a different sandwich each day.” One participant suggested to “add yogurt with granola more often and different flavor of yogurt besides strawberry.” One participant stated, “I want better quality food. Instead of a cheeseburger, or chicken burger that’s fried have chicken that’s baked or grilled. Reduce salt. Show serving sizes and nutritional facts of food on the menu.” Students want to know what they are buying to make nutritional decisions before they buy the cafeteria food.

Participants noted a piece of fresh fruit comes with each meal, but those that work in the cafeteria stated, “not all students take a piece of fruit with their meal.” The fruit offered on a daily basis was apples and oranges and fruit cups in syrup. When asked what fruit they would prefer in the cafeteria that they would most likely purchase, participants suggested “grapes, plums, bananas, pears, mangos, strawberries, blackberries, melons, and blueberries.” “Have fruit salads instead of just vegetable salads.” One student suggested to price the healthier food less, stating it’s “easier to buy healthy foods if they cost less.”

Participants had many opinions on how to improve cafeteria food and help them make healthier choices. If there were more variety of healthy choices, perhaps more students would buy lunch and breakfast from the cafeteria.

What parents and community can do. Participants suggested several ways parents and community can be involved in helping children make healthier food choices. Participants suggested that parents could go to the "school board and suggest fresher and healthier items for the cafeteria." "Parents can talk to their kids and encourage them to make healthier decisions about food choice." One participant suggested "parents have healthier foods available so children can get them quickly." This relates to availability discussed earlier where children will eat what is quickly available when they are hungry.

Several participants suggested teaching students about nutrition in the "lower grades, like middle school." "Have parents think long term, change daily habits to live longer, have a healthier brain. Eat healthier at home: persuade parents to cook healthier starches, fruit, and vegetables; change up cookie for fruit; midnight snack eat fruit or vegetable." Parents can "talk to people who control the school cafeteria menu and suggest healthier food choices." One student stated she did a petition in fifth grade to get healthier food in the cafeteria at her elementary school, but it "didn't do anything."

In general, participants thought parents and the community could have an impact on healthier food choices in the cafeteria if they went to those that controlled the menu.

Increase consumption of healthy foods at home. Participants suggested parents should purchase more fruits and vegetables at home and have them readily available when adolescents are hungry. One participant stated that his parents purchase fruit and

vegetables but "they are in the back of the refrigerator and the unhealthier leftovers are in the front." Participants suggested a greater variety of fruit. "Put fruit on counter where I can see it first." Parents can "set a better example by eating healthier." Most participants stated parents ask them what they want to eat at home, and usually purchase what they request. Those from larger families suggested "stop buying bulk, processed food items from COSTCO or WinCo" since they are not healthy. "Remove high fat and salt items from home." Participants noted when they like something quick they may reach for a bag of chips. Parents might stop buying these items and instead buy fruit that can be quickly available.

Discrepant Cases

There were no discrepant cases in this study. Participants who went through the interviews answered all the questions. One participant could not remember what she learned in Health Science 1 about nutrition and foods, but answered all of the other questions.

Evidence of Trustworthiness

Credibility

Participants were forthcoming answering the questions. They were eager to share their decision-making process for selecting the food they ate. The value of the participant answers was true and meaningful. In conducting the interview, I restated the answers of the participants to validate that their answer was what they stated. There were instances when the interviewer restated an answer to a question to validate the true meaning of the participant's answer. The answers to the questions were logical and accurate. Interviews

were conducted in a confidential setting in order for participants to feel comfortable sharing their answers about food choice.

After most interviews, the participants started to leave forgetting they were getting a thank you $5.00 Jamba Juice card. Participants were surprised and said they forgot about the reward. This demonstrated to me that these randomly selected participants wanted to participate in the study even if they did not receive a reward. There are no adjustments to credibility from Chapter 3.

Transferability

Although transferability is primarily a goal of quantitative research, data gathered from this study may be transferable to other students in the Antioch Unified School District high schools that take a health science course in the ninth grade. The results of this study may be used to modify health science curriculum at the district level, which was implemented at the other two comprehensive high schools, and two continuation schools. The demographics of DLMHS are a microcosm of the Antioch Unified School District. The food served in the cafeterias was the same since it is prepared at a central location and is dispersed to all schools. Suggestions from this study to improve the cafeteria menu may be transferable to other schools by providing data to the district nutrition services department. These transferable methods were stated in Chapter 3 and do not need modification.

Dependability

I followed the methodology stated in Chapter 3. Adjustments were made to the time of the interview to accommodate students and parents. This did not change the

dependability of the data collected through the interviews. Data were digitally recorded and I took written notes, as stated as recording methods in Chapter 3. Three randomly selected participants turned 18 between extraction of the participant population, and the actual interview, and were included in the study since they had the same experiences at the school as the other students in the study population, and their age did not vary from 17-years-old by more than a few months. Strategies described in Chapter 3 to collect data were followed.

Confirmability

Strategies described in Chapter 3 for consistency were followed. An hour was allowed for the interview, no matter what time of day it was conducted. Data were digitally recorded and I took hand-written notes. Data were typed into Microsoft Excel 2010 to code and extract themes. The interview question guide was followed and all participants were asked the same initial questions. As with in-depth interviews for qualitative research, if I wanted more knowledge, additional questions were asked to extract a deeper meaning to the participant's answers or more meaningful answers to the questions.

Research Questions and Answers

The overall research question for this study was the following: What can adolescents tell us about their decision-making process about food choice and how they use nutrition knowledge to increase consumption of fruits and vegetables?

Subquestions were

1. How do students apply nutrition knowledge learned in Health Science 1 to the decision-making process choosing to eat fruits and vegetables?
2. What sources of information were persuasive in teaching the importance of eating fruits and vegetables?
3. What factors influence adolescents' decisions to eat fruits and vegetables, or not?
4. What recommendations can adolescents offer to make more fruit and vegetable choices available in the school cafeteria that would encourage them to eat more fruits and vegetables?

This section is organized by answering the subquestions which lead into answering the main research question.

Subquestion 1

Nutrition knowledge learned in Health Science 1 did affect the decision-making process of participants to eat fruits and vegetables. Some participants mentioned they changed their decision-making behavior about choosing fruits and vegetables based on the book *Chew on This* they read in English during ninth grade. One Asian, 12th grader shared that now "I choose meals at home. I typically increase fruits and vegetables I learned about foods' nutritional value; learned to choose food wisely." Another participant who was an African American 12th grader stated, "I learned to eat healthy: fruit, vegetables, and lean meat." A ninth grade Asian female stated, "Healthy foods are fruits and vegetables and I eat more based on what I learned from Health Science 1 and English. I eat less junk food."

An 11th grader who was male and Asian stated, "I changed my healthy food intake to more than unhealthy food intake. Healthy foods are vegetables, fruit, and less fat, oils and grease." A 10th grade, African American female changed her decision about food by "making sure I eat stuff that's not so high in calories." A Caucasian, 12th grade female stated that what she learned in Health Science 1, "Makes me want to eat healthier. Examples of healthy foods I eat are: whole grains, fruits, vegetables, and protein (nuts)." A 10th grade, female, Asian student changed her eating habits by reading labels: "I look at nutrition facts (labels) for calories vs. calories from fat. If fat calories greater than 50% it's unhealthy and I don't eat it." An 11th grade, Hispanic, male participant stated he learned about "simple carbs and sugars and to stay away from them." An 11th grade, African American female stated, when she and her family go shopping now, they "Especially buy fruits."

All of the 32 participants in this study stated they changed their eating habits to include more fresh fruits and vegetables after taking the Health Science 1 course. The curriculum taught in this course, and reading *Chew on This*, made them aware that the food they were choosing to eat, especially packaged and fast food, was not as healthy as they thought. As one participant stated, "I thought fast food was healthy since has lettuce and tomatoes in it" but learned it was not the healthiest choice.

Subquestion 2

Most students recalled learning about nutrition in their Health Science 1 class, which was a required class for freshman at DLMHS. The three top categories taught in Health Science 1 that had the most influence on the decision-making process to choose to

eat fruits and vegetables were reading food labels, the Good Eats project, and the USDA Food Pyramid activity. A category that was mentioned not taught in Health Science 1 but used as part of the ninth grade, integrated curriculum on nutrition was at the book *Chew on This*, which was mentioned 10 times.

The most mentioned category, mentioned 16 times, was learning how to read food labels. Several students mentioned that the learning of the high content of salt and saturated fats in processed foods taught them that these foods were not the healthiest choices. A Caucasian, female, 11th grader remembered "(In class) we looked at food labels ourselves and read labels in class. The teacher brought in food labels on food packaging." When this 11th grader decided what to eat, she stated from the label reading activity, she learned to "stay around the perimeter of the grocery store for fresh foods." An African American, female, 10th grader recalled, "The food labels I learned in class broke down carbs, sugars, and I now read them before I eat packaged foods. Healthy foods are vegetables and fruits." A 12th grade, Hispanic male remembered, "I learned about the high level of fats and to avoid it."

The second category mentioned 11 times during the interviews was the Good Eats project and learning about the effects of unhealthy eating on the risk of acquiring a disease or condition. Several students mentioned diabetes, obesity, and heart disease as adverse effects of choosing an unhealthy diet. A Hispanic female, 11th grader mentioned that from one of the student-created video presentations from Good Eats, she learned about "nutritional scares like obesity and diabetes, plaque, and heart attacks" from eating unhealthy foods. An 11th grade, African American female remembered, "We talked

about obesity and other diseases affected by eating unhealthy. It made me think twice before I ate certain unhealthy foods because I didn't want to get those diseases." This participant stated during the interview she was on the Jenny Craig diet to lose weight. A 12th grade, Caucasian participant remembered, "Good Eats taught how choosing unhealthy food results in diabetes and heart disease which influenced me to eat healthier. I found out heart disease and diabetes runs in family and makes me want to eat healthier." All of these participants described eating healthy as eating more fruits and vegetables.

The third category mentioned six times was learning about food groups by using the USDA Food Pyramid. Students went to an online web site about the Food Pyramid (recently changed to a healthy eating dinner plate graphic), and recorded their eating habits for a week. During class, they entered their recorded food choices into the web site which showed them what vitamins, nutrients, and food group recommendations they met or did not meet. A ninth grade, Asian female stated, "I liked the Pyramid that showed salt and fat content of food I ate." A 10th grade, Hispanic female stated the main thing she remembered about nutrition in Health Science 1 was" definitely the Food Pyramid. It helped me realize what I was eating a lot of was affecting me and what I was eating less of I needed to eat more of." An example was "I learned caffeine isn't good for growth and the web site had funny presentation video about it." Another ninth grade, female, Asian participant stated in Health Science 1 she learned about the "Food Pyramid and realized I wasn't getting all my fruit and vegetable servings which was eye-opening. Now I'm trying to get more fruits and vegetables, but old habits are hard to change."

In ninth grade English class, which was required for all freshmen, they read the book *Chew on This*, which is a teenage version of the book, *Fast Food Nation*. *Chew on This* is about the health hazards of eating fast food, how fast food is processed, and how it can contribute to obesity. When DLMHS was founded in 2008, the faculty met and decided *Chew on This* would be good complimentary, cross-curricular material for students to read for the Good Eats project. *Chew on This* was approved by the Antioch Unified School District Curriculum Committee and was a required text for all ninth graders at the school. Participants in the study remembered reading this book and how it contributed to their food choice. A male, African American senior remembered "reading *Chew on This* and how fast food is processed and how sizes of portions at fast food increased." A female, freshman, Asian student commented that "*Chew on This* explains the junk food industry. I decided to eat healthier. It's disgusting what they do to animals. I cut back on eating fast food." A female, Asian 10th grader commented, "but I won't eat at McDonalds from learning about fast food reading *Chew on This.*" A Caucasian, female 11th grader stated, "We watched the movie, *Super Size Me*, along with reading *Chew on This* which influenced me not to eat fast food." This book had an impact on the decision to eat healthier which, to these participants, meant not eating fast food.

Based on participant answers, the activities of reading food labels, the Good Eats project, the USDA Food Pyramid, and reading *Chew on This* in English class had a positive effect on teaching students the effects of unhealthy eating and that deciding to eat fruits and vegetables is a healthy choice. Information learned in the Health Science 1 course included activities of reading labels on packaged foods, being aware of food

groups using the USDA Food Pyramid, and learning that unhealthy eating may lead to diseases such as diabetes, heart disease, and obesity through the Good Eats project. Reading *Chew on This* also led to decisions to eat more fruits and vegetables over packaged and fast food for these study participants.

Subquestion 3

Participant mentioned several factors that influenced their decision to eat fruits and vegetables, which they considered healthy food choices. Family, availability, and taste were mentioned most often. Friends were a factor of influence, but only when participants were at a friend's house or eating away from home with their friends.

Family. The factor of influence mentioned the most was family, 50 times, and female head of household, including mothers and grandmothers, was mentioned 46 times as having the most familial influence. Female heads of household were most influential because they did the family food shopping, decided to purchase fast food or not, and did most of meal preparation. Participants mentioned the family as a primary factor in food choice for the evening meal and in what was available to eat at home. A 12th grade, African American male stated his mother had the most influence on his food choice because "Mom buys groceries. She asks me what I want and gets fruits and vegetables." Another participant, who was an African American, female 10th grader stated, "my parents buy the food" for home.

Availability. Availability related to physical feelings of hunger was the second most influential factor on participant food choice. This factor was mentioned 23 times. When a participant was hungry or wanted something to eat immediately, the food that

was available was a factor in deciding what to eat. Many participants stated they wanted something fast and quick that needed no or little preparation. One male, Asian, 12th grade participant stated when he was hungry he wanted "to get what's in reach; whatever is closest." Many participants stated they reached for "chips" or other prepackaged snacks that were in the pantry. "I want something now and a bag of chips is easier than getting a bag of greens" which needs some preparation. Some mentioned they ate whole fruit that was displayed on a kitchen counter at home as expressed by a female, Hispanic ninth grader who grabs "fruit in a bowl on kitchen counter" after school. Another participant commented that he wanted something quick after school. "After school, I grab a snack, crackers like Ritz or cheese-its. We gave cookies and fruit out, but most times go for something quick and easy in small bags." Deciding on a healthy food choice when an adolescent is hungry and wants something immediately involves visual identification of what food is quick and available.

Taste. Taste; in conjunction with food appearance, quality, and what is quickly available; was a factor in what participants chose to eat. Many stated that if the food did not taste good to them, they would not eat it. Even if food tasted good in the past, it still had to look good now for them to choose it, as stated by one female, Asian participant who picked food based on "What seems appealing; taste and appearance." An 11th grade, Asian male stated he picked food based on, "What's good, what I like by taste." A 10th grade, African American female stated, "Not all healthy food is tasty; I will choose a hamburger over salad" because the hamburger tastes better to her. Taste is a personal preference. In order to make fruits and vegetables taste better to adolescents, individuals

would need to be asked their definition of what tastes good to them for individual fruits and vegetables.

Friends. Participants mentioned friends as a factor on how they chose what to eat when they were visiting a friend's house, or out at fast food or other restaurants with friends, or they were influenced by friends by eating what they were eating to avoid feeling different. Participants stated they usually ate what was at a friend's house even if they knew it was not healthy to avoid offending the friend and their family.

When eating outside their home, participants were influenced by what their friends ate. When eating out with friends, one participant stated, "when go out, I will compromise what I want to eat to be part of the group." Another participant shared, "if my friends are eating junk food, I'm more likely to eat junk food, too." Another participate stated, "Not to be mean, but those that eat more and are bigger, you might tend to eat more as well." Another participant commented, "Sometimes, when I go out with friends to a movie and they're getting a snack, I'll eat what they're eating."

However, eating with friends at school was not a factor that influenced what participants ate, "At school during lunch we all grab different things. I have friends who like to eat off my food because they like what I grab (buy)."

Cost. Cost was a factor when participants went to fast food or a restaurant to eat with or without their family. They tended to select less expensive items to eat when they spent their own money. One participant stated when he is out with friends he wanted to "Buy something cheap, but may not be healthy." Another stated when he and his family go out to eat, "We have a big family and would buy cheap stuff so there's enough for

everyone." Most participants did not think cost was a factor when their family purchased food to eat at home, but did think purchasing food at a grocery store versus a restaurant was less expensive. One participant stated that for his Good Eats project, he and his group "compared cost of food at the grocery store and fast food places, and found the grocery store food was cheaper. Fast food is convenient but not cheaper."

School. School was a factor for students who purchased breakfast and lunch from the cafeteria. They were limited to what they could purchase based on the daily school menu. They had no choice but to pick an item from the daily menu, so did not consider school a factor because they did not have a range of choice, "can't control what kids eat at school."

Physicians. Physicians were only a factor for students who had a medical condition or who needed a physical to participate in sports. This factor only influenced five study participants. These participants listened to physicians tell them that they should eat healthier by eating more fruits and vegetables, eat "iron due to anemia," and to get more calcium in their diet. One participant stated he was turned off by his physician who lectured him about his diet.

Internet and television. The Internet and television were not factors influencing the participants' decision about food choice. The only media factor influenced by a few participants was television advertisements. One Caucasian, 12th grade, male participant stated he thought in food commercials there were "subliminal messages that tell me it (food) sounds good and I will want it." A 10th grade, female, Asian participant stated TV commercials "do influence me like vitamin commercials that say they will make my hair

more beautiful." Another participant commented, "TV ads make food look good and I may want that. Advertisements that make food look healthy, like Nutragrain, may make me want it. If they make it look healthy and taste good then I'll want to eat it."

Subquestion 4

Participants had many suggestions for improving fruit and vegetable availability for the school cafeteria. Participants recommended ways students, including themselves, their parents, and the community could offer fruits and vegetables that would encourage students to increase their consumption.

Students. Participants recommended a greater variety of fruits and vegetables, but primarily fruit. The school cafeteria serves apples and oranges as whole fruit and fruit cups in syrup. Several of the participants work in the cafeteria and observed most students do not pick a fruit with their breakfast or lunch, even though it is included in the cost. "Nothing offered at breakfast is healthy. We offer hash browns, pop tarts, bagels, Wednesday we offer cinnamon rolls; garbage. We do have unripened fruit, grape juice and water." Participants noted that the cafeteria put apples and oranges on the snack bar cart along with the ice cream, cookies and chips, but no one took the fruit.

Most participants recommended adding more fruits to the menu, and making the fruit fresher. One participant stated he would like to see "fresher produce. Get food locally from farms to maintain nutrition." This was a 12th grade, African American male who knew the school is located in a farming district that produces fruit for local farmer's markets. DLMHS's food comes from a central location in the school district that purchases food from a national company that does not buy local produce. Fruits that

participants recommended to be add to the school cafeteria menu that students might buy were blueberries, strawberries, bananas, mangoes, pears, grapes, and plums. Participants recommended more fruit salads, and not just fruit in prepackaged cups with syrup. One participant mentioned that when she was in elementary school, "The elementary school had salad bar with fruits and vegetables. It was free and I could have as much as wanted. It was included in the lunch fee." She would like to see this at DLMHS. Other participants recommended a salad bar in the cafeteria. "I prefer salad bars. In my brother's elementary school he has a salad bar that's included with the price of lunch," and "Offer grapes and salad bar."

Parents and community. Participants thought that their parents and the community do have an impact on what children chose to eat. This correlates to the family being the primary factor that influences adolescent food choice. Participants suggested parents could ask the school district to offer healthier food choices. One participant suggested parents "eat healthier and set a better example" and another stated parents and the community should "Guide children and show us how (to eat healthy)." Another male, Hispanic participant suggested that parents "influence everybody like schools to tell everyone how to eat healthy. Implement nutrition curriculum in all schools before kids start getting into eating habits like in fifth, sixth, and seventh grades so they'll know what will happen to them if they don't eat healthy." One participant suggested, "If everyone strided to change one thing and talk to the School District to change one thing (in the cafeteria) that would help them out," and another stated, "teach nutrition at all grade levels" so students will pick healthier food.

Participants did think parents should have input into what their children are eating at school. One participant said that parents and the community should "show the cafeteria how foods they serve us are influencing our body." This participant mentioned how greasy the pizza was and stated this comment related to too much grease contributing to heart disease and other chronic conditions. Another participant stated parents should have "input into what they want their child has to eat in the cafeteria." Parents should ask the cafeteria to "bake it," meaning the food, instead of frying food students eat, and "They (parents) would say not as much fried food, different variety of salads like 2-3 per day, and a choice of a few different fruits per day."

One participant took a different point of view and stated, "Parents need to talk to their kids and encourage healthier decisions. They can't control what kids eat at school. The community can help by advertising what's healthy in cafeteria" to students." There should be an "Education night for parents on what to do to eat healthy, make correct choices, life choices" to influence their children about healthy food choices. "Teach teens how to eat healthy, how to avoid fast food, and teach them how to cook healthy food. Since we're becoming adults, teach us how to shop in grocery store to pick healthy food," stated a female, Caucasian participant.

Participants in this study expressed that parents and community can influence what is served in the school cafeteria, and have influence over what needs to be taught about healthy eating. Suggestions included teaching nutrition in the schools, offering healthier choices in the cafeteria, teaching adolescents to cook healthy, and how to shop

in the grocery store for healthy foods. Study participants thought that community and parents can influence what is offered in the school cafeteria.

Summary

Participants in this study did use nutrition knowledge they learned in Health Science 1 to make food choices. Twelfth graders that learned about nutrition 3 years ago retained that knowledge and used it to make healthy food decisions. All grade levels stated they know that fruits, vegetables, grains, and protein were healthy choices. They understand too much fat and salt was not healthy. They learned how to read food labels on packaged and processed foods and they understood that too much sugar and saturated fats are not healthy eating. Adolescents who learned about nutrition in Health Science 1 used that knowledge to make healthy food choices.

Study participants stated family, especially adult, female members of the family, have an influence on their food choices. If there was healthy food in the house purchased and cooked by a family member, adolescents decided to eat it. Adolescents in this study suggested healthy food options to the person who shopped, which included fruits and vegetables, and the adult who bought food to purchase these healthy options. Adolescents can decide what is healthy and ask their parents to purchase it.

Participants also stated that when they want something to eat immediately at home, they picked whatever was convenient. Time was important in that they wanted something healthy that did not take a lot of time to prepare. They suggested parents have healthy options, like fruit, readily available to them, especially when they are hungry. Participants said they will most likely take a bag of chips or other convenience food, but

if there are healthier options, like fruit, within sight and reach, they will choose those over chips and cookies. Taste was important to them and they will eat what tastes good to them, even if it not was the healthiest choice.

Cost was primarily important when they were out with friends and needed to spend their own money on food. Participants did not think cost affected their family in purchasing healthy food like fruits and vegetables. Friends influenced what they ate mostly when they were out socializing at a restaurant or fast food establishment. Friends did not influence their eating decisions as frequently at school.

Study participants stated they did not pay a lot of attention to food advertisements on TV, but did notice those ads were not about healthy foods, but mostly about fast food. They told us that fast food was not healthy, and they know if they ate it, they would not have as much energy as when they ate healthy food like fruits and vegetables. Most participants ate at home and ate at fast food less after reading the book *Chew on This* in their ninth grade English class. This, in conjunction with the Health Science 1 nutrition information, did make them choose healthier food.

Participants thought the cafeteria food was not as healthy as it could be. They suggested a salad bar, a bigger variety of salads and sandwiches, fresher produce and less pizza, hamburgers, and processed foods. Many expressed how greasy the pizza was that was served in the cafeteria. Participants gave specific suggestions for fruit and several did not understand why there could not be a bigger variety of fruit since the school is located in an agricultural area where U-Pick farms are available to the public. These adolescents

stated that they knew fruits and vegetables were healthy choices and knew they needed to choose them over processed foods.

After data analysis based on responses from the participants, these factors were categorized by major and minor influences. Some internal and external influences are in both categories. The factors in Figure 3 that follows, categorizes factors that influence adolescent food choice most frequently based on participant responses:

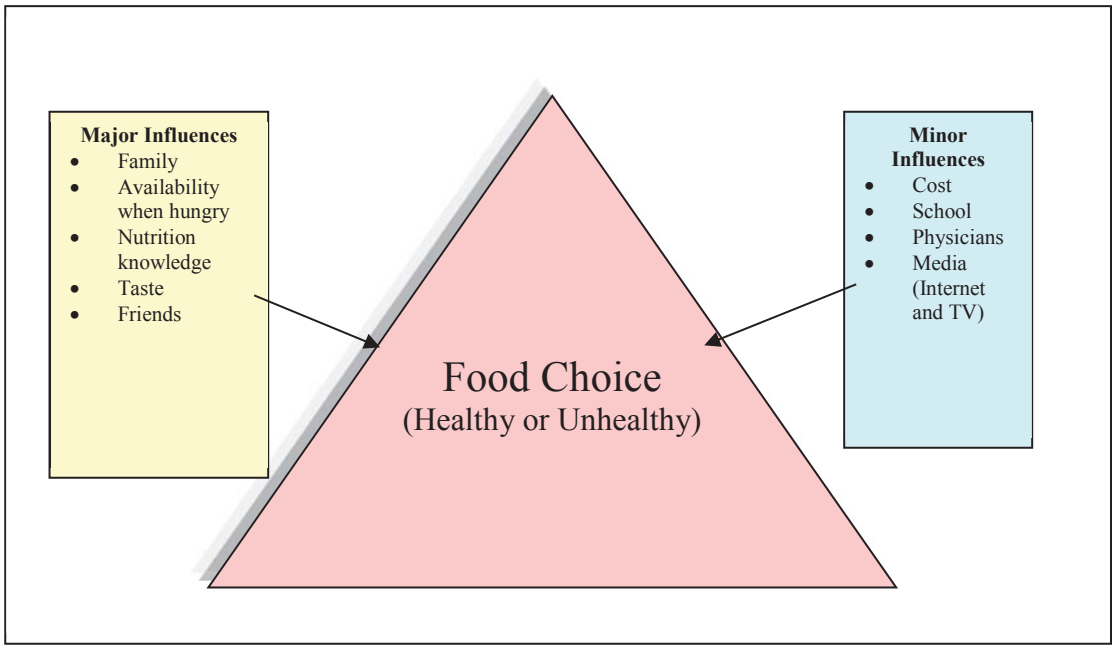

Figure 3: After data analysis: Factors influencing adolescent food choice

Data analysis as described in Chapter 3 included comparing participant responses with GPA, ethnicity, and age. The average GPA of participants was 2.90. This did not seem to have an effect on participant answers or how they decided what to eat. Ethnicity did not seem to play a role, and only four participants mentioned they ate ethnic food as a primary choice. These four did mention that their choice of ethnic food contained

vegetables and other healthy elements. Gender had a slight effect with more males stating they noticed hunger as a factor in choosing food that was quickly available, and females noticed mood as a factor when choosing something sweet or salty. Age and grade level did not seem to alter their decision-making process to select healthy foods or not. All participants in this study took the Health Science 1 class, completed the Good Eats project and read the book *Chew on This,* which contributed to their knowledge of healthy foods and the effects on their body.

These demographic factors are explored further in Chapter 5. Chapter 5 will include a discussion of the emerging themes related to data analysis and literature. Specific recommendations for social change and further research are discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to explore insights and provide a deeper understanding on the decision-making process of how adolescents choose what to eat. The study was conducted to provide insights into how adolescents choose what to eat that may provide context for health education and promotion programs to prevent and reduce obesity in this age group. Individual interviews using guided questions were completed to explore, describe, and understand the decision-making process of ninth through 12th graders to determine factors influencing food choice including the purchase of fruits and vegetables during lunch at DLMHS. Insight into factors that might influence change and future development of health science curriculum related to nutrition information about healthy food choices were explored in the interviews.

The overall research question for this study was the following: What can adolescents tell us about their decision-making process about food choice and how they use nutrition knowledge to increase consumption of fruits and vegetables? Subquestions that guided the study were

1. How do students apply nutrition knowledge learned in Health Science 1 to the decision-making process choosing to eat fruits and vegetables?
2. What other sources of information, besides Health Science 1, are persuasive in teaching the importance of eating fruits and vegetables?
3. What factors influence adolescents' decisions to eat fruits and vegetables, or not?

4. What recommendations can adolescents offer to make more fruit and vegetable choices available in the school cafeteria that would encourage them to eat more fruits and vegetables?

Context and Nature of Study

Obesity and resulting chronic diseases such as type 2 diabetes and hypertension, is an increasing problem in the United States among adolescents (CDC, 2006). Schools can play a role in providing nutritious meals to students during breakfast and lunch (AMA, 2004). Adolescent decision-making strategies and behaviors regarding food choice may have an impact on reducing or preventing obesity in the United States (Merrick et al., 2004). Food choice was the primary contributing factor to obesity in adolescents (The Obesity Society, 2009). The Wellness Council at DLMHS consisted of the school counselor and parents who were concerned about wellness and the health of the student population and who wanted to assist in students making healthy food choices at home and with cafeteria purchases. DLMHS provided nutrition curriculum to all ninth graders through the Health Science 1 course and included a cross-curricular project called *Good Eats*, which involved all subject areas required for ninth grade.

Neumark-Sztainer (1999) emphasized the importance of asking adolescents' opinions when designing or changing programs such as cafeteria menus. The qualitative, individual interview methodology was used to gain insight into the decision-making process of adolescents in the ninth through 12th grade to determine factors in food choice. This methodology allowed for exploration of the decision-making process and factors involved in food choice by adolescents.

Thirty two adolescents were individually interviewed for this study. Interview times of an hour were allocated. Participants were randomly selected from the student population excluding students who were enrolled in my classes. Eight individuals were randomly selected from self-identified ethnic groupings determined by the State of California Department of Education for reporting purposes: African American, Asian/Pacific Islander, Caucasian, and Hispanic. Interviews were conducted using the same guided interview questions. Each participant received a $5.00 Jamba Juice card upon completion of the interview as a thank you for participating.

A secondary purpose of this study was to apply participant data from the interviews to improving and developing Health Science 1 curriculum at DLMHS for ninth grade which includes nutrition education. Based on data from this study, recommended changes to cafeteria menus may be applied to the other schools in the Antioch Unified School District. Conclusions and data were reported to the school and school district community, including the Wellness Council.

This chapter consists of four sections. In the first, I analyze, interpret, and discuss the findings for each research question in the context of developmental theories by Bandura, Erikson, Kohlberg, and Piaget and peer-reviewed articles from Chapter 2. The second section includes limitations to the study. In the third section, I describe recommendations for future research and implications for positive social change at the school and school district level.

Summary of Key Findings

Adolescents have insights into how they decide to choose healthy versus non-healthy foods. Nutrition education taught by teachers in Health Science 1 has an impact on the food choice decision-making process of adolescents at all age, GPA, and ethnicity levels. Factors influencing food choice for participants in this study were family (mothers), availability, taste, and friends. Minor influences were cost, school, physicians, and mass media (e.g., Internet and television). Participants wanted to eat healthier to avoid chronic disease such as type 2 diabetes, heart disease, and obesity. Although influenced by external and internal factors, adolescents do actively engage in deciding what to eat.

Interpretation of the Findings

Subquestion 1

Interpretation of data. Participants mentioned that they did apply knowledge learned in Health Science 1 during their ninth grade studies to their decision-making process on food choice. They learned about food content and what was healthy or not by using the food pyramid and reading nutrition labels on packaged foods. Participants at all grade levels, ethnicities, and GPA mentioned these activities as useful in their decision-making process to select healthy food. Participants in all groups stated that they knew that fruits, vegetables, whole grains, and protein are healthy and excess salt, fat, and sugar in food was not healthy. Since all participants went through the same Health Science 1 curriculum in ninth grade, participants did show that they applied what they learned when deciding what to eat and as one participant stated, “I eat less junk food.”

Participants mentioned the book, *Chew on This*, read in their ninth grade English class, as a contributor to learning that fast food was considered unhealthy. Several participants stated that reading *Chew on This* changed their behavior; they ate less often or never at fast food establishments. In some cases, the participant did not want to eat at fast food places even though the family did, and in other cases, the participant only ate fast food when the family or their friends chose to eat there. In these instances, the participant did not choose to eat fast food, but did so with the influence of peers and family.

Participants remembered their culminating project for ninth grade called Good Eats. This project took nutrition information learned in Health Science 1 and other ninth grade classes by applying it to a specific topic. Many participants remembered applying their nutrition knowledge to prevention of specific diseases like type 2 diabetes or hypertension. Participants at all grade levels, even 12th grade, remembered this project and stated it affected how they decided to choose food to eat and that they still remember that knowledge and apply it to their food choices today.

Participants stated that since they learned about healthy eating choices in Health Science 1, they knew about healthier food choices when purchasing food in the cafeteria. Many participants stated that they know that the pizza and hamburgers in the cafeteria were less healthy than fruits and vegetables due to the high salt and fat content. Participants stated that they wanted to see more variety of fruit offered in the cafeteria for purchase. They had concerns about food offered on the cart located outside of the main cafeteria food line. The cart contained ice cream and cookies. Participants had concerns that donuts and Pop Tarts were offered for breakfast. By mentioning these items, they

learned in Health Science 1 that fruits are a healthier option than these prepackaged foods offered by the cafeteria. They learned from reading labels that fruits and vegetables were healthier food choices, and other options that contained more fat, salt, and sugar were not as healthy. They made healthier purchases in the cafeteria and know what to avoid.

Participants used the knowledge learned in Health Science 1 to include more fruits and vegetables in their daily diet. They stated that they learned packaged and fast food was not a healthy choice. All participants in the study stated that they modified their diets to make healthier food choices based on what they learned in Health Science 1.

Subquestion 1 analysis of developmental theories. Bandura (1977) proposed that response sequences affect behaviors based on imagined symbols. Using food labels and the food pyramid as symbols in teaching healthy nutrition to ninth graders did have an influence on healthier food decisions for the participants. Many participants recalled these two activities as influencing their decisions to select healthy food, such as fruits and vegetables. In their responses, participants supported Bandura's theory that symbols and responses to those symbols affect decision-making and, in this case, decisions about food choice.

Bandura (1970) believed that self-efficacy influences decisions and adolescents need to be confident in their decision-making capabilities. Based on participant answers to interview questions, the participants were confident in knowing the difference between healthy and unhealthy food choice with information they learned in Health Science 1. Armed with knowledge about healthy food choice, participants in this study were confident that they knew how to make decisions to choose healthy food.

Participant responses to this question did not relate to Kohlberg's (1984) hierarchical stages of moral development. There were no responses by any age group stating it was immoral or wrong to eat unhealthy food, except in relationship to it causing disease (e.g., type 2 diabetes) which is a physical illness-based response and not a moral one.

Piaget (1978) believed that adolescents make decisions based on abstract concepts. Participants supported this theory based on combining concepts from different course work into the Good Eats project, and relating nutrition concepts learned in Health Science 1 and reading the ninth grade English book *Chew on This.* Participants took concepts from these learning activities and created abstract concepts that eating unhealthy can lead to later disease and poor health outcomes.

Erikson (1980) theorized that behavior is affected by observing respected results and positive feedback from those adults at school. This was not specifically stated by participants, but implied when they stated that they learned about healthy eating habits in Health Science 1 and believed what they heard from the teacher that affected their decision choose healthy food. Erickson (1980), Piaget (1978), and Kohlberg (1984) agreed that chronological physiological and cognitive aging lead to better decisions. Participants at all grade levels did remember what they learned in Health Science 1 about healthy food choice, and expressed that they use it in their decision-making process when choosing food to eat. In analyzing the data, participants at all age levels mentioned that what they learned in Health Science 1 did affect their decision-making process and

encouraged them to make healthier food choices, such as eating more fruits and vegetables.

Kohlberg (1984) and Bandura (1977) theorized that cognitive change occurs with interactions between people and their environment. By exposing participants to knowledge about healthy eating using the Health Science 1 curriculum, they integrated that knowledge into their decision-making, thought processes to eat healthier. Teaching constitutes an interaction between the students' environment and personal interaction with instructors.

Kohlberg's (1984) theory of moral development in relation to cognitive development has the least application. Although all of these theorists agreed that adolescents seem to make better decisions as they age, this did not apply to this question since all participants were exposed to the same knowledge in ninth grade and expressed that they used it in making food choice decisions.

Bandura (1977), Erikson, (1980) and Piaget's (1978) theories on cognitive development seem to be the most appropriate application in explaining the decision-making process for this first subquestion. Interaction with external factors such as relationships with people and the environment through symbols and interpretation of those symbols seemed to have the most effect on the decision-making process to select healthy foods.

Subquestion 1 analysis of peer-reviewed literature. Cargo et al. (2003) developed a framework for adolescent participation in health education and promotion activities. Cargo et al. determined that adolescents chose healthier behaviors when they were modeled by a caring adult. Participants in this study mentioned they developed behavior change by being exposed to knowledge about healthy food. They may have perceived the teachers to be caring adults, thus adding validity to the decision-making process to choose healthier foods, although modeling of a caring adult was not verbally expressed by the participants.

Cothran and White (2002) determined that adolescents delay their decision-making skills into their postsecondary stage. Based on participant responses in this study, given the knowledge about healthy nutrition, participants in all age groups did not delay using this knowledge to make healthy food choices.

Subquestion 2

Participants stated that their family, especially the female head of household of mother or grandmother, did influence their decisions on what to eat. Mothers or grandmothers did most of the shopping and cooking and participants ate what was offered to them at home. In some cases, the participant influenced the food shopping decisions of the family resulting in healthier eating choices such as more fruits and vegetables. In this way, learning about healthy eating in Health Science 1 influenced food decisions for the participant and their family and the female caregiver was a source through purchasing food that was eaten at home.

Sources of information and activities mentioned most frequently in participant interviews about the importance of eating fruits and vegetables were (a) reading food labels, (b) the Good Eats project, and (c) the USDA Food Pyramid in Health Science 1 class. Another influential source of information mentioned by participants was reading *Chew on This*, which was required reading for ninth grade English and was related to the theme of healthy food choice.

Stuart, Broome, Smith, and Weaver (2005) explored adolescent weight loss interventions by conducting an integrative review of literature to describe weight loss interventions with adolescents ages 11 to 19 from 1980 to 2003. Stuart et al. (2005) found inconsistency in classroom education about nutrition and could not compare outcomes or determine effectiveness. Since Health Science 1 curriculum at DLMHS has been fairly consistent over the past 4 years, and taught by only two teachers, this consistency led to effective outcomes in teaching adolescents who took this class how to make better food choices. Consistency in doing the Good Eats project, reading food labels, using the USDA food pyramid, and all ninth graders reading *Chew on This* in English class has been consistent. These activities were mentioned many times in participant interviews as having an effect on food choice decisions and learning what was healthy and unhealthy food.

Sources of information that were not persuasive in food choice decisions were the Internet, social media, television, and cell phone use, like texting. Participants mentioned they did see food commercials and advertisements on the Internet and television, but it did not influence their food choice since they learned these foods, such as hamburgers,

were not healthy. A few participants mentioned they occasionally wanted to eat what they saw in commercials, and some did go and eat what was advertised, but they did not feel good after eating that item and cognitively knew it was an unhealthy choice. Participants stated that social media and cell phones, including texting, were not an influence on their food choices.

Subquestion 2 analyses of developmental theories. Social learning theory involves social interaction and a bidirectional interactive approach to learn desired behaviors (Bandura, 1977). Participants mentioned the Good Eats project as a way to learn healthy eating behaviors, along with reading food labels and learning about the food pyramid. The Good Eats project was a group project of three to four students applying healthy eating knowledge to a human, physiological problem and involved several weeks of peer-to-peer interaction with consultations with the teacher at periodic intervals to make sure students are on track. As described by the participants, the food pyramid was an interactive assignment with a computer program and the individual student tracking what they eat over a 1-week period. The food label activity involved reading food labels on packages of food typically eaten by adolescents and measuring out actual serving sizes using measuring cups and bowls (e.g., breakfast cereal). The teacher facilitated these activities and interjected pertinent information while the activities were taking place, but did not lecture. Participants stated that these activities were the most meaningful to them in learning about healthy portion sizes and food choices. Bandura (1977) stated that this bidirectional approach, as opposed to lecturing, was the most effective way to learn

desired behaviors. Based on participant data, these activities support Bandura's social learning theory to give information on choosing healthy foods.

Kohlberg's (1984) Level III in the hierarchy of moral development states that adolescents focus on self as a member of the larger society. The Good Eats project was also an advocacy project where students advocated to the community for healthier food choices based on their topic. Being a part of this project was an example of Kohlberg's theory at Level III. Participants expressed in the interviews how doing this project made them realize how their food choice affects themselves, their families, and society. Participants related this project to themselves by realizing if they did not choose healthier food, they could develop diabetes, heart disease and become obese and this translated into a greater burden for themselves and society. One participant equated the knowledge she gained from the Good Eats project to a "nutritional scare."

Ninth graders are ages 14 to 15. The Good Eats project starts out with giving students nutrition knowledge related directly to their eating habits by reading labels and doing the USDA food pyramid. Then this knowledge was applied to a specific topic for the Good Eats group project. This method follows Kohlberg's (1984) theory that new concepts need to be tailored to specific age groups based on their needs. Age-appropriate material about food choice was presented appropriately and retained by the participants, which led to continued healthy food choice decisions in the participant group as they matured.

Kohlberg's (1984) theory states that parents, culture, and religion define normal morality. Two stages of moral development are (a) willingness to agree with society on

what is right and wrong, and (b) responsibility to family. Based on participant responses that female head of households influenced their food choices, Kohlberg's concept of responsibility to family applies. Parents, especially mothers and grandmothers, are an important source of information and influence healthy food choice in this study group. Kohlberg believed that mothers who communicate honestly with their children have a positive impact on their children's decisions, which correlates to participant responses for this study.

Bandura's (1977) social learning theory and Kohlberg's (1984) stages of moral development are applicable to sources of information influencing an adolescent's decision to eat more fruits and vegetables. The use of age-specific activities and parental influence on adolescents was a source of information that they will use in the decision-making process to choose healthier foods.

Subquestion 2 analysis of peer-reviewed literature. Miller (2001) determined that adolescents needed age-appropriate information from trusted nurses to incorporate it into better decision-making. Langer and Warheit (1992) determined that a source must be trusted in order for an adolescent to incorporate the information into the decision-making process. Teachers are considered trusted sources of information. Based on participant answers to interview questions, they trusted the information they received from their own research guided by teachers. Because participants trusted the teachers, they incorporated new concepts and knowledge into their decision-making processes to pick healthier foods.

Participants mentioned mothers and grandmothers as sources of influence to food choices. These are trusted individuals and participants trusted information from these sources to help them make healthier food choices. Participants stated that they had input into food purchases and were allowed to request more fruits and vegetables which their mothers or grandmothers purchased for them. Short and Rosenthal (2003) concluded in their study, that female adolescent decisions to engage in sexual intercourse was influenced by their mothers. Participants in this study also stated that their mothers influenced their decisions to eat healthy food. Mothers or other female heads of household informed about nutritional value of food have an influence on healthy food decisions for adolescents by purchasing healthier food choices for the home.

Adolescents who acquire information from a trusted source, such as teachers or mothers, are more likely to trust and retain that knowledge and use it in their decision-making process. Many participants in this study specifically mentioned mothers and grandmothers as a source of information and food that influenced their food choice decisions. Information from teachers was trusted as stated by using the information from Good Eats, packaged food label reading, using the USDA food pyramid, and reading *Chew on This* in the decision-making process to choose healthy versus unhealthy foods, including fruits and vegetables.

Subquestion 3

Based on participant responses to questions in the individual interviews, major and minor categories were developed that influence an adolescent's decision to eat fruits and vegetables, or other foods. Major categories that influenced food choice were (a)

family, (b) availability, (c) taste, and (d) friends. Minor categories of influence were (a) cost, (b) school, (c) physicians, (d) Internet and television, and location of fast food, other restaurants, and grocery stores.

Subquestion 3 analyses of developmental theories. Participants of all ages and ethnic backgrounds mentioned their family, and specifically their mother or grandmother, as a factor influencing their decision to choose healthy foods. Many mentioned that their mother was the primary grocery shopper or decision-maker on what they would eat at meals, especially the evening meal when the family was together. Several participants mentioned they influence their mother's food buying patterns by requesting fruits and vegetables based on what they learned in school as a healthy food choice. Bandura (1977) and Erikson (1980) concluded that family, peers, and partners, as external factors, influence decision-making behaviors. Effective behavior modeling of a respected adult may influence an adolescent's decision and decision-making is a constant interaction between family and peers (Bandura, 1977). External influences alter behavioral responses (Bandura, 1977). Participant responses stating that their mother was a major influence on their food decisions by purchasing healthy foods, whether influenced by participants or not, reinforces Bandura (1977) and Erikson's (1980) theory that the family as an external factor and behavior modeling by adults is an important influence in adolescent decision-making about food choice.

Availability was mentioned many times as a factor in adolescent's deciding what to eat. Most times participants mentioned availability in relationship to hunger when they came home from school and wanted something to eat immediately. Participants of all

ages and ethnicities stated that when they were hungry, they picked the easiest available food to eat, which in most cases was prepackaged foods that required no preparation. They also stated they picked foods that were immediately visible and available. Participants stated that if there was healthy food, such as fruit, visible on a counter when they got home from school, they were more likely to select that than a prepackaged food like chips. Participants expressed that they knew what healthy foods were, such as fruits and vegetables, and would choose those over prepackaged foods like chips if they were readily available. In many cases, fruits and vegetables were not available when they got home from school, and they did choose the unhealthy, prepackaged foods because they were hungry.

Bandura (1977) stated that life experiences are a contributor to better decision-making behavior and decisions are less likely to be disrupted by emotions and impulsiveness. Impulsiveness may relate to availability of food when it relates to physical hunger. Even though participants knew the definition of healthy food, including that fruit and vegetables are healthy, when experiencing hunger, impulsiveness may take over by retrieving the quickest source of food to quell that hunger. Even life experiences of learning what healthy food choices are will not overcome the decision to pick a food that was quick to satiate hunger, even if the adolescent knew the food choice was not healthy. This leads to making sure healthy food choices are available and within sight of a hungry adolescent to promote a healthy food decision.

The third major factor that influenced food choice in this study was taste. Taste was an internal factor. Participants stated they did not eat food that did not taste good.

Several participants mentioned they chose food based on their mood and what would taste good. For example, they chose food based on a need for it to taste salty or sweet. Kohlberg's (1984) theory of moral judgment does not apply to adolescent decision-making on whether to eat food based on its taste. Piaget (1978) theorized behavior is internalized and preserved until situations warrant a behavior change that is advantageous to the organism. Application of this concept would make sense only when an adolescent determines they need food that is salty versus sweet.

The final major factor was participants mentioned friends, or peers, as having influence on their food choice decisions. Peers were not mentioned as a major source of information in determining what to eat, including fruits and vegetables. This may be since participants primarily associated with students from their school and knew they all had the same information about healthy food choices. Peers were an influence when they were out at a restaurant or fast food establishment, or when a participant was at a friend's home. When participants were out with friends they ate what their friends were eating, even if they knew it was not healthy. When at a friend's home, they ate what the friend offered in order to avoid offending them, even if the participant knew the food was unhealthy. Although these situations may not be a major source of information in deciding what food was healthy or not, they did influence the participant's decision to eat unhealthy foods even though they knew they were unhealthy.

I was surprised that friends were not the first or second major influence expressed by the participants since it was a predominant influence in other studies involving adolescent decision-making pertaining to sexual intercourse, contraception use, smoking,

and other risky behaviors. Perhaps food choice was not considered as risky a behavior with similar social consequences which was why peers did not identify it as one of the top two major influences. Another possible reason was all participants in this study took the same Health Science 1 curriculum and learned the same healthy eating information making it socially acceptable to know about and practice healthy food choice.

Fear of rejection by peers may be more powerful than consequences imposed by adults (Kohlberg, 1984). In this study, participants did not mention rejection by peers for choosing one food over the other. They did mention that friends or peers influenced their food choice when they were out at a fast food restaurant or at a friend's house where adults were not present. Following this train of thought, participants were less likely to request a healthy food option over a nonhealthy option when alone with peers or friends. Participants stated this was because they did not want to offend friends. In this context, Bandura's (1977) and Erikson's (1980) conclusion that family, peers and partners, as external factors, influence decision-making behaviors supports participant responses. External influence by peers has an effect on the decision to use contraception (Bandura, 1977). If not using contraception was accepted behavior by peers, an adolescent may be more likely to follow that behavior, which follows that if a friend or peer is not eating healthy food, the adolescent that is with them will do the same as acceptable behavior in the current situation (e.g., eating out at a fast food restaurant).

Fear of consequences from outside sources drives adolescent decisions in Level II (Kohlberg, 1984). Applying this theory, adolescents deciding what to eat who are in Level II may follow expectations of peers. This was evident in participant responses that

they will eat what other friends and peers are eating at fast food establishments and a friend's home. Participants stated consequences as not offending others, which means they may be in Level II of Kohlberg's moral judgment developmental hierarchy. Bandura (1977) stated that peers, as part of the external environment of reinforcing influences, affect an adolescent's behavioral decision to participate in an activity or not. Study participants stated that their decision to choose to eat unhealthy versus healthy food was influenced by friends and they chose to eat unhealthy food over hurting their friends' feelings and to be part of a group.

Bandura (1977) described decision-making as a constant interaction between peers, family, and surroundings. Incorporating if-then structures that use influences from an adolescent's surroundings was an application of Bandura's theory. For example, if some of an adolescent's peers are smoking cigarettes, the adolescent may be faced with two predominant decision-making scenarios: (a) if I smoke, they will continue to like me and I will still be part of the group but I will put my health at risk, or (b) if I do not smoke, I may lose my friends, be exposed to second-hand smoke, but may reduce my health risk. Substituting "smoke" for "eat unhealthy food" in the presence of friends, explains study participant behavior for not wanting to ask for healthy food instead.

The proximity of fast food establishments, restaurants, and grocery stores to the participants' home was explored during the individual interviews. As an external influence to food choice, this was categorized as a minor influence. Some participants lived within walking distance of fast food, restaurants, and grocery stores and others had to drive there. Living closer to fast food establishments did not mean participants

frequented them more often. Eating at fast food was expressed as a time constraint decision, rather than a food choice decision. Several participants mentioned that they frequented fast food when their mothers were in a hurry and did not have time to fix the evening meal due to getting home late from work, or having to get to another activity quickly. Most participants stated that food at home was purchased at a grocery store since they knew it cost less and had a healthier selection, such as fruits and vegetables. As stated earlier, mothers were a major influence on what adolescents in this study ate at home since they did most of the food shopping. Having restaurants and fast food establishments close to home did not contribute to decisions to eat there frequently. Since most adolescents in the study expressed that fast food was not a healthy choice, when they made their own decision, they chose to eat healthier food at home which included fruits and vegetables during the evening meal.

Subquestion 3 analysis of peer-reviewed literature. Commendador (2003) studied influences of adolescents in choosing to use contraception before having sexual intercourse. Commendador determined that family had an influence, but did not specifically mention mothers. I found that family does have an influence in adolescent decision-making, which according to the data in this study, includes food choice.

Family and peer socioenvironmental influences had some effect on weight-control behaviors but did not have as strong a correlation as personal weight-body image perceptions of the study participants (Neumark-Sztainer et al., 2003). Two outcomes of the study were that adolescents' weight concerns mirror those of family and peers (external) and personal body image perceptions (internal). Mothers as a major external

factor in adolescent decision-making was not supported by Neumark-Sztainer (2003), although there was some congruency in participant and family concerns about weight and image. Wu et al. (2009) studied eating habits of Southern Appalachian teens and focused on external influences, such as teasing about weight by peers, body image, and cognitive intent to eat healthy foods. Families were not mentioned as an external factor influencing intent to eat healthy foods Wu et al. In this study, participants stated that their mothers had a major influence on what they chose to eat. This may be because food choice was a less sensitive topic for adolescents to talk to their parents about than image and weight, although food choice leads to weight and image outcomes.

Availability was determined to be a factor in healthy food choice in a previous study. Adolescents noted availability and taste (Neumark-Sztainer et al., 2003), and convenience (Neumark-Sztainer et al., 1999) as important considerations when choosing food to eat. In this study, availability was categorized as a secondary factor in adolescent food choice along with parental influence. Neumark-Sztainer et al. (2003) primarily surveyed White adolescents.

In this study, I interviewed students from African American, Asian/Pacific Islander, Caucasian, and Hispanic ethnicities. Only eight participants were Caucasian, and the other 24 were not. Participants from all ethnicities, ages, and grade levels mentioned family (mothers and grandmothers) as a major contributor to their decision to choose healthy foods, and availability as a major influence on what they chose to eat which depended on what their family had available at home. This differed from the

Neumark-Sztainer et al. (1999) findings and may be due to a cross-section of ethnic groups participating in this study.

Roseman and Niblock, (2006) conducted a study on middle school children in Kentucky, which was primarily a Caucasian population. Participants in this study stated that 87% of the time, taste was important to them in choosing food to eat. Hunger and taste were the most important factors, and cost was third in the Minnesota study (Neumark-Sztainer et al., 1999). The Neumark-Sztainer (2003) study population was primarily Caucasian participants. Participants in this study across all ethnic groups stated that taste was a major factor in deciding what to eat. When choosing what food to eat, adolescents use taste as major internal influence. When making healthy food, such as fruits and vegetables, taste may be a factor that influences adolescents to choose what to eat. Taste is an individualized perception. More information needs to be acquired on what adolescents mean by taste in order to make healthier foods taste good to them and encourage choosing them over other foods.

Based on self-reported surveys administered to 13- to 17-year-olds to determine attitudes, beliefs, and norms, they found parents and peers had little or no effect on eating or exercise habits (Baker & Brownell, 2003), which supports results from this study. Commendador (2003) concluded that adolescents involve self-esteem, locus of control, influences of family and peers in their environment, and their partner in the decision to use contraception. When alone with friends, peers in the immediate environment did influence what adolescents in this study chose to eat.

Dashiff (2000) stated that peer pressure and confidentiality were sources of conflict for adolescents deciding to complete survey instruments. Participants in this study did not specifically express conflict resolution as a part of the decision-making process in deciding to choose healthy or unhealthy food in the presence of their friends. However, the participants indicated thoughts on how the other person would feel if they refused the unhealthy food their friends were eating. This could be considered a source of conflict on whether to decide to eat the unhealthy food or refuse it and hurt their friend's feelings.

Subquestion 3 analyses of developmental theories. Cost as a minor factor on food choice relates to Bandura's (1977) ideas of external response sequences. According to participant responses in this study, the higher cost of available food when they were eating out with friends affected their decision and they purchased the least expensive menu items, whether healthier or not. Cost was a response to not having much money to buy more expensive food items. Cost did not necessarily lead to healthier food choices including fruits and vegetables.

Participants mentioned school as a minor factor in their food choice decisions. Erikson (1980) believed that school affects adolescents by observing respected adults and getting positive feedback from those adults. Bandura (1977) and Erikson agreed that modeling has an effect on decision-making behavior. Based on participant responses, there was no specific mention of teachers that affected food choice decisions. However, many participants mentioned activities in Health Science 1 such as the Good Eats project, food label reading, and the USDA food pyramid taught by teachers that affected their

food choice decisions. In this respect, the teachers were modeling good behavior which follows Bandura's theory that modeling affects decision-making behavior.

Physicians were mentioned a few times as a minor influence on food decisions, and these were for specific instances when a participant needed to see a physician. Kohlberg (1984) and Piaget (1978) are proponents of staged development. Kohlberg stated that adolescents develop in sequential stages. Adolescents move from one stage to the next, integrating knowledge at different levels. One type of conceptual analysis used through cognitive-developmental stages is logical analysis of new concepts (Kohlberg, 1984). Although adolescents arrive at different stages at different chronological times, each stage requires appropriate presentation of new concepts (Kohlberg, 1984). Based on the stage of each of the participants who required specific dietary information, Paiget's and Kohlberg's theories are applicable.

The decision to accept advice from physicians can be applied to Erikson's (1980) theory. Erickson believed that adolescents in a crisis situation are self-absorbed and will make decisions only to satisfy the self. The participants who went to see a physician for a medical problem could be considered in crisis and would be more likely to make food choice decisions based on physician recommendations if it would treat and cure their crisis condition. Any person, not just an adolescent, who is ill and wants to be cured would be self-absorbed and make a decision to satisfy the self to get well. In this situation, Erikson's idea would apply to all age groups.

The media, including television, Internet, and social media sites (e.g., Facebook.com, Myspace.com) had little influence over participant decisions to choose

foods. Most participants mentioned advertisements on television as a primary source of influence. When they saw a food advertised, especially fast food choices like hamburgers, they stated sometimes they wanted to eat or try that food because it "looked good." Sometimes participants tried that advertised food the next time they visited the fast food establishment, but no participant stated they ran out to buy it for immediate gratification. Participants also stated that after they tried the advertised food, if they did not like it, they did not eat it again. This decision relates to taste which, was one of the major influences on food choice. The Internet and social media were not an influence on adolescent food choice in this study. Even though there are advertisements on social media and other web sites, participants stated they did not pay attention to them. One participant did state she uses the Internet to look up food nutritional composition sometimes, which did affect what food she chose, but not on a consistent basis. When asked about texting as an influence on food choice, no participant said this was a direct influence. However, if friends texted they wanted to go out to eat somewhere, eventually cost, where they went to eat, and what their friends were eating did affect their decision on what food to eat. Friends were categorized as a major influence on food choice, whereas cost was a minor influence.

Bandura (1977) characterized adolescence by risky behaviors. Adolescents are influenced by symbols through external mass media (Bandura, 1977). External influence by peers has an effect on the adolescent decisions (Bandura, 1977). If a behavior is accepted by peers, such as watching similar television shows that show specific food advertisements targeting this age group, they may be influenced by these symbols.

According to participant responses, television commercials about certain foods were enticing to them, and they might be influenced to try them. However, based on knowledge they learned at school, they stated they knew these choices were not healthy and did not eat them often, or tried them and decided to not eat them again based on an internal influence such as taste.

Erikson (1970) believed that chronologically immature adolescents may opt for immediate sexual satisfaction instead of weighing the consequences of using contraception, staying in the self-absorption stage. Knowing what is healthy and not healthy may be a better predictor of food choice than chronological age development. In this study, age did not predict if participants would choose healthy food or not.

Subquestion 3 analysis of peer-reviewed literature. Neumark-Sztainer et al. (1999) found that cost was a minor factor in food choice with adolescents. Roseman and Niblock (2006) found that 46% of middle school adolescents in their study stated cost was a factor in food choice. Cost as an external factor of influence in this study was not mentioned as often as other factors on adolescents decided what to eat. This may be because their parents purchased most of the food eaten at home and cost was not a concern for participants. In this study, participants mentioned cost as a factor primarily when they were out with friends at a fast food or other restaurant and picked food less costly since they did not have a lot of money to spend. Participants considered cost a factor in food choice when it was a direct cost to them.

School is an influence for adolescent food choice when cafeteria food is involved in the decision. French, Story, Fulkerson, and Gerlach (2003) found that food choice was

influenced by adolescents at school by different food offered a al carte and the main cafeteria food line. French et al. found that fruits and vegetables made up only 4.5% of a la carte items in 17 of the 20 school studied. This was a concern since 35% to 40% of purchases were from a la carte stands. Participants in this study expressed that there were more unhealthy foods on the cart than in the regular cafeteria food line. One participant who worked in the cafeteria stated that a fruit bowl was put on the cart hoping students would buy fruit there, but he stated he never saw anyone buy fruit from the cart when he worked. Fruit was included in the cost of a lunch meal when purchased from the main cafeteria and not the cart at DLMC.

Stuart et al. (2005) concluded that adolescents need a positive eating environment to promote healthy food choice. Having more healthy food options, like fruits and vegetables, available in the cafeteria constitutes a positive eating environment, as does having healthier food to choose from at home. Although some participants stated that they lived within walking and driving distance of fast food establishments, they usually did not eat there unless family took them, they were in a hurry, or went there with friends. Promoting healthy eating at school gave them the knowledge that fast food was not healthy. Several participants stated that after studying nutrition at school and reading the book, *Chew on This*, they ate fast food less often if they had the choice.

Physicians were a minor factor in participant food choice decisions. The physicians who mentioned diet as an external influence were in specific incidences such as a sports physical or seeing a physician for a specific medical problem where dietary changes were commended as treatment. Miller (2001) stated that pediatric nurses see

themselves involved in adolescent decision-making in making health decisions and determined that adolescents need age-appropriate information delivered by trusted nurses. Langer and Warheit (1992) determined that information from a trusted source was necessary for adolescents to accept information in making a decision. Participants who did receive diet and nutrition information from a physician did see it as a trusted source and used that information for their specific situation, but did not seek out physicians as a source for deciding what food to eat.

Neumark-Sztainer et al. (1999) found factors of less importance in adolescent food choice decisions to be mood, body image, habit, cost, media, and vegetarian life style. Participants stated that media was less of an influence on adolescent food choice. Because the Neumark-Sztainer study was completed in 1999 before social networking web sites such as Myspace.com and Facebook.com became popular, and before texting on cell phones, I wanted to determine of these media outlets had an effect. According to categories derived from interview data, mass media still has a minor effect on adolescent food choice decisions.

Minor influences on food choice decision were cost, school, physicians, mass media, and location of fast food, restaurants, and grocery stores in participant neighborhoods. I was surprised that mass media did not play a larger role in adolescent food choice, and that proximity to fast food did not increase consumption. Cost of food when out with friends and menu options in the school cafeteria were the primary minor influences. Physicians were only used when related to a specific medical problem or need.

Subquestions 4

Subquestion 4 analyses of developmental theories. Attitudes and norms of students and their peers and parents alone are not accurate predictors of behavior (Bandura, 1977). Kohlberg (1984) and Bandura (1977) agreed that external environmental influences have an effect on adolescent decision-making. Participants stated in interviews that if more fruits and vegetables, in particular salads, were more to their liking, they would purchase them from the cafeteria. Although there was no guarantee that adding more fruits and vegetables to the cafeteria menu was a predictor that students will purchase them, there may be a higher likelihood that students would purchase more fruits and vegetables based on participant responses.

Bandura (1977) and Erikson (1980) agreed that modeling has an effect on decision-making behavior. Based on this concept and participant responses, having a greater variety of fruits and vegetables on a daily basis, models a healthy diet. Even though a greater variety may not be specifically modeled by an adult, the cafeteria could model healthy eating by having more healthy options.

Although Erickson (1980), Piaget (1978), and Kohlberg (1984) stated that as people age, they make better decisions, participants in this study did not give different answers to questions based on age or grade-level. All participants in this study had the same Health Science 1 curriculum that taught about healthy versus unhealthy eating, and had similar suggestions to improve cafeteria options like adding fruits, vegetables, less greasy pizza, healthier protein (e.g., baked), and more whole grains. Although aging may

allow adolescents to make better decisions, in this study, at all age levels, knowledge was a common factor in suggesting the addition of healthier food to the cafeteria menu.

Subquestion 4 analyses of peer-reviewed literature. Neumark-Sztainer et al. (2003) found that when adolescents experienced greater availability of fruits and vegetables and liked the taste of the fruits and vegetables, it led to increased intake of these foods. Participants in this study mentioned taste as a factor in food choice decisions. Neumark-Sztainer (1999) emphasized the importance of asking adolescents' opinions when designing or changing programs that affect adolescent food choice, such as food served in the high school cafeteria. Adolescents noted availability and taste (Neumark-Sztainer et al., 2003), and convenience (Neumark-Sztainer,et al,. 1999) as considerations when choosing food to eat.

Doak, Vissher, Renders, and Seidell (2006) conducted a literature review of programs intended to prevent overweight and obesity in children and adolescents with the goal of identifying obesity prevention programs that focused on school-aged children from 6- to 19-years-old and programs that were most likely to succeed on a large-scale basis. After reviewing the literature, Doak et al. recommended that intervention programs target these factors to be most effective: (a) ethnicity, age, and gender; (b) physical or social environment including food selection in school cafeterias; and (c) make behavior changes sustainable by incorporating interventions in school curriculum. Based on the finding of this study, the Health Science 1 class curriculum did have an impact on participants' food choice. Participants mentioned this class as a vehicle for learning about

healthy eating habits. Participants used this knowledge to recommend changes to the school cafeteria menu that they determined to be healthier choices.

Adolescents in this study were asked for their opinion on what the school cafeteria could do to increase fruits and vegetable offerings. They were also asked how the community, including parents, could increase healthy food options in the school cafeteria. All participants were eager to give their opinions in hopes of changing the cafeteria menu. Participants stated in the interviews that they knew that healthy foods consisted of fruits and vegetables. Almost all of the 32 participants interviewed suggested increased fruit and vegetable offerings in the school cafeteria. Increased fruit selection was mentioned most often, followed by an increase in types of salads containing vegetables. Many participants stated that the current fruit and salad options looked "old," meaning not fresh. The most suggested additions to the menu were grapes and a salad bar. One participant noted that there are salad bars at an elementary school attended by a sibling and she would like to see it at the high school. She noted that there are fruits and vegetables on the salad bar. Many participants mentioned that there should be more fruit options on the cart, which was located outside of the main cafeteria, and that fruit and vegetable options needed to be fresher. Participants recommended offering different salad choices on different days instead of the same salad every day.

Many participants noted that the pizza looked unhealthy due to the amount of grease on each piece. Participants noted that pizza was a popular item purchased by students, and cafeteria personnel needed to find a healthier pizza with less grease to offer students. One participant mentioned vegetarian pizza was offered but infrequently.

Participants noted that their parents and other school officials could talk to the school district personnel who created menus to ask for more fruit and vegetable offerings. One participant mentioned she did a petition in middle school in hopes the cafeteria would offer a salad bar, but nothing came of the student petition. Participants' tone during the interviews was not enthusiastic or hopeful about the possibility of making changes to the school cafeteria menu. Participants did think changes needed to be made to offer healthier choices by adding more fruit and salad and if they were available and what they liked, they would purchase them.

Main Research Question

Adolescents in this study knew what healthy versus unhealthy food choices were. They wanted to have input into their food choice decisions. Participants stated that fruits, vegetables, meat, and whole grains were healthy choices. They knew foods high in salt, sugar, and fats were unhealthy based on reading labels on prepackaged foods. Their decision-making process included using knowledge from the projects, activities, and curriculum from the Health Science 1 course they all took in the ninth grade. Participants told me that knowledge about healthy food choices did affect their decisions on what to eat.

Based on knowledge from this course and reading *Chew on This* in English, the participants learned that fast food was not the healthiest food choice option. Participants stated that by reading food labels, they learned that fast food options, such as hamburgers, were high in salt and fat and were an unhealthy choice. Participants stated

that, based on their nutrition knowledge, they reduced or stopped eating at fast food establishments even if they lived near these places.

Adolescents can make healthy food decisions but are influenced by their family. Mothers, and sometimes grandmothers, have the most influence on what adolescents in this study ate at home because they did most of the shopping and cooking. Several participants shared that they influence grocery shopping by giving input into what their mother purchased by deciding what they wanted to eat and asking for it. One way mothers influenced an adolescent's food choice decision was by taking their children to fast food establishments. Participants reported that mothers did this when there was a time crunch to get to other extracurricular activities, such as a sporting event, after school and when the mother had no time to go home and cook an evening meal.

Participants stated that hunger and taste played a role in what they decided to eat. Giving adolescents healthier options after school and in the cafeteria, when adolescents are hungry, may provide more opportunities for adolescents to eat healthier. Adults, who put healthier food options, like fruit, in sight of a hungry adolescent may increase the likelihood they will eat that over going into a cupboard to get a bag of chips. Although participants stated that taste was a factor in what they chose to eat, having a piece of fruit or vegetable they liked and thought tasted good readily available may increase consumption of these food groups. Given knowledge about healthy food choice, adolescents may decide to eat healthier to avoid and reduce obesity and avoid chronic disease later in life.

Major Factors: Comparison by Ethnicity, Age, Grade-Level, and GPA

Thirty-two adolescents ranging in age from 14 to 18 in Grades 9 through 12 participated in this study. There were eight participants from each of four, self-declared ethnic groups: African American, Asian/Pacific Islander, Caucasian, and Hispanic. Participant answers were identified and categorized by ethnicity, grade-level, and GPA as of the end of the first semester in the 2011-2012 school year. A commonality was that all students were in the final stages or completed the Health Science 1 course which contained a unit on nutrition required of all freshmen at DLMHS.

Ethnicity. Participant answers did not vary based on ethnicity in what they learned in Health Science 1. All participants mentioned the same projects in Health Science 1 that helped them learn about healthy food choice decisions. All participants, regardless of ethnicity, knew that healthy food choices included fruits and vegetables, and mentioned that fast food was not a healthy food choice. Almost all participants mentioned family, and in particular, mothers, as having the greatest influence on their eating habits and food choice. Slightly more African American and Asian/Pacific Islander participants mentioned family as the greatest influence on their health food decisions, although Caucasians and Hispanic participants mentioned family as an important external factor that influenced food choice.

Ethnicity did not affect hunger when participants wanted something quick to eat. When hungry, participants in all ethnic groups stated that they did not want to prepare anything, and ate what was in sight, already prepared, or prepackaged. Having a healthy food option, like fruit, readily available at all times might contribute to greater

consumption of healthy food when adolescents from any ethnic group are hungry and want something to quickly satiate their hunger.

Taste was a consistent influence across all ethnic groups. Although the definition of what tastes "good" may vary by ethnic group, participants stated that a food had to taste good in order for them to consider eating it. The definition of good was not fully explored in this study. A few participants mentioned that sometimes they wanted something salty or sweet, but there was not enough data in this study to determine if this varied by ethnicity. Many participants did mention that food that was fresher tasted better, and this was in reference to what was offered in the school cafeteria. There were no delineations of this comment across ethnic groups.

Friends was the final category of influence in food decisions for this study. There were no differences in the influence of friends based on ethnicity. Participants from all ethnic categories stated that their friends had more influence on their food choice when they were with each other, away from adults, or at a fast food establishment or restaurant. When participants were with friends at their house, they tended to eat what the friend's family offered. If the food offered was not healthy, they ate the food in lieu of asking for something healthier to avoid offending anyone. Along with friends, cost was a minor factor since when out with friends participants stated they either ate what their friends were eating, or purchased something based on the money they had available. This behavior was related to Bandura's (1977) idea that adolescents are more likely to be influenced by their peers to avoid being different and rejection, or to feel part of a peer group.

Age and grade-level. I became aware from participants, regardless of grade-level and age, remembered what they learned in Health Science 1 about healthy food choice. In particular, participants across all grade levels and ages remembered reading food labels, the Good Eats project, the USDA Food Pyramid, and reading *Chew on This* in English. Students remembered how unhealthy eating may cause chronic diseases such as type 2 diabetes, heart disease, and obesity later in life and by eating healthy, these diseases may be avoided. Having students participate in activities directly related to their maturity level, chronological age, and their interest supports theories of Bandura (1977), Kohlberg (1984), Erikson (1980), and Piaget (1978). Tailoring curriculum based on these theories may increase knowledge retention after high school leading to continued healthy food decisions.

Family and mother influence was consistent across all age groups and grade levels. Many participants stated that they asked their mothers who did most of the food shopping, to buy healthy options for them, and their mothers did as requested if funds were available. In some answers, participants stated that they influenced their families and mothers to eat healthier. Based on developmental theories of maturity, younger aged participants might be more influenced by their family decisions when deciding what food to eat. I did not find age and grade level to be a major factor in food choice. Perhaps since all participants took the same Health Science 1 course, information gained in this curriculum was more prevalent in food decisions than chronological age.

GPA. The average GPA of participants was 2.900 on a 4.000 scale. The lowest GPA was 1.143 and the highest was 4.000. The overall average GPA was higher than

other schools in the Antioch Unified School District. This was because the grading scale at DLMHS was A, B C, F instead of A, B, C, D and F. Faculty at DLMHS does not accept a grade of D since colleges and universities do not recognize it as a passing grade. Students and faculty use the CURE period to help students bring their grades up from an F to a C through tutoring and mastery learning, although not all students take advantage of this opportunity and may choose to keep their grade of F.

The influence of mothers (family), availability, taste, and friends did not vary in the participant group based on GPA. Scharoun-Lee et al. (2009) studied over 11,000 postsecondary students and found that students with a higher GPA who entered college had a slower increase in obesity as they aged. Participants in the current study group may have this outcome if followed through their postsecondary phase. However, participants in this study group were still in high school, and did not display any differences in answers to the interview questions based on GPA.

Adolescents do make their own decisions on what to eat whenever possible. Family, availability, taste, and friends are major influences on food choice decisions. Nutrition education in the Health Science 1 class affected these decisions. Minor influences were school (food choices in the cafeteria), cost, physicians, and mass media (Internet and television). When asked, adolescents can state how they decide to eat and what affects their food choice decisions.

Limitations of the Study

This study was limited because it was a small group of 32 participants from a small school with a health-related theme. Because of the small size, results of this study

may not be applicable to larger schools and schools that do not provide nutrition education and a health-related themed curriculum. There are over 100 health career pathway schools in California that may find this information useful, as well as health pathways in other parts of the United States that follow the same curriculum model as DLMHS. These schools vary in size, but most are considered smaller learning communities (SLC) with similar curriculum and comparable ethnic breakdown. Results may be transferable to school districts in California that incorporate SLC, or pathways, with a health theme. It would be interesting to duplicate this study at one or more of these small, health-themed schools and pathways to add to data from this research study.

Although this was a public high school, and not a magnet school, prospective students and parents must complete an application stating they would like to attend DLMHS. There was no question on the application that states prospective students are interested in health or a career in health care. However, because students and parents have to put in an application and are selected through a lottery process, there may be some self-selection to get into the school.

As the researcher, I knew some of the students, having taught them in previous school years. I believe that although this was stated as a limitation, interviewing these students was more comfortable for both the student and me since there was previous rapport. Students randomly selected for this study, along with their parents, were more likely to agree to participate to assist me, as stated in the assent and consent, by doing the interview. Students who did not know me did not consent to participate more often than

those that did consent to participate in the study. Different information might have been obtained from students who did not consent to participate because they did not know me.

Participants did not express feeling uncomfortable at answering questions, although they might have felt that way without expressing it. No participant interviewed refused to answer any questions. Those that did not consent to participate may have felt uncomfortable answering the study questions which was why they chose not to participate. I did not ask why randomly selected students that did not participate chose not to.

Another limitation may be that more students who felt comfortable participated than those that did not, giving the study different information. Of those randomly selected that chose not to participate, three had no previous experience with me as a student in class, and two did have experience. Three declined to participate and two declined due to parent request. One randomly selected student was no longer enrolled due to a long-term medical absence and did not participate because he was not coming back to school. Each of these participants was replaced with another randomly selected student from that ethnic group.

The grade-levels and ethnic group of the participants were not equally distributed, which may be a limitation. There were more 10th grade participants (14) randomly selected compared to ninth grade (5), 11th graders (6), and 12th graders (7). The pool of 11th and 12th graders was smaller than the other grades because as students do not meet credit requirements for graduation in junior year (11th grade), they are moved to continuation schools to ensure they earn their high school diploma. Although there were

more 10th graders interviewed for this study, I found that all grade levels had similar responses to the interview questions to make healthy food decisions.

A limitation to using interviews was that students may feel uncomfortable discussing answers with an adult. Participants may not be equally articulate or perceptive in answering questions (Creswell, 2003). Participants were told they were being audio-recorded and could write on cards if they chose not to answer verbally. No participant chose cards, and all consented to be audio-recorded during the interview. No participant required a Spanish translator or needed a consent or assent form translated into Spanish. All participants were articulate in responding to the interview questions. All participants were told they could leave the interview at any time, did not have to answer any question, and if at any time they felt uncomfortable, the interview would end. No participant took advantage of these options and stayed until the end of the interview. I did not find any participant uncomfortable discussing answers with an adult, which may be because they knew me from the school campus or previously had me for a teacher. Participants were eager to share what they knew about their decision-making process leading to food choice.

There may have been some bias in answering my questions since participants did know me from being on campus or in my medical terminology class. I never taught the Health Science 1 curriculum and did not know the details of what was taught. I did not have input into the Health Science 1 nutrition curriculum or unit. If students randomly selected for the study talked to participants who already met with me, they may have had time to formulate their answers ahead of time. Although the CURE pass system was used

to excuse participants for the interviews, and there was no reason for the pass on the paper, students may have talked to each other about the interview once it was completed. I had no proof of this, and the participants, staff, and faculty were told the interview was confidential, but being adolescents, they may have talked to each other about the interview. Although the initial guided study questions were used to begin the interview, I went into more depth for each participant based on their responses to the initial questions. By conducting the interview in this manner, to explore and understand each participant's food choice decision-making process, bias may have been reduced through the individuation process.

Recommendations

Recommendations for Further Research

Previous researchers who conducted qualitative studies regarding adolescent food choice primarily focused on populations of Caucasian students. Neumark-Sztainer et al. (1999) and (2003) primarily focused on adolescents of Eastern-European descent (Caucasian) and food choice. Roseman and Niblock, (2006) conducted a qualitative, exploratory study of 947 middle school students in one, central Kentucky school district to determine if participants could identify healthy menu items in the school cafeteria and the decision factors influencing students what to eat from the menu at school. The study population was primarily Caucasian (73%). Okwumabua et al. (2002) examined the relationship between low-income, African American adolescents experiencing depression and their decision-making skills.

This small study of 32 participants included equal numbers of eight from four ethnic groups (African American, Asian/Pacific Islander, Caucasian, and Hispanic) to examine food choice among adolescents that included more than one ethnic group. I found essentially no difference in responses to the interview questions. However, further study needs to conducted to expand the size of the study population and include more members from these ethnic groups. Further breakdown of the Asian/Pacific Island population to break out Filipino and Pacific Islander subgroups (e.g., Hawaiian, Samoan) would be helpful in acquiring more in-depth knowledge about adolescents in these cultures and food choice decisions. Adding the dimension of culture and not just ethnicity would be helpful in learning about other factors that may prevent or reduce obesity in adolescents based on their food choice decisions.

Expanding this study to other health care-themed high schools and pathways that exist as part of comprehensive high schools would be useful to add to the results of this research. Based on interaction with other teachers in California who are part of healthcare-themed schools and pathways, nutrition education was not typically taught as part of their curriculum. Sharma (2006) measured the effect of food selection and exercise to reduce obesity. Sharma recommended future researchers target child and adolescent nutritional behaviors. Adding nutrition curriculum to these similar educational situations and studying the effect would expand on this study. Adding and studying the effects of nutrition education to non-themed comprehensive high schools would give another dimension to this research.

I wanted to look at participant responses based on socioeconomic data. The school district refused to release this data for this study. Conducting a qualitative or quantitative study where this data were released for research is recommended for greater insight to determine if this was a factor in the decision-making process of adolescent food choice.

Following the 32 participants in this study to determine if they continue to use the knowledge about nutrition to make decisions about what to eat would be an extension of this research study. Following these participants even farther to determine if that knowledge is passed on to their children would be an interesting follow-up study. Future longitudinal research on nutrition knowledge and how it affects participants in later years would be an interesting study, along with determining if their decisions to eat healthier did prevent them from developing type 2 diabetes, heart disease, and obesity.

Another follow-up activity would be to determine if there were changes to the breakfast and lunch menus in the cafeteria at DLMHS based on participant feedback. A further follow-up would be to determine if the Antioch Unified School District implemented any of the participant recommendations to the menu at other high schools.

A follow-up study at the two comprehensive high schools in the Antioch Unified School District would add information regarding adolescent food choice to this data. Creating a survey instrument for a quantitative study based on results from this study combined with the survey instrument from the Neumark-Sztainer et al. (2003) study might add greater insight into adolescent decision-making about food choice. The

students at the comprehensive high schools did not self-select to attend Dozier-Libbey Medical High School which might provide different results from the current study.

Another possible follow-up study might be a mixed-method study at the two comprehensive high schools in the Antioch Unified School District using interviews and a survey instrument. Data from this study might, again, give different results and add to the understanding of how adolescents choose what to eat. Studies at the comprehensive high schools would provide a larger sample size and greater numbers by ethnicity.

Implications for Positive Social Change

Recommendations for Stakeholders at School Level

This study has the potential to lead to positive social change by impacting how adolescents decide to choose healthy food, including fruits and vegetables, at the individual, family, school, and school district level, which could eventually affect the entire Antioch community. Changes to curriculum in health/careers at the other high schools at the classroom level to include nutrition curriculum may impact the knowledge level of all students in the Antioch Unified School District beyond the students at DLMHS. Although beyond the scope of this study, application of nutrition knowledge and making healthy food choices may impact society by reducing and preventing obesity, and possibly preventing these students from developing type 2 diabetes and heart disease later in life.

Based on data from interviewing 32 students at different grade levels, ages, GPA levels, and ethnic groups at DLMHS, I recommend these points for practical application:

1. Continue to teach nutrition curriculum to ninth graders in Health Science 1 and possibly expand other activities to reinforce this knowledge in the 10th through 12th grade curriculum catering to students developmental stages at each grade level.
2. Due to these activities having the greatest impact on participants, in ninth grade continue to do the Good Eats project, label reading activity, USDA food pyramid, and read *Chew on This* in ninth grade English. Enhance activities that promote healthy food choice by exploring and implementing other activities and projects that are applicable to ninth graders.
3. Report findings to the Wellness Council at DLMHS where

- Adults and student representative can work with the Nutrition Services personnel at the school to explore how to offer a greater variety of fruits and vegetables in the school cafeteria.
- Explore options of tapping into local farm markets for fruit and vegetable variety.
- Explore ways to make pizza less greasy and more nutritious.
- Explore how to offer greater fruit and vegetable options on the a la carte section of the cafeteria.
- Explore how to offer different salad options at lunch.

Recommendations at School District Level

1. Report to the school district board, superintendent, and district-level nutrition services personnel to explore recommendations under Item 2 and

expand these options to the two comprehensive high schools in the school district.

2. Present data demonstrating that teaching students about nutrition affects their decision-making process and improves the likelihood they will choose to eat healthy foods.
3. Discuss and explore teaching healthy eating and nutrition curriculum in the health/careers class offered at other high school in the district at ninth and 10th grade. This class was required for all graduating students in the Antioch Unified School District. The Health Science 1 class at DLMHS covers the curriculum in this required class, but has been given permission to deviate to include nutrition information.
4. Explore incorporating the Antioch Unified School District and California State Standard in the health/careers course curriculum ensuring it is taught to all high school students in the district.

These recommendations were presented to the appropriate personnel for their consideration and implementation.

Conclusion

When asked, adolescents will give insights into their decision-making process on how they choose what food to eat. Adolescents in this study shared how they used nutrition knowledge learned in the classroom to make healthy food choices. Adolescents have opinions on what food is healthy and want to change their environment to offer healthier choices to avoid obesity and future diseases. Adults need to ask and follow

through with their recommendations for offering healthy foods in the school cafeteria. Adolescents exposed to nutrition curriculum understand and can make healthier food choices to avoid future disease. As adults concerned about the obesity epidemic in the United States, perhaps asking educated adolescents how to make positive social change and assist in implementing those changes will add a missing dimension to reduce obesity in this age group.

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Appendix A: Interview Question Guide

Interview Question Guide
Insights into the Decision-Making Process of Adolescent Food Choice
Cynthia J. Soraoka
IRB Question #39a

I. Part 1 – Introduction (10 minutes)
   A. Thank participant for taking time to attend
      1. Introduction of researcher
   B. Objective of interview
      1. Learn how adolescents make decisions about food choice
      2. Doing study to determine how adolescents can improve diet by eating more fruits and vegetables
   C. Explanations
      1. Length of interview – 45 minutes (1 hour including introduction and conclusion)
      2. Confidentiality of participants
      3. Free to leave at any time
      4. No "wrong" answers; all input is important to the study
      5. Questions?

II. Part 2 – Questions (45 minutes)
   A. Overall question
      1. What can you tell me about your decision-making process about food choice?
      2. How do you use nutrition knowledge to increase consumption of fruits and vegetables?

   B. Levels of Questions to Ask Participants

Topics	Main Questions	Follow-up Questions	Probes
Knowledge	What can you tell me about knowledge you learned in Health Science 1 that you use when you decide what food to	Do you understand what healthy foods are? What information in Health Science 1 was most	What else do you recall learning in Health Science 1 that you think makes a difference in choosing the food you eat?

	eat?	valuable in teaching you about healthy food choice?	Did you remember when you learned about nutrition in Health Science 1? If so, what teaching strategies taught you most about eating healthy foods?
Source of Information	What influences your food choices?	What specific sources of information do you use to decide what food to eat? Family? Friends? School? Doctors? Internet? TV?	Explain more about the sources of information of food you just mentioned (e.g. What about family? What about friends?) What influences you the most? Almost all of us have knowledge in our heads that tells us what we should eat to be healthy, when you choose unhealthy food, what prevents you from following this knowledge? What would friends have to do to influence you to eat healthier foods? What would your family have to do to influence you to eat healthier foods?
Experience	How do the location of fast-food, other restaurants and grocery stores in the area of your home affect your	What other experiences influence your food choice decisions? Cost? Availability? Media? Taste?	What other experiences can you share about influences on what you eat? How do you decide what to eat? How do you

	food choice?		feel after eating healthy food compared to eating non-healthy foods?
Opinion	What recommendations can you offer to the school cafeteria that would encourage you to make healthy food choices?	What can the school, parents or community do to help you choose healthy foods? What two things can the cafeteria do to help you choose healthy foods? What two healthy foods would you suggest your parents serve you at home? What two healthy foods do you suggest the cafeteria serve to help you eat healthier?	What other recommendations do you have that would increase consumption of healthy foods at school? What other recommendations do you have that would increase consumption of healthy foods at home?

III. Part 3 – Conclusion (5 minutes)

A. Thank participant for their time

B. Ask participant if they have any questions about the interview session and answer them.

C. Distribute $5 Jamba Juice cards and give participant researcher's cell phone number for follow-up.

D. Remind student to contact researcher if any questions post-interview and to share the interview experience with their parent/guardian who signed the consent form.

Adapted from Ulin et al. (2005), p. 82-85.

Appendix B: Assent Form – English

ASSENT FORM FOR PARTICIPANTS 17 AND UNDER - ENGLISH

Hello, my name is Ms. Soraoka and I am doing a research project to learn about how you decide what food to eat. I am inviting you to join my project. I picked you for this project because you were randomly selected from all students ***not*** enrolled in my classes at Dozier-Libbey Medical High School. I want you to learn about the project before you decide if you want to be in it.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree in Community Health Promotion and Education. I am a teacher and work-based learning coordinator at Dozier-Libbey Medical High School.

ABOUT THE PROJECT:
If you agree to be in this project, you may be asked to:

- Participate in a one-time interview with me held on an early-out day (Wednesday or Friday) after school for an hour to share how you decide what to eat

IT'S YOUR CHOICE:
You don't have to be in this project if you don't want to. You won't get into trouble with anyone at Dozier-Libbey if you say no. If you decide now that you want to join the project, you can still change your mind later. If you want to skip some parts of the project, just tell me.

Being in this project might make you feel embarrassed about sharing your food choices. But this project might help others by showing me how you decide what to eat which may change the food in the cafeteria, and how health promotion programs and your health science classes teach you how to eat healthy food.

I will be audio recording the interview session. By signing this form, you give me permission to audio record your verbal responses and take notes with your responses during the interview session, and access the ethnicity, GPA, age and grade level data you declared on school records. If you participate in the interview, you will receive a $5.00 Jamba Juice card at the end of the session.

PRIVACY:
Everything you share will be only known by me. I will keep all shared thoughts confidential. I will keep all your taped verbal responses confidential, meaning I will not share them with anyone else except the three members of my research committee, if needed. . If Ms. Soraoka becomes concerned that your eating patterns are dangerous to your health, she will refer you to the school counselor.

ASKING QUESTIONS:
You can ask me any questions you want now. If you think of a question later, you or your parents can reach me at [redacted] or [redacted] If you or your parents would like to ask my university a question, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, then dial 1210. I will give you a copy of this form. Please print and sign your name below if you want to join this project.

Name of Student

_____

Student Signature

_____

Date

_____

Researcher signature

_____

Appendix C: Assent Form Spanish

FORMULARIO DE CONSENTIMIENTO PARTICIPANTES 17 Y MENOR

Hola, mi nombre es Sra. Soraoka y estoy haciendo un proyecto de investigación para conocer cómo deciden qué alimentos comer. Los invito a unirse a mi proyecto. Los escogí para este proyecto porque fueron seleccionados al azar de todos los alumnos ***no*** matriculados en mis clases Escuela Secundaria Medico Dozier Libbey. Quiero que conozcan el proyecto antes de decidir si desean estar en el.

QUIEN SOY:
Soy una estudiante en la Universidad de Walden. Estoy trabajando en mi doctorado en educación y promoción de la salud comunitaria. Soy profesora y coordinadora de aprendizaje basado en el trabajo en Escuela Secundaria Medico Dozier Libbey.

SOBRE EL PROYECTO:
Si está de acuerdo en este proyecto, podrá solicitarse para:

- Participar en una entrevista de una sola vez me celebró un día de salida temprana (el miércoles o el viernes) después de la escuela durante una hora compartir cómo decida qué comer

ES SU ELECCIÓN:
No tiene que estar en este proyecto si no quiere. No conseguirá en problemas con nadie en Escuela Secundaria Medico Dozier Libbey si dice que no. Si desea unirse al proyecto, todavía puede cambiar de opinión más tarde. Si desea omitir algunas partes del proyecto, sólo diga me.

En este proyecto se podría sentir avergonzados acerca de cómo compartir su elección de alimentos. Pero este proyecto podría ayudar a los demás a mostrando cómo decidan qué comer que pueden cambiar de la comida en la cafetería, y cómo las programas de promoción de salud y las clases de Ciencias de salud enseñan comer alimentos saludables.

Voy a ser la entrevista sesión de grabación de audio. Al firmar este formulario, usted me da permiso para grabar audio sus respuestas verbales y tomar notas con sus respuestas durante las sesiones de entrevista y obtener etnicidad, GPA, edad y grado información de los registros escolares. Si usted participa en la entrevista, usted recibirá una tarjeta de $5.00 Jamba Juice al final del período de sesiones.

PRIVACIDAD:
Todo lo que comparte se conocerá sólo por mí. Todos los pensamientos compartidos serán confidenciales. Todas sus respuestas verbales grabadas serán confidenciales, lo que significa que no será compartidos con nadie excepto con los tres miembros de mi

Comisión de investigación, si es necesario. . Si la Sra. Soraoka se trate de que los modelos alimenticios son peligrosos para su salud, ella le referirá a la consejera de la escuela.

PREGUNTAS:
Pueden preguntarme cualquier duda que desea ahora. Si pensamos en una pregunta más adelante, usted o sus padres pueden hablar me por teléfono al [redacted] o por correo electrónico a [redacted]. Si usted o sus padres gustarían hacer una pregunta a mi universidad, puede llamar a Dr. Leilani Endicott. Su número de teléfono es 1-800-925-3368, luego marcar 1210. Voy a dar le una copia de este formulario. Por favor, escribe y firmar su nombre si desea unirse a este proyecto.

Nombre del Estudiante
_____

Firma del
Estudante_____

Fecha _____

Firma de la
Investigadora_____

Appendix D: Consent form in English

PARENT CONSENT FORM

Your child is invited to take part in a research study about how adolescents decide what food to eat. Your child was chosen for the study based on a random selection of students at Dozier-Libbey Medical High School ***not*** enrolled in the researcher's classes. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to allow your child to take part.

This study is being conducted by a researcher named Ms. Cynthia J. Soraoka, who is a doctoral student at Walden University. Ms. Soraoka is completing her doctoral studies in Community Health Promotion and Education.

Background Information:
The purpose of this study is to gain insight into why adolescents choose the food they eat which may have an effect on preventing or reducing adolescent obesity and diseases related to obesity.

Procedures:
If you agree to allow your child to be in this study, your child will be:

- Randomly selected to participate in a one-time interview with the researcher that lasts 1 hour, on an early-out day (Wednesday or Friday).

Voluntary Nature of the Study:
Your child's participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want your child to be in the study. If you consent, the researcher will explain the study to your child and ask them if they want to take part. No one at Dozier-Libbey Medical High School will treat you or your child differently if you or your child decides to not be in the study. If you decide to consent now, you or your child can still change your mind later. Any children who feel stressed during the study may stop at any time. They may also skip any parts they feel are too personal. By signing this form, you give me permission to audio record your child's verbal responses during the interview session and to obtain ethnicity, GPA, age, and grade level information from school records.

Risks and Benefits of Being in the Study:
Risks of this study could include student embarrassment in discussing why they choose the food they eat. They may not want to share information about how they choose the food they eat. Benefits to this study are the researcher may gain insight into the adolescent food choice process which may lead to changes in food offered by the cafeteria, and prevent and reduce adolescent obesity.

Compensation:
Students chosen to participate in the interview will receive a $5.00 Jamba Juice card at the end of the interview session as a thank you for participating.

Confidentiality:
Any information your child provides will be kept confidential. The researcher will not use your child's information for any purposes outside of this research project. Also, the researcher will not include your child's name or anything else that could identify your child in any reports of the study. If Ms. Soraoka becomes concerned about whether a student's eating patterns are dangerous to the student's health, she will notify and refer the student to the school counselor.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone at [redacted] or email at [redacted]. If you want to talk privately about your child's rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 1210. Walden University's approval number for this study is 11-07-11-0019459 and it expires on August 8, 2012.

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my child's involvement. By signing below I am agreeing to the terms described above.

Printed Name of Child

Printed Name of Parent or Guardian

Date of consent

Parent's Signature

Researcher's Signature

Appendix E: Consent form in Spanish

FORMULARIO DE CONSENTIMIENTO

Su hijo(a) está invitado a participar en un estudio de investigación sobre cómo los adolescentes decidan qué alimentos comer. Su hijo(a) fue elegido para el estudio basado en una selección aleatoria de estudiantes de la Escuela Secundaria Medico Dozier Libbey ***no*** inscritos en clases de la Investigadora. Este formulario es parte de un proceso llamado "consentimiento" para permitirle comprender este estudio antes de decidir si permitir a su hijo a participar.

Este estudio se está realizando por una Investigadora llamada Sra. Cynthia J. Soraoka, quien es estudiante de doctorado en la Universidad de Walden. La Sra. Soraoka está terminando sus estudios de doctorado en educación y promoción de la salud comunitaria.

Antecedentes:
El objetivo de este estudio es para comprender mejor por qué adolescentes eligen los alimentos que comen, que puede tener un efecto de prevenir o reducir la obesidad adolescente y enfermedades relacionadas con la obesidad.

Procedimientos:
Si está de acuerdo permitir que su hijo(a) sea en este estudio, el niño(a) será:

- Aleatoriamente seleccionados para participar en una entrevista de una sola vez con la Investigadora que dura una hora, un día de salida temprana (el miércoles o el viernes).

Carácter voluntario del estudio:
La participación de su hijo(a) en este estudio es voluntaria. Esto significa que todos respetan su decisión de que si o no desea que su hijo participe en el estudio. Si usted da su consentimiento, la Investigadora explicar el estudio a su hijo(a) y les pregunte si desean participar. Nadie en la Escuela Secundaria Medico Dozier Libbey tratará usted o su hijo(a) diferente si usted o su hijo(a) decide no estar en el estudio. Si decide aceptar ahora, usted o su hijo puede todavía cambiar de opinión más tarde. Los niños que se sienten estresados durante el estudio pueden terminar en cualquier momento. También pueden usted omitir cualquier parte que siente que es demasiado personal. Al firmar este formulario, usted me da su permiso para grabar audio de las respuestas verbales de su hijo(a) durante el período de sesiones de la entrevista y para obtener la etnicidad, GPA, edad y grado información de los registros escolares.

Los riesgos y los beneficios de estar en el estudio:
Los riesgos de este estudio podrían incluir la vergüenza en discutir por qué los estudiantes eligen los alimentos que comen. Puede que no quieren compartir información

acerca de cómo eligen los alimentos que comen. Beneficios para este estudio son que la Investigadora puede comprender mejor el proceso de elección de alimentos adolescentes que puede dar lugar a cambios en la alimentación ofrecida por la cafetería y prevenir y reducir la obesidad adolescente.

Indemnización:
Los estudiantes elegidos para participar en la entrevista recibirán una tarjeta de $5.00 para Jamba Juice al final de la sesión de entrevista como agradecimiento por su participación.

Confidencialidad:
Toda la información que su hijo(a) proporciona será confidencial. La Investigadora no utilizará la información infantil para fines fuera de este proyecto de investigación. Asimismo, la Investigadora no incluirá el nombre de su hijo o cualquier otra cosa que podría identificar a su hijo(a) en los informes del estudio. Si la Sra. Soraoka se preocupa que los modelos de alimentación de los alumnos son peligrosos para la salud del estudiante, ella va notificar y referir al estudiante el consejero escolar.

Contactos y consultas:
Usted puede solicitar cualquier pregunta que tenga ahora. O si tiene más preguntas, puede ponerse en contacto con la Investigadora por teléfono al [redacted] o por correo electrónico a [redacted]. Si desea hablar en privado sobre los derechos de su hijo(a) como participante, puede llamar a Dr. Leilani Endicott. Ella es la representante de Walden University que puede hablar con usted. Su número de teléfono es 1-800-925-3368 extensión 1210. Número de confirmación de Walden University de este estudio es 11-07-11-0019459 y se acaba el Augusto 8, 2012.

La Investigadora le dará una copia de esta forma para mantener con sus archivos.

Declaración de consentimiento:

He leído la información anterior y creo que entiendo el estudio lo suficientemente bien como para tomar una decisión sobre la participación de mi hijo(a). Al firmar a continuación estoy de acuerdo con los términos descritos anteriormente.

Escribe el Nombre del hijo(a) _____

Escribe el Nombre del padre o tutor _____

Fecha de consentimiento _____

Firma del padre _____

Firma de la Investigadora _____

Appendix F: Transcribed Participant Responses

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
Feel like eating, or pressured by social situation Hunger - need something to eat now; eat whatever is at home, Friends FF and eat even if not hungry Influences most: What I want at the time, but limit amount if no nutritional value Out of home, RST look for what has the most nutritional value Friends: Listen what have to say about food; learn by example, if friends eating healthy and see good results physically and academically, will do what they do Family: Eat what Mom cooks affects what eat; show what eating is making a physical or mental difference Doctors: No Media: If see research finding, weigh in decision, but not major influence Time - enough time to prepare; want quick	Cost? - balance with nutrition but least cost. Taste? Likes to eat what's taste good; like good taste and good nutrition. Hungry - want to get what's in reach; whatever is closest; market closer than fast food. Feel better when eat healthy food, less sluggish. Fast food & restaurant - affect a lot; 5 McDonalds close; road trips like Tahoe stop at fast food because quick; home, more likely to go to grocery store & eat at home; think healthier to eat at home; Learning about healthy choices as young kid, more likely to follow as grow up; l see parents giving students soda at young age. FF short drive. Grocery store get most food, short drive from home. Cost? No Hlthy vs. unhealthy food:	Choose meals at home: Typically increase fruit and veggies. How nutrition affects my body's performance; FF body acts more sluggish, got sleepy; more vitamins helped better physical and mental performance. "Chew On This" different fast food chains, what do to food and different than food from supermarket. What health food? Nutritional value; learned to choose food wisely. Labels: now look at labels more than did before; fat, protein content. Remember nutrition info taught; still using it to make healthy food choices. Learned about carbs, nutritional value, vitamin content; what will give more lasting energy (e.g. pasta); stay away from hydrogenated fats; eat	More variety of salad; sandwiches (chicken wrap); don't order hot meals; salads and sandwiches taste better, not necessarily nutrition. Parents & Community: Parents talk to their kids and encourage healthier decisions; can't control what kids eat at school. Community: advertise what's healthy in cafeteria. Home suggestions to parents. Have healthier foods available to get too quickly. What food that looks and tastes fresh in fruits and veggies Cut out snack bar (cookies, brownies), put out fruit, carrots and water instead; Parents & Community: Education night for parents on what to do to eat healthy, make correct choices; life choices. Fresher produce. Get food

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
and easy like in a.m. before school; Price - inexpensive; Efficiency but healthy; Quality - tastes good and fills me up e.g. chili; Media - TV, Internet, studies on foods that people eat to live longer, e.g. fruits and veggies; Friends - influence when played sports; eat healthy to get more energy; Family - Mom buys groceries, asks, gets fruits and veggies; eats frozen dinners because she works late; Mom gets meat, potatoes fixed ahead of time can heat up in microwave; Taste: does influence what choose, must taste good, sweets only on special occasions. MOST INFLUENCE: Food attracted to for health. Healthy vs. unhealthy food choice: If fed unhealthy food crave that (e.g. donuts vs. grapes) Family influence: eat more healthy food, cook food so is more	Difference but not aware of how feels after each one. Fast food vs. grocery store: J in Box, BK near DV practice; near, smells good, want to eat it. Go fast food over grocery store. FF vs. GS: Sometimes influence, if go to GS buy veggies. Mostly drive to GS. Love fish. No cost, availability - like most foods. FF vs. GS: No influence, all home cooked food. COST: too expensive won't eat out due to big family. FF vs. GS: Yes, go close to home. Prefer GS and get FF from grocery store, e.g. Safeway, sandwiches instead of McDonald's which is across the street. Buy to eat immediately, but could wait for later. Cost: Yes, get less quantity or price. Available: Like to get what's ready. FF vs. GS: Mostly on the go, and eat out	unhealthy foods in moderation; reading "Chew On This" how fast food is processed, sizes of portions at fast food increased. Grab what's available. What learned taught to eat better by reading food labels? Hlthy: fruit, veggies, lean meat; food journal (food analysis) for a week, learned that if eat at different times of day feel different (e.g. sports); no specific teaching strategies. "Chew on This" stopped eating as much junk food. Did research based on book, "Good Eats" learned more about fast food for a while. Still don't eat as much FF. Smell makes her sick. With friends, get ice cream part of food group, no fries or meat. Learned about food groups. Most valuable: Negative effects of calories caramel with apples. Long-term side effects, chronic problems; DX with	locally from farms, local pasta and sauce fresher to maintain nutrition. Healthy foods: mangoes & pears; Think long term, change daily habits to live longer, healthier brain. Eat healthier at home: persuade parents to cook healthier starches, fruit, veggies; change up cookie for fruit; midnight snack eat fruit or veggie. Serve healthier stuff, not pizza every day; salad; most students eat pizza. Nothing to recommend on other choices for cafeteria; asks parents to buy food. Influence other students: watch serving sizes, don't eat greasy food. Salad bar & lean, dark meat, fresher foods cooked on premises; not frozen food. Offer salads every day with meal. Sandwiches always available; get lunch days work because it's free. Smell not good;

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
enjoyable; buy more fresh foods (fruits, veggies) and have available to eat Hunger: Eat first things I see; time prep - won't take time to prepare, want something now Time - Want something quick like when going to school; Parents: serve fruits, salmon, chicken TIME MOST INFLUENCE Doctors, Media, friends - no influence; Family: Buy the food and eat what buy; may be healthy or unhealthy Friends: eat healthy things and she'll eat healthy too; Taste: Sometimes affects what eat; if decides tastes better. Track season, eat healthy and bring more home food to school, like fruit; off season - eat whatever in reach; Influence: what's available and cost. TV commercials, label on food package help decide what to eat; commercials for fruit	(SF, Concord, OAK). Pick cheaper food choice. Available: pick what there if really hungry if H or UH. I like healthy food. Most healthy eater in my family. 80% chance choose healthy vs. 20% choose UH. Quick food (e.g. chips) over fixing something. H vs. UH eating: When eat H food, feel lighter (better). UH feels like weight on me, feel bad just ate something unhealthy. FF vs. GS: Drive home pass by BK, McD, Taco Bell, Carl's Jr, Starbucks, Quiznos. 4 McD in Antioch. Because on way home, more tempted to stop by. Don't go alone anymore and don't stop by as often. Convenient to stop by. FF vs. GS: FF within walking distance of home; 10 minutes. Would walk there instead of eating at home on weekends. Mom works on weekends and would	gallstones, cut out soda. Changed habits. Healthy food: fruits and veggies eat more from HS-1 and English; less junk food; Outcomes - obesity, type 2 diabetes, encourages to eat healthy instead of junk food. Fruits and veggies give lasting energy; FF gives shorter time of energy. English: "Chew On This" explains junk food industry. Decide to eat healthier, disgusting what do to animals. Cut back on FF. Food labels to check calories, fat, carbs. Project: Meal and nutrition value of each item; protein, fats. "Chew on This" disgusted me about fast food; don't eat as much. "Good Eats" project was on caffeine. Influenced her and family's eating habits. Empty carbs and protein, doesn't do body any good. Label reading. What to look out for on labels. Liked	brings sandwich from home. Advertising - kids eat what want to eat; look more appetizing not deep fried. Parents serve at home: salad and no desserts; plan what to eat and time; not at 9:30 pm eating. Buy meat, but cook meat unhealthy by frying; bake it instead; buy more fish. Others eat healthy: When working, encourage kids to get fruit with lunch, since it's free. Get water and milk instead of Capri Sun. Price increased on unhealthy snacks. Add more fruits and veggies. Salads and variety of fruits and veggies. Parents: not other foods. Teens: Teach outcomes of not eating healthy food, what does to the body. Add yogurt with granola more often and different flavors besides strawberry. Less greasy food than pizza or chicken. Puddle of grease in pepperoni. More

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
or fruit drinks if low calorie; stay away from soda and deep fried food. Available: hunger want something now, bag of chips easier than getting bag of greens. Friends: Influence most, eat worse in front of friends, public. Family: Eat healthier. Taste: Healthy food doesn't always look good, if not look good, won't taste good. Grab whatever when get home and start homework; can't stop to make full-course meal. When fruit out, will grab that instead of chips. Don't like peeling fruit. FB or Twitter: no. Texting: if someone mentions going to get burritos, will want that (power of suggestion). Hlthy vs. Unhealthy: Craving for unhealthy food; all available in reach. Feel better like did something good, FF eat it feel hungry, feel sick, regret it if have to run/work out. Physical and	have to cook for self. FF vs. GS: Middle of FF area; apt. 3-5 FF and 2 are Rest. Mom's mood if go to FF or rest. Eat FF or homemade food. FF across the street. FF and GS: Yes, around house. Go out and get something like SB because it's close. FF 1 minute driving, but don't go there much. GS next door, and usually go there. Usually buy ingredients to make something, like fudge. What eat, based on how feel. FF vs. GS: 10 minutes to drive, walk 20-30 min. Don't eat fast food. Mom cooks. FF vs. GS - McD, pizza, In & Out, KFC, Taco Bell. GS farther. Other rest, no. Do not go to FF if hungry. Eat at FF if in a rush, somewhere to go after school (e.g. BTS night). G'ma mostly cooks at home. FF vs. GS: Live closer by GS. Go to GS because around corner from house. Don't go	pyramid that showed salt, fat content of food she ate. Showed how healthy or unhealthy food was, 1 week. Can eat FF, but try not to eat too much. Healthy food intake more than UH food intake. H = veggies, fruit, less fat, oils and grease. "Good Eats" how diet affects life, hypertension, did sports nutrition. H foods not tired as fast and don't cramp up. H food energy over longer period of time. H food helps build muscle if work out due to nutrients. Calorie intake: Make sure eat stuff that's not so high in calories. Serving size: make sure making 1 or 2 serving sizes. Get out measuring cup, eye-ball it and guess. Will read labels. Reading labels most valuable in eating healthy. Bring out actual food packaging and look at serving size, put in cup and show what was serving size;	salads, but picky on salads, don't like all items in salads. Salad bar. Parents: Mom big salad person, home cooked meals are Filipino with lots of veggies; parents doing well with healthy food. Fruits at home, bananas, grapes, oranges, plums, strawberries, blueberries; Mom changes it up with in season fruit. Pineapples. Teens eat healthier: Appearance of food to make more appetizing. Salads at school seem dead. Fresher food in cafeteria. Rec food: Offer more variety of things; salads, but dressing is fatty, sandwiches. Subs don't look appetizing so doesn't buy. Parents: Ask more what he wants to eat. Cook before gets home from school, so no time to ask. Make Arabic food that he likes, rice spinach, chicken and soup. Tastes good and

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
emotional feeling. Family: Mom buys fruit, yogurt, tells her need to eat healthier. What's at home, feel like eating. Parents: Influence by what have available at home. Feel like eating; not internet, TV. MOST: FEEL LIKE EATING. Hlthy vs. nonhlthy: NH shorter energy, seem happier after eat healthy food. Feels good inside; feel lazy if eat UH food. Feel like eating; don't eat junk food, go for fruits, any type; really hungry, get leftovers from night before, warm in microwave; if really hungry, will wait and eat something healthy. Family: tries to make her eat veggies, but only like salad, carrots; Mom don't eat junk food so close to dinner. Friends: NO. School: YES, after learning how food affects body, stays away from fast food. Doctors: Yes, my doctor said to eat	to FF that much. Cost: No, unless seafood which costs more. Availability: Right there, I eat it, if something I've been thinking about all day, I'll make it. Looks and taste good, I'll eat it. FF vs. GS: Closest is 7-Eleven, Vietnamese soup place. Don't live near FF. Don't eat FF, all of life hated hamburgers. Hate In and Out, and they love it. Buy groceries. Surround yourself with people who eat right and are not FF junkies. Nutritionist limit yourself and set goals, if don't eat ice cream, set goals to eat cauliflower and spinach. Don't feel great after eating fast food. FF vs. GS: Live near both. Not for me, but other members of family, BK McD, if too lazy to cook, go to FF. For me, I like to eat as a treat, once in a while. I found out what happens in FF	students did this, too. H vs. UH: Know what's bad and good, but not in-between. "Good Eats" remember doing that. Veggies good, BK bad. Don't remember teaching strategies. Didn't seem like it applied to me, my metabolism was good. Should be teaching seniors; as a freshman it was irrelevant to me and I didn't care. "Good Eats" taught how choosing UH food results in diabetes and heart disease influenced me to eat healthier. Found out HD and Diabetes runs in family and makes me want to eat healthier. Examples of healthy foods: whole grains, fruits, veggies, protein (nuts). Strategies: getting right to the point in lecture that UH eating is a problem. School: "Good Eats"; how exercise and what we eat to maintain healthiness; watch for calorie	healthy. Teens eat healthier: Healthier burritos, not preheated. Add fresh ingredients into lunch, e.g. veggies. Teens: Don't always go for taste, always want FF. Better quality food. Instead of cheeseburger, chicken burger, not fried but baked or grilled. Reduce salt. Show serving sizes and nutritional facts of food. Parents/Community: Have more salads. More variety. Teach nutrition at all schools, all grade levels. Nuts and grains. Home: chicken, grilled and baked, more salad. Cafe: Avocado, strawberries. Healthy food costs less money, and unhealthy foods cost more money. Easier to buy healthy foods of cost less. Nothing offered at breakfast that is healthy; offer hash browns, pop tarts, bagels, Wed. cinnamon rolls;

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
things with iron due to anemia. Internet: NO, TV: NO. Twitter, FB, TV: Only Food Network on TV, copy what make. What seems appealing, taste and appearance. Friends: No, healthiest eater in group of friends; Yes, tell when she's eating too much of something. Hlthy vs. Unhealthy: Cravings will make eat unhealthy; want chips, crave salt; plays VB season just finished. Hlthy food get filled up and don't feel like eating more (e.g. oatmeal filling vs. cereal). Less energy on unhealthy food, if eat too much before VB practice, or if eat chips, won't have enough energy Availability: If craving hamburger, I'll pass. Orange or banana, if there will eat. If crave and not there, will let craving pass. What's good, what I like by taste. Taste good, but not	industry and don't want to eat FF and don't want to provide money to this industry that does bad things to animals. FF vs. GS: Don't go to what's in neighborhood. Yes, affects it, if want something fast, go to closest place. GS Savemart, FF J in Box, Taco Bell. Walk to Savemart, but can't walk to FF, have to drive. Farther away, less likely to go to FF, more likely go to SaveMart. FF vs. GS: When new rest opens we go once to see what it's like not matter where it is, but interests us. Cost: Yes, tend to cheaper places for FF and GS. Buy things on sale at GS. Availability: Hungry home from school, while doing homework grab something quick like chips or crackers. Look through what we have at home before picking something. Taste: No, not picky when it	intake; take estimate on calories. Daily diet about 1,800 calories. Learned about calories in HS-1. Calorie intake, vitamins. Label reading. Calories, labels. Present "Good Eats" project referred to way we eat. Influenced by student presentations and built up on how to eat better. Eat better at home, but not at school. NO certain strategy, if topic caught my attention, motivated me. Words and tone of teacher process in mind more and think about it more. Words make me listen and think. Food labels in class. Realized everything I was eating was unhealthy but didn't stop eating food. Just made me aware of what I'm eating; when I was eating it. Wouldn't eat sugar before working out. Know when appropriate times to eat certain foods. H	garbage. Do have unripened fruit, grape juice, water. Not eat breakfast. When working, eat because it's free. If eat bkfst, get hungrier sooner. Prefer apple when wake up, get juice and water at work. Offer sausage, burrito. Would like to see yogurt, ripened fruit. Lunch: taco salad, like eating a taco with a little lettuce on top. Don't know what to suggest. Tried sandwich, and it was disgusting. Make food fresher/ripe. Home: Want green beans. Other students to eat healthier at school: Get salad, stay away from burritos, get chicken on a bun, breaded. School: offer fresh food. Community: If lived in communist country, burn McDonalds. Since in a capitalistic, free market society, have to allow FF. Would like to have all FF gone. Can't keep myself from going,

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
necessarily look good. Family: What they cook, cook what I like. Eat even if don't like it, but not enjoy it as much. Friends: Not really, I choose what to eat. If go to FF, go somewhere we all enjoy. School: bring own lunch, turkey sandwich, don't like school lunch, taste and small quantity. Doctor: NO. Internet, Twitter: No. TV: If see something looks good on TV and get it. Then regret it after because didn't taste good. Go online and check reviews on restaurants what might taste good, convenient if in rush, or sit-down if not in rush. MOST INFLUENCE: Family and online and checking what's good. Choose based on appearance. Hurry: Pick something fast, tired, choose sandwich and make it even if takes more; grab fruit & veggies; my sisters eat chips. W/take extra time.	comes to food. FF vs. GS: Some FF, 2-3 near home. Go to FF on road trip like McD. First at home get food Mom buys at GS, then Dad would get FF if brother wanted it. Only eat FF if parents offered it, wouldn't go on own to get it. FF vs. GS: When Mom moved to where living now, KFC, McD, J In Box, all on same street. If can't think of anything to eat, went there. Dad doesn't take us out to get fast food. Mostly have home-cooked meals at Mom's and Dad's. Even if FF close, don't go there. Have Safeway and Raley's close. Go GS over FF to get food. FF vs. GS: Go to Safeway before FF. Lots of FF around house. Especially buy fruits. Friends/Family: Help me not go over in my calories especially since on the diet. FF vs. GS: McD, Safeway. Don't go to	food: Anything fresh. Found out MSG is unhealthy. Organic foods good. Easier to grow own veggies (e.g. zucchini). Starting to grow more (cucumbers, tomatoes), that's when I eat healthy know off vine full of nutrients. Taste different, sometimes (tomatoes, cucumbers) juicer. Application: Monitor what eating, when eating it, helped be more aware and pick healthier food. Learned about digestive system and how process food. Portion size, calories do count, weight know what BMR, BMI are; don't overeat or you'll gain weight. Healthy food, eat sweets once a week, exercise to be fit. Healthy food: fruit and veggies. Pasta but not too much salt, oil. Made more aware and try to eat healthy foods. Don't remember teaching strategies. Mexican food considered	how can I tell someone else not to go there. Don't drink soda, unless at restaurant. Do feel better since stopped drinking soda. Elementary school had salad bar with fruits and veggies; free and could have as much as want. Included in lunch fee. Wants in our café. Parents/Community: Teach teens how to eat healthy, how to avoid FF, teach them how to cook healthy food. Since we're becoming adults, teach us how to shop in GS. Cafe: have wider variety of food, not pizza and hamburgers. Wider variety than salad and sandwich. Home: spinach, more chicken. Teens: Tell them analyze what they eat now, and how it might energize them to not "crash" during 5th and 6th period (afternoon). Media: don't show hamburgers; show

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
Hlthy vs. Unhlthy: UH makes stomach hurt. Don't go to FF except In and Out. At Wendy's got sick after. Even if tastes good (e.g. pizza) see fat and won't eat it. UH FF (fatty) get tired if play basketball, doesn't happen with H food. Family/Parents and if eat bkfst; if don't eat bkfst will eat anything. TV: Picture or commercial of food that looks good. Family meeting: Eat what's there, even if not healthy. Doctors: NO. School: A little bit, buy lunch; sometimes sandwich, corn dog. What offer that day on menu will buy. Cost: McDonald's, buy what costs less, or based on money have at the time. Internet: NO. MOST INFLUENCE: Parents buy. Hlthy and UH foods. Frozen foods, but not TV dinners. Hlthy food: granola bars, salad, veggies, fruits, chicken. Mom most	FF if hungry; just eat what's in the house. Family cooks every day. Tries to eat dinner together. FF vs. GS: There are both near house. Even before Mom avoided FF places. I never really liked FF to eat. Mom cooks most food at home from GS. Been on diet for almost a year in 2 more months. Whole family on it. Whole family eating healthy since Mom cooks food. FF vs. GS: FF 1-2 blocks away from home. GS go a lot, spend own money. Parents give money, too. Rest close. Go to rest over GS or FF because prefer sitting down and eating. FF more greasy and don't want to eat that. Family decides each night if will go out to eat or not. Go out a lot to eat, depends on when Mom gets home and if she wants to cook or not. Works until 6-7 pm. Go out 4-5 times per week.	healthy, at home food is natural, rest put in more oil. Family did not change eating habits based on what learned at school. H foods: veggies, fruits, protein, grains; not sugar, high fat and high calorie. How food affects body like protein, carbs stored as fat. If eat healthy avoid certain diseases like diabetes, heart conditions even though some are genetic. Most important, how diet affects your body. Give you energy or slow you down. Learned same no matter what strategy. Label tricks. Now reads labels. Stay around perimeter of grocery store for fresh foods; fresh vs. packaged, fresh food more healthy. H: fruit, veggies, whole grain breads, multi-grain. Looked at labels ourselves and reading labels in class. Teacher brought in food labels on food packaging.	offer healthier food. Even restaurants that have healthier food, they advertise UH foods over H foods; show pix of H foods. Depends on cost, schools serve food to conserve electricity. Don't want to make food on site. Serve more natural, fresh food like salad that don't need heating up. Cold food to save electricity. Fresh food, but might cost more. Fruit. More fruit, healthy options, would try them and not purchase nachos. Friends: If I liked a food, would tell them about it and tell them to try it. Home: H foods, salad and grains. Not big on healthy food. Parents/Community: Change menu for better quality. Salads, but not sure if healthy. Healthier than pizza, but doesn't look that much healthier. Fresher food. Home: Different trail mix for snack. Friends eat healthier:

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of cooking. Friends: NO H vs. UH: Price and taste influence H vs. UH. Not all healthy food is tasty; w/choose hamburger over salad. Family, healthier food choices: Spend more money, go to Trader Joe's to shop than Safeway. TJ healthier food. Taste: If tastes good, would eat it. Can't eat what want to; feel and "look like crap". Get apples at lunch. Conscious decision; think about image. Mostly image, and little about health. Family: YES, make dinner. Dinner options choose between eating fairly tasty food at home, or really tasty food at girlfriend's house. Girlfriend: influence what family eats, rice with everything. Friends: New year's resolution to give up Coke unless at restaurant, no fast food except when go out with friends. If	FF vs. GS: Not close to house, but if drive a couple miles. Don't eat out because have to drive there. FF vs. GS: yes, both near house. Go FF more on weekends when we're out. Most of the time don't get FF and eat at home because G'ma likes to cook. Rest down the road, Chili's, Outback, but more FF. Can't walk, have to drive there. FF vs. GS: Taco Bell, McD, FoodMaxx. FF walking distance, but trying to cut back. Little sister always wants FF but "uh". Used to go 2-3 times per week, but go 1-2 times per month now. Mom is pushing healthier food. Mom most of time at work, Dad tries to cook, but he doesn't cook healthy food. Try to find salad package and dressing in fridge when my Dad cooks. Dad likes a lot of fried food, and his doctor told him it's not good for his heart, but he	Food labels learned in class, broke down carbs, sugars, and read before eat. Healthy food: baked not fried, no grease, veggies & fruits. # servings needed of veggies and fruits. Portion size. Exercise important. Printed out food labels, color and label food broke down labels, do it myself. Definitely food pyramid. Helped me realize what I was eating a lot was affecting me and what I was eating less I needed to eat more of. An example, caffeine isn't good for growth and had funny presentation video. Nutritional scares like obesity and diabetes, plaque and heart attacks. Dangers of unhealthy eating. Part of curriculum in textbook. Conditions and disease scared me. Strategies: Video, textbook work and answer questions on tests. Like reading and answering questions from book.	Know what they're eating; knew what doing and affecting their body. Don't serve burritos all the time; salads and sandwiches healthy. Could serve mashed potatoes, pasta. Food not in packages, but fresh food. Home: okay what Mom serves at home. Tell her what want when she shops. Sisters do eat healthy, eat small portions of sweets. Teens: Eat healthy at age where what eat is shaping their health; of obese will have a heart attack or make them sick later on. Eat healthy now, to not get sick later and have a healthy body later. Don't tell little sisters what to eat. Prefer salad bars. In brother's elem school has salad bar that's included with price of lunch. Salad, veggies, fruits on bar to eat healthy. Make fresh food, buy fresher food like salad and different types of

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friends offer to go somewhere, I will go with them. School: influences what eat based what's on menu, since work in cafeteria. Usually 1 H and 1 UH, all taste like "rubber", UH tastes better. Doctors: Not consciously, no. Internet/TV: YES, based on commercial influence, subliminal messages tell me it sounds good and I will want it. MOST INFLUENCE: Personal image. No PE offered Jr and Sr year and body "going down hill". Wanted to go to In Shape and do zero period UH vs. H: Eat unhealthy because it tastes better; salads in café don't take good, look terrible. Friends: When go to friend's house eat healthy if they have it there. Friends can't persuade me to eat healthier. Family: Doesn't seem like it's important in my house to make me eat healthy; I now make my own	still eats it. FF vs. GS: Taco Bell, FoodMax, McD, Chinese Food around corner. I'm lazy, would probably eat at home or ask someone to pick up something for me on their way home. FF vs. GS: Live close to WalMart. If pass by there on way home and I'm hungry, stop there to get something from McD. GS at WinCo or FoodMaxx, farther because less expensive. Six in family. More likely buy groceries than go to FF. When get out of school, go buy groceries. At times eat a FF when in a hurry, or Mom doesn't feel like cooking. Cost: Yes, me personally, stay on low end at dollar menu for self, in family my parents decision as to go to rest or buy GS. Overstock on groceries and tend to eat what's available like 30 packs of chips. FF vs. GS: Usually go	Read "Chew on This" didn't know how bad soda was for teeth, I thought FF was healthy since has lettuce and tomatoes in it. The book gives you sat and unsat fats, learned different between fats and good and bad sugars. Learn what does to body, like wow it makes a difference what you eat. Difference between eating hamburger and good for moment, then stomach hurts, vs. good pasta. HS taught me about family aspect that if family eats bad, you should be eating healthy no matter what. Showing us the amount of calories, food labels and labels FF doesn't show us. Mom as vegan always read labels to make sure eating healthy. I said "wow" after reading food labels. Strategies: Reading books and should be doing more of that. Only "Chew on This". Since go to DL should	fruits. Want bananas. Not veggie fan, but eat them anyway. Grandparents help by buying healthier foods. No one else can help. Friends: No sure how would tell them to eat healthier. Does not eat in cafeteria. Know what food's available. Offer less UH food like pizza, make H food more available like salads. Have fruit salads will be buying all the time. More fruit and veggie salads. Sandwiches with whole grain bread, stop cheesy sticks/bread. Parents/Community: Try to talk to county people to change menu. Elem school petition to change lunch menus, but didn't do anything. Nothing changed. What saw in 5th grade on cafe menu still seeing in H.S. Educate students, parents more about H foods will help people eat healthier. Go over what learned in HS 1

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decisions. Cost: Go to Taco Bell, 99 cents; prefer Carl's Jr but $10.00; Convenience a factor. Feeling: if body feels healthy, will eat anything I want; if feel not at optimum level, body "mad at me" will eat healthy like apples. Food choice: Mom goes shopping and eat what Mom cooks. School: Hard to have healthy choice, but buy salad and sandwiches. Eating out: Pictures look good, but don't think about calories. If had food before and tastes good, will eat it again. Cost: Cheap food is important since our family struggles with finances. Healthy food may be cheaper, UH food can buy in bulk and can be cheaper. Friends: Yes, if go out to restaurant and they said it's good, I want to try it. School: If bring lunch need to bring something cold that doesn't have to be	to Safeway and WinCo. Get organic fruit at Safeway. Definitely shop at GS. FF maybe eat once a month or a rest once a month. Once a month parents wouldn't cook. Stores around influence what eat. If surrounded by good stores, more options for good food. GS 3-4 miles could walk, but wouldn't want to carry grocery bags that far. FF vs. GS: Usually go to Safeway and WinCo. Get organic fruit at Safeway. Definitely shop at GS. FF maybe eat once a month or a rest once a month. Once a month parents wouldn't cook. Stores around influence what eat. If surrounded by good stores, more options for good food. GS 3-4 miles could walk, but wouldn't want to carry grocery bags that far.	be reading more factual books about nutrition. Watched movie, SuperSize Me, influenced me not to eat fast food. Video in English along with "Chew on This". Used to play sports and used to go to FF but try not to do that. Eat at home before practice or games. HS 3 years ago, taught me to make better decisions on what to eat, "Good Eats" project, but don't remember topic. Look at nutrition facts (labels); calories vs. calories from fat. If fat calories greater than 50% unhealthy. Read labels sometimes, but not every time. Mom reads labels since trying to lose weight, but I don't do it at store, but read at home. H = fresh fruits, veggies, whole grains. Stay away from chips, canned and processed foods. Activity on how much nutrition got in foods	again in later grades at DL. Variety of fruit only offer apple slices and oranges. Want grapes, broccoli. I go in pizza line, not very healthy, see grease come off of it. Always liked pizza, and buy pizza because love it (taste). Home: Dad already buys healthy choices, fruits, veggies. Friends: Recommend more veggies, like fruit, but hardly see them eating veggies. Increase servings of veggies. Vary fruits and veggies in cafeteria. More water, apple juice; real juices not from concentrate. I think everything is fresh, assuming it's as fresh as it can get. Like food currently, salads are good. Don't eat a lot of meat at school like burritos or pizza with pepperoni. Bosco sticks lots buy (meatless). If add meat to food, would be good but depends. Add poultry since not

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heated up; snack bar is cheap if don't have $3.00 or free/reduced lunch. Cookies are only 50 cents from snack bar. Doctors: Bacterial infection in stomach, and now can't eat spicy food, citrus, or caffeine. Infection hurt. MD telling her what to avoid to heal. If not sick, MD not an influence. Internet/TV: No. Other info influence: No MOST INFLUENCE: Family. Sometimes she'll buy what we ask for dinner. UH vs. H: Taste influences. Family/Friends: Eat healthier by eating healthy; learn by example. Availability: Homework or work, want to grab something instead of cooking. Grab easy fruit because out of fridge; granola bars. H: fills up, energized. Mood: Eat meat; sensitive tooth, can't eat sweets; after 2 candy bars, teeth can't		each day (pyramid) saw what needed to eat more of; too much sodium in my diet via canned food. HS and English taught me about how and what is in FF and why shouldn't eat it and what it does to my body. Seeing what's in FF made me cut down on eating FF. Spread knowledge to family. Told my brother and he didn't want to eat McD anymore, but my Dad got him back into it. I don't eat FF like you'd see obese kids eating. Taught about nutrients, minerals, proteins, carbs, and vitamins 2nd quarter helped me become more aware. She just taught us about nutrients and I didn't do any activities. Learned about food pyramid. Read food labels, soon as learned how to read it and read labels on food in cabinets at home. Have food labels on chips in cafeteria. Taught me a lot about	a lot of people eat red meat, and religious preferences. More poultry and fish. Community: Festival of good foods, picnics in park and city gatherings. Booths encouraging good eats, good food. "Good Eats" for community. Family: We eat pretty healthy, have salads and veggie soups. Definitely a lot more fruits, do have little fruits, but fruit salad. Less of burritos, pretzels ok, burritos worst have. More sandwiches, like Subway sandwiches, people should eat more of those than burritos. Offered more fruits, veggies. Hard when it comes to lunch, want a good meal, hard to get a good meal, can't nuke something or cook something. Would be easier if can cook something at lunch. Give out donuts in the am, what kind of breakfast is that? More milk, offer fruit

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handle pain. Holidays: Religion required veggie food, older people shouldn't eat meat. Family: Yes, when at Dad's house have to eat more Vietnamese food. At Mom's house can eat whatever want, but more rice and meat. Culture influences what eats. Friends: No, when go out, will compromise what want to eat. School: Yes, limited to what's on menu, but like salad, nachos, pizza, burger. Doctors: No, never talked to them about way of eating. Internet/TV: Media, does influence like vitamins that will make hair more beautiful. Listen to diets, but don't do them. Find time to occasionally go buy product, but once in a while, specific to what may work for her. UH vs. H food: Phase went through only wanted Caesar salad; picky. H food stays in longer and feel more		health and how important it really is. Never had a good look or thought about it. A lot of bad things can happen to you if you're not healthy. Can eat a lot of healthy foods and they're not gross, and you're not hungry. FF disgusting honestly don't feel as full or satisfied as I do if I eat healthier foods. Effects of nutrition on body, like type 2 diabetes, hypertension, aorta, high cholesterol scares me. Do not want to get anywhere near that. Thought of all FF ate in my life and can't do that anymore. Talked about obesity and other diseases affected by eating unhealthy. Made me think twice before I ate certain UH foods because I didn't want to get those diseases. Don't remember anything else. Look at labels to see what's in the food taught there are some	with breakfast to get energy. Because it's a school, should be offering healthier stuff, but offering what's cheapest. In the end, long run, would make more profit if offering more healthy food. Fruits: have apples, oranges; would like grapes, blackberries, raspberries, melons. Veggies: more of all around, spinach. No spinach in salad. Once in a while offer carrots in a bag. Parents: Buy and cook better things. Parents/Community: Raise awareness of foods eating, whole community should be raising awareness of cafeteria food and why we should be eating better. Eating better helps us live longer, and bad drugs shorten life. Bad food is like a drug, like alcohol. Eat good food instead of cake. Community getting together and making more awareness like "Chew on This" and

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energized and makes feel better about self; FF doesn't stay as long. Friends: influence if eat healthy, I eat healthy. Drank water instead of soda when friend wanted water. If I made friends more aware of H vs. UH, they might eat more H. Cost: Yes, occasionally, if good food, not picky on price. Want good quality food and would pay if more expensive. Availability: Get home from school, eat rice. If nothing at home I want, go across street to FF. Want something quick. Taste: Eat more if doesn't taste like what I want. Parents: provide meals; wanting something and go get it; get home, Mom tells me, whatever eat first, body absorbs the most. Don't eat lunch at school. Eat banana, yogurt, trail mix when get home. Friends:		bugs crushed up in food. Look at carbs, sodium before eat it. Learned in HS-1 and English. Never knew what was in food, and tell family what not to eat. Mother hates me since Ms. DL telling us what not to eat. Learned correct portions. Teacher structured class to understand what we could eat and integrated with P90X diet and carbs I avoid simple carbs and sugars. It all fits into my diet. Learned about food groups which fits into P90X diet. Learned about all the fat you can gain if eat unhealthy. "Good Eats" project remember but can't remember my topic. Can't remember anything else. Choose healthy food, balance of food groups and choices. Nutrition labels, that's basically it. Taught me calories, fat levels, sugar, salt. Influences me a little bit, my Dad	distribute these books to other schools instead of fiction books. Have HS and MS read more health books. ELS don't' have to worry about it due to high metabolism. HS need to start making own decisions so important to figure out what and why eating food. Eats in café. Give us choices of fruit, I would say, more variety of fruit. More variety of veggies, only give us carrots. Only eat lunch in café. Offer grapes and salad bar. Parents/Community: Give them ideas for more variety. Feel like cafeteria doing okay be offering salads and we could make right decisions if we wanted to. Offer salad wrap with chicken and lettuce in it. Like sandwiches which aren't that bad. Friends: bring healthy snacks, eat apple during passing period. I choose to drink water they sell.

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Now that driving, if hang out with friends, go to Starbucks. Chipotle go there with friends. Olive Garden with friends, get soup and salad think it's healthy. Family me and Mom, hard time shopping and preparing food for the two of us; don't eat leftovers. Go out 2 x per week to eat, get one plate and share it. Go to salad makers and share one salad. Always go out and get frozen yogurt, and Starbucks, if have a bad day. Eat with Mom every night. On a soup streak and eat soup every night, make it or buy at Safeway with something on the side. School: Don't eat lunch, when people bring cake for b'days, have cake or other things for lunch, not usually healthy. Have See's candy day once a year and eat whole box. Internet/TV: NO. If think of a food, usually crave it. COST: Paying for		doesn't have a lot of food at his house, go out to eat a lot. Chinese rest will pick low sodium soy sauce. With Dad eat sandwiches. No food in Dad's house, every other weekend. Advocacy, "Good Eats" project. My topic was how frozen foods affect people's health. Frozen foods generally healthy, except for preservatives. Healthier foods are fresh foods. Know more about healthy foods now than before HS-1 at DL. H food helps body, when you eat something bad in am can affect your day, plus side if you eat healthy breakfast. Give you more energy instead of feeling lousy all day. Healthy foods better for my body. Teacher brought in different types of foods and nutrients in there and what was good and bad, serving sizes. Showed what actual	Eat lunch in café. When I get cafeteria food I try to pick the healthiest. I get salads and chickn wrap. I stay away from greasy pizza. Add fruit salad, fruit they have are small portions; have whole fruit and cut-up peaches in plastic containers in juice. Cafe could make pizza not as greasy. Have veggie pizza now and then, but not daily. Always have pepperoni and cheese pizza. Parents/Home: Having more little things of fruit and veggies so easier to grab. Now I grab chips and cookies because fruit and veggies not cut up and easy. Community: Less fast food especially around schools. Parents: Set a better example by eating healthier. DL teaches students how to eat healthy and trying. Other schools don't teach about eating healthy. Don't focus on nutrition.

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own now, understand how much food costs, and will no spend money. Can still spend time hanging out but won't buy food even if friends are buying. Cut back on Starbucks because it costs more. 1-2 times per week instead of 3-4. Buy coffee drinks, but not for caffeine. Caffeine doesn't agree with her; get de-cafe. AVAILABILITY: Have means, can go out and get it at FF or Rest, wish would stop doing that since I have food at home I can eat. Eat what's sitting out, or if not in a hurry, make something, like soup or scrambled eggs. UH vs. H: Don't get sick after UH, but notice with UH food, don't stop, like chips. For me keep eating chocolate. Soup and salad fills up more. Taste: Try to eat veggies, vitamins go into water, but don't like to eat veggies. Very picky about salads, and have to		serving sizes should be. Teach us how to eat healthy. Lots of projects, but blanking out right now. Told us don't let mood affect what want to eat. I learned that it's really, need to watch what you eat. If become overweight hard to go back. Causes diabetes, clog arteries and blood clots. Learned about drugs what they can do. How presented by bringing in cereal boxes and showed cup measure and what supposed to be eating. Portion sizes showed us overeating when eat cereal. Used labels to write down nutrition facts to see what putting into our bodies, more of one thing and not others like protein and sugars, vitamins. Learned about high level of fats and to avoid it. Find food that's more nutritious. Don't eat chocolate bar with same caloric	Have fruit, I would say to get less greasy pizza, when I get pizza oil seeps through tray. I buy pepperoni or cheese pizza. Nothing to suggest cafeteria to get. Healthy = fruits, veggies, grains. Want café to get grapes, no veggies. Don't buy salads. Parents/Community: Bigger selections of foods, but no specific ideas. Influence friends in cafe: Most of friends eat fruits in cafe, like fruit cups and salads. I don't like salads from anywhere. Eats lunch in cafeteria. More options for healthy foods like salads and sandwiches, that's good, I would say more protein like chicken and get more creative but stay healthy. Do have apples and oranges, maybe bananas, do have carrot sticks, maybe broccoli or celery and dip. Having only healthy

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have chicken in salads; don't like dressing. Won't eat just any veggies, but will eat some without dressing (e.g. carrots). MOST INFLUENCE: Quality of food; freshness is enticing. What it looks like. Looks good to eat, want to eat it. Like salad plates cold, and soup plates are hot. Fam/Friends to eat healthier: Mom says randomly have to eat healthier, and Mom sticks to it, doesn't force on her. Have to find healthier food I like. Need to control sweet tooth; go off of sugar. Healthier way to eat food she likes. Diet since last year, don't eat sweets and sugar; eat salad and veggies, eat Mexican food. Family: Yes, Mom. Had eating disorder didn't want to eat anything except veggies and salads. Eat something Mom buys, eat sweets once a week. Friends: No. School: HS learned about calories, portion		value as healthy food. Don't eat a bag of chips due to calories and fat content. Learned how to eat labels, and look at FF food labels. At chili fries, look at caloric value, and then next time order something with less calories. Need to eat what craving, or will over eat. H = chicken salad, meat and veggie, fruit. Always have oranges in house, but takes time to prepare them so might not eat them as much. Learning about diseases from eating UH. Image is important. How greasy foods affect acne. I'm on diets now to lose weight. Tried with group, and other stuff came up and stopped. Mr. Gravert not supposed to have a set routine but fit in a time and place to exercise. Unit on nutrition where looked at FF menus and calculated calories for one meal, and saw it was really	food out there; if hungry only pick healthy foods instead of what's there now. Parents at home: No so much that comes out of a box, but more fresh like my Dad's not WinCo dinners or COSTCO. More fresh veggies. Not processed food. Parents/Community: Influence everybody like schools to tell everyone how to eat healthy. Implement nutrition curriculum in all schools before kids start getting into eating habits like 5th, 6th, 7th grades so they'll know what will happen to them if they don't eat healthy. Teens: Nothing else. Vegetarian noodles are fine. Sometimes serve veggie noodles, but would like to see it more often. Eat fruit and veggies. Would like grapes, strawberries, mango; like all fruits. Parent/Community: Depends on students, can't think of anything. Parents:

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size. Doctors: Yes, sometimes my doctor tells me what's healthy to eat. Internet/TV: No. Cost: No. Availability: Have to get something to eat or ignore it. Snack on granola bar, fruit. Things readily available. Fruit in bowl on kitchen counter. Media: No. Taste: Sometimes if looks good and tastes good, if doesn't taste good don't eat it. MOST INFLUENCE: If tried it and know I like it; tastes good and is healthy. H vs. UH: B'day parties and holidays don't eat healthy even though know it's not good. Eat cakes and candy. Eat H feel good, eat UH feel disgusted, stomach feels upset. When eat sweets feel sick. Friend eating UH - cause effects on her health, body gets used to eating unhealthy; show some healthy choices. Grandparents show,		a whole day's menu. That book in English, "Chew on This". FF I eat the most is Taco Bell. Get something off fresco menu without cheese and sour cream and it's healthier. Food pyramid and realized I wasn't getting all fruit and veggie servings which was eye-opening. Now trying to get more fruits and vegetables, but old habits hard to change. Usually eat veggie Mom has at dinner because she puts good seasonings on it. Calculated how many calories we're supposed to eat per day and that helped me not eat over my calorie range. I watch my calories in general more than before.	Serve lots of veggies. By self on Jenny Craig at home. Think twice about what eat so don't get diseases like high cholesterol. Eat salads. Want pears. Make healthier foods more appealing like the way it looks so it will draw me toward it to want to eat it. Want healthier foods to look more appealing. Friends eat heather: Nothing they can do, not going to stop each other; eat what want to eat. If really hungry, will eat more even though stomach can't handle it. Parents/Home: Cabbage. Love cabbage. No cabbage in cafeteria because afraid it would be nasty the way they prepare it. Mom tries to influence me, but "eh". Eat mostly soul food, which is almost never healthy. Keep fruit in the house, and Mom tries to get us to eat veggies. Fruit in fridge or on counter. Does not eat in cafeteria. Knows

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and I tell them what I want. Feel: tell them what I want them to buy. Trying to eat healthier since G'pa diabetic. Healthy choices like veggies and fruits and not snacks (chips, fruit snacks). Friends: Only influence if with them at their house, eat what they have. Don't influence that much. School: If buy lunch, limited amount of choices to buy. Depends on what have, regular Cheetos, taste good, water, burrito or hamburger or nachos. Doctors: Told me to eat healthy. Internet/TV: No. Cost: Buy off brand if costs less. Fruits/Veggies: Veggies buy in freezer section what G'pa wants. Availability: Usually just get what's ready. Would pick less healthy if readily available. Taste: Has to taste good to eat something. MOST INFLUENCE: Grandparents, buy			what's available, but since MS never interested in cafeteria food due to the way my Mom raised me and always used to her food. When I did eat in café wasn't what I liked. Bring a bar for lunch from home. Remove foods high in fat could improve overall health of students, foods that are good for metabolism and brain function. Greater variety for fruits and vegetables. Don't think should offer any chips, unnecessary. Add poultry items and more pasta for complex carbs. Parents/Community: If everyone strided to change one thing and talk to the School District to change one thing that would help them out. Serve more variety of veggies; pretty much issue us healthy foods. I want a cheeseburger, but not healthy. Bring apple from home, I don't eat that much during school time.

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food. H vs. UH: If really hungry or at friend's house eat UH over H; what's available. H food gives me more energy than UH food. Try to eat veggie with dinner, like salad. Whatever is convenient to make. Parents buy veggies, I pick out veggies and other things. Taste, what family likes. I make meatballs because my Dad likes them. I do all cooking at home. I'm a good cook. Family: Yes. Friends: If friends bring something for lunch that looks good, I'll want to make it or buy it. If friends come over and like something, I'll make it for them. If it looks good, appealing; if not appealing looks soggy, dirty, oily. School: Freshman year learned about food, read labels, reduced fat may not be true. Learned tricks on food labels. Doctors: No, don't go to doctor that much.			Would buy apple from cafeteria. Parents/Community: Guide children and show us now, but children make own decisions. Serve more salads and sandwiches with roast beef; more variety of salads and sandwiches. Doesn't eat lunch in the cafeteria. Healthier choices wider variety of fruit and salad. Once dowse salad in dressing not healthy. Carrot and celery and Ranch dressing for dipping. Wants bananas. Parents/Community: Nothing they can do, can't think of anything. Provide more healthy food than unhealthy food. Students more likely to buy healthy food. Parents: No new things they can serve me; generally pretty healthy. Friends: No recommendations to eat more healthy. Eat lunch in Café. Provide more variety of fruit, healthier

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Teachers influence. Internet/TV: TV ads make food look good and want that. Advertise that make food look healthy, like Nutragrain. If make it look healthy and taste good then I'll want to eat it. Not FB or Twitter. FB doesn't advertise food. MOST INFLUENCE: Teachers in health science 1 class. Friends to make eat healthier: eat healthier with me, if they're eating chips, then I'll eat chips, carrots, then I'll eat carrots. Family: Eat what they eat, if they eat unhealthy, I'll eat that (e.g. cookies). Eat what's available. UH vs. H: Taste, UH tastes good. After eating broccoli all day, want sweet. If eat cold food all day, may want something hot. Cost: No. Availability: Yes, don't go shopping as much, so try to get as much healthy food as possible. Go shopping every few			choices instead of fried chicken replace with something healthier. \Don't serve fries. I like fruit, would want grapes and pineapple or apples. I've seen oranges there and are good, too. I always get fruit with my lunch. Usually buy pretzels and Bosco sticks, or chicken sandwich and either water or milk. Always an orange with lunch. Have a lot of salads, but I don't choose salads. Sometimes have beans and fattening stuff on salads. Have all kinds of sandwiches I like. Parents: Serve more baked chicken at home, more veggies like broccoli, carrots, corn, green beans. Parents/Community: Show cafe how foods they serve us are influencing our body. Don't serve pizza; so much grease coming off of it. Teens eat healthy: Show them or tell them what

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months. Homework: Reach for cheese and crackers snack, don't have to cook. H vs. UH: H feel more energetic and want to do homework. UH feel tired. Go grocery shopping with mom, what I find interesting, no advertising, colors; whatever in mood for; salad, lettuce varies; go shopping every week. Family: Yes, Mom has diabetes so can't get too much sugar. I didn't grow up eating sugary cereals. Just my Mom, me and my brother. Friends: Yes, because at lunch we all grab different things. I have friends who like to eat off my food because like what I grab. School: Yes, changes schedule for eating, different from weekends and vacation. School planned timing to eat lunch and breakfast. Bkfst eat earlier than on weekends. Weekends don't eat big meals, but snack.			foods in cafeteria are good for them and tasteful. Tell parents when they go to store that fruit and veggies are good for you and how to prepare them. White rice not healthy, more salads, baked chicken. Eat lunch & breakfast in café. Like to see Subway sandwiches or salads, more fruits like grapes, pineapples. Do have apples and oranges. I eat oranges every day so I don't eat chips. Like pineapples, was there for a week, but don't sell it anymore. Parents/Community: Input into what they want their child to eat. Parents: No, if want something parents will buy from GS. Choice of food. Do a survey and see what gets the highest opinion of what should be served. Food not that unhealthy, but not what they want that causes them to go to the snack bar and buy sugary foods, like

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Can't snack at school due to classes. Holidays, eat whatever we have, not super healthy, but what we have. Doctors: Yes, had to go see a nutritionist because my weight level was pretty bad. I'm controlling my food now based on nutritionist. Weight was high. Media/TV: What see on TV ask Mom to get at grocery store. Advertisements make food enticing. Cost: No. Don't tend to eat caviar. Availability: Don't start to cook a meal when get home from school, get frozen taco or burrito that's quick. Granola bars to grab. Fruit on counter, don't eat sugar stuff after school, don't grab veggies since in the fridge. I like to grab banana after school, different every day after school. Taste: Yes, not going to eat anything that doesn't taste good. May eat cauliflower over broccoli because like			gummy candy, kettle corn, chips, soda, brownies, items not as healthy. Lots of sugar at snack bar. More fruit besides apples and oranges. ES had bar with grapes, watermelon would like that and caused kids to get fruit more because those were the ones they liked. Parents/Community: Donate food or money to help cost; if approved, help prepare food. Parents: Buy healthy food and prepare it healthy and lay off on frying food. Ask them to bake it. Friends: Stop drinking soda, I don't drink a lot of soda, don't like the feel on my teeth. I'll drink juice and need it since feel my sugar getting low. Parents buy soda, so not friend's choice. Recommend buy clear soda, not dark soda, causes pimples to come out on skin. I don't drink Coke. Does eat in café. Have survey to see what students like to

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cauliflower better. UH vs. H food: Yes, if eat healthy feel better about self, feel fuller, compared to eating Chinese food, don't feel full very long, and feel lazy afterword. H food more energy. Eat UH and know UH because I have no other choice, like at a friend's house and only have chips, won't ask for salad or something. MOST INFLUENCE: Media or family, since mostly eating with family. Media on Internet and way watch TV and see ads. How things are broadcast to us, looks flashy and good on TV. Internet: Less influential, but still influential. Family: Cultural aspects, family recipes, I'm Puerto Rican and we eat a lot of meat; not vegetarian. Mom's a vegan, how knowledgeable you are on subject Mom's a vegan because knows what goes on			eat. Salad gets my interest, but dressing not what kids like, so get chili burrito what they do like. Different dressings to attract students to get more salads. Had dressing didn't like, so next time didn't get a salad. More ingredients in salad, don't know what's in the salad. Likes to try new things, but most students won't eat what they don't know. Like to see fruit salad and spinach in with lettuce in salad; romaine lettuce. Parents: Suggest not to make so much food. Shop every day for groceries with lots of leftovers. Choice of leftovers, or look in back of fridge and see salad. Eye more attracted to non-salad items in front part of fridge. Teens: Have like bulletin board where lists what having today. When looking at food, and pass salad, can't go back and get at end of line to get salad if

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in FF industry and chooses to not be a part of it. Friends: Yes, think so. Not to be mean, but those that eat more and are bigger, you might tend to eat more as well. People around the same weight tend to hang out with each other. Doctors: Try to, all doctors tell to eat fruits and veggies, honestly, kids don't listen to that. It's what about they see as good on TV and Internet is what they want to eat. Cost: Yes, if costs less and looks good, will want to buy it. Lunch here is $3.00, offers normal H.S. meals, and not very good for you, but filling, so buy it. Availability: Really hungry, quick in microwave, open bag of chips, easier than cooking a meal. Want chips or cookies quick. Taste: Of course, if something tastes good, and availability is good, cost is low, and shown as flashy, will want it. MOST			decide that's what I want. List choices so I get to choose before I get in line. Feel like on conveyer belt and have to pick something as I move forward. Beginning of line is healthy stuff, want to see it before buy it. Might want hot food, but passed it already. What you see in your life like chips and cereals left and right, what you see you'll be thinking about. Then you'll see commercials about those chips and will want to eat it. Big companies promoting bad food due to economic benefit and not healthy food. Research myself on what is healthy and not. Research online vs. watching commercials that say food is cheap, and I'm hungry so I'll buy it. To eat healthy, listen to your body and then after eating healthy, gorge on bad food. Didn't eat balanced diet, and then craved food and overate.

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INFLUENCE: Cultural aspects of family and TV advertisements, newest thing comes out and on TV want to try it. Family: Buy more healthy foods and cook more healthy meals will influence me to eat healthier. Fruits easy to eat, if parents bought fruit would be healthier. UH vs. H food: Definitely better after H food, if eat apple feel good and have energy and body feel good; chocolate will give quick burst of energy or stomach hurting later, feel bad after. Mainly what have at home, what Mom buys at grocery store; don't have a lot of say. Can tell Mom what wants and she'll buy it. Friends: No. School: lunch. Doctors: No. Internet/TV: No. Cost: Not at grocery store, but if going to FF or out to each, get cheap food. Just at FF			Eat lunch in café. Suggest more options for fruit and not just apple and fruit cup. Healthier meats like white meat instead of burritos. I'm a fan of berries are good for antioxidants, strawberries, blueberries. Meat would like turkey sandwich, white meat sliced in salad. Usually buy Caesar salad, but looking on dressing packet with 19g of fat, so usually only use 1/2 the packet. Also I like Asian salad lettuce, cranberries, wonton sticks, almonds, mandarins. If no salad, I'll go for vegetarian stuff like noodle box or bosco sticks (cheese sticks). Parents/Community: They would say not as much fried food, different variety of salads like 2-3 per day, choice of a few different fruits per day. Try to use food pyramid, but still trying to get all the food groups in each

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get cheap stuff, rest get what we want. Availability: Eat what's there. Taste: Yes, if don't like it won't eat it. MOST INFLUENCE: What we have at home. Dinner we usually have meat, salad, and type of veggie like green beans. Snack at home probably not healthy, chips or something fast you just grab. Friends/Family to influence eat healthy: I don't know, friends tell them. My friends eat pretty healthy. Natural foods like veggies, fruits, meat are healthy. H vs. UH: don't think about it a lot, feel more tired when eat UH food. Parents have a big influence on what kids eat, and I listen to my parents. Parents encourage me to eat healthy at home. Whatever parents buy, my food choice. Buy variety. Healthy fruits and veggies, chips and cookies. Whole family shops together			day. Snacking a problem and adds up my calories. Usually I'll carry around a snack all day. Trying to switch from chips to carrots and grapes for snacks. Usually taking chips or fruit for snacks and go back and forth eating them. My Mom buys chips for sister, and since they're available, I take them, and convenient. Fruit have to prepare it.

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and influences purchase. Family: Yes, a lot. Friends: With them don't have a lot of money, go to FF because cheap. Where we want to hang out and closest FF, but won't eat at McD. From learning about FF and mostly McD, and read "Chew on This". School: 9th grade reading Chew on This tried to stay away from all FF. Now just stay away from McD. Doctors: They recommend I eat more calcium. Do talk to me about diet. Internet/TV: No. MOST INFLUENCE: Family influence: If saw parents eat healthier, I'd do it too. Friends: Typically eat FF when together, so if we all ate healthier influence. H vs. UH: After eating healthy food feel more energized, UH food feel lazy, sluggish, tired. Not a lot of fast food. Depends on how hungry I am or not. If hungry, eat something			

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that would "stuff me" and fill up fast so not as hungry. Want something quick and eat variety of stuff. Mom would have cooked already or first thing could find in cabinet. In cabinet find chips, bread. Family: No. Mom buys food and gets what she thinks is healthy for family. RN at Kaiser. Don't ask her to buy food for me. Friends: Not really, at what I want they don't influence me. School: Eat what provide me in cafeteria for lunch. Not really hungry at lunch. Buy pizza or chicken nuggets. Doctors: No, unless tell me to eat something. Internet/TV: No, unless really hungry then want something see in an ad, but normally wouldn't be influenced by TV. Cost: Yes, if really expensive wouldn't want to waste my parents' money. Taste: If ate once and			

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didn't like it wouldn't eat it again. Does influence what eat. Not much influences me, except when I'm hungry. If drive by a FF and I'm hungry, ask parents to go in and get something to eat. How I feel, what my family eats and makes, what I like to eat. If I feel down or sad crave chocolate; bored go after chips and unhealthy foods. Family: Foods make for dinner. Usually Mom makes chicken, healthy stuff don't usually go out to eat FF like used to. Food we make have lots of protein, tortillas, bread. Dad's side variety barbecue meat he likes to get dinner things at WinCo. Varies from home cooked meals to going out and getting something. Hard on Mom when brother was born, and she wants to lose weight also. Make more home-cooked meals as brother got older.			

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Friends: At school no, I eat what I want to eat; at their houses if they want ice cream or chips, I won't eat with them. School: Try to eat salads and sandwiches or green burrito or chicken sandwich from cafeteria. Doctors: Somewhat, if see doctors on TV I hear diet, diet, diet. No personal doctor; doesn't influence. Internet/TV: No. MOST INFLUENCE: Being around my parents and growing up with what they cook. Cost: No, but healthier food like meat and veggies can cost more. Still need to eat protein and veggies. Availability: Mom's house tortillas cheese and heat up in microwave. Dad's have more potato chips and tortilla chips. Eat salsa and tortilla chips at Dad's Goes back and forth from Mom and Dad's house. Taste: Likes almost anything, but mood over taste. H			

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vs. UH: H food feel like I ate something good don't think of fat and calorie intake. UH (FF) "I can't believe I just ate that" and how it affects my body. On Jenny Craig diet plan so have to watch what I eat so watching BMI and trying to get down to where I'm supposed to be. Now my stomach shrunk so eat less compared to when used to eat a lot of snacks. Eat fewer snacks. Started Jenny Craig Nov 2011. Family: They help me watch what I eat so don't eat too sugary snacks or sodas. Buy healthier juice and foods for me. Friends: No, don't eat when go out with friends. School: Days don't eat at school. Sometimes buy food in cafeteria at bkfst and lunch. Doctor: Yes, he wants me to lose weight. Internet/TV: No, Don't want TV lately, but used to influence if got bored would eat			

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while watch TV. Ads, no. Cost: Sometimes, if feel cheap don't buy any food. Availability: Think about what to eat since on diet. Eat Nigerian food at home. Sometimes I have to make something, most times stew already made and I heat it up. Taste: Sometimes but won't eat it if it taste's bad. H vs. UH: H feel better since making sure I'm eating healthier. UH food easier to get diabetes or other disease. Whatever craving for that haven't had for long time, find it, and eat it. Family: see parents eat something that looks good, make me one. Mom, Dad and brother shop. Yes, have input into what buy, like chili dogs. Friends: Sometimes, friend gets stuff and knows allergic to it, and tells me to stop eating it. Allergies don't influence what eat. School: Not that			

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many choices in cafe bkfst and lunch. Have to decide what I want based on menu choices. Doctors: No. Internet/TV: Commercials about food, and when go to that place I get it. Then find out it's not that good. Looks good, like juicy hamburger or really good taco or burrito. Cost: Not unless I'm on limited funds like money I earn, so if running low get cheapest thing. Availability: Go in freezer and find what I'd like. Usually prepare something like hamburger, corn dog, Tostitos, hot pockets, nuggets. Taste: Has to taste good, not too salty or sweet, just right. H vs. UH: I feel more sleepy after eating UH food vs. H food. H=fruit and certain types of veggies. Hate most veggies. I try to maintain a structural balance to my diet. Have workout program base			

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foods on program and what I need. Small portions, six meals a day. Take in a high amount of protein, and carb to help me, and everything else falls into place. Eat complex carbs, pasta, helps keep my energy up. Eat fruits and veggies. Three main meals, I tend to eat lots of fruits and veggies. Try not to eat after 7 pm, but try to eat every 2 hours. Family: Helps me with eating schedule and Mom cooks for me to keep me healthy, maintain my portions. Dad really influences my exercise. Friends: We're trying to grow healthfully. School: No. Doctors: Yes, my doctor a while back I was overweight and he influenced me to start a diet. P90X diet and workout and my Dad started and then over summer lost 35 lbs. when did what my Dad did. Internet/TV: See images of people, but			

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not influenced. My personal image to be a better person is above Internet images. P90X routine comes with booklet and recipes. Dad heard about program on Internet. Cost: No. Availability: Try to plan out what eat after school. Mom is structured to have something ready for me. When we started this diet, kinda a whole family thing. Mom changed way she cooks to follow the diet. Meal is small plus salad; snack is fruit. Taste: No. Mom makes good food on this diet. H vs. UH: Now energy levels gone up on diet, when I do play sports on weekend have more endurance. Family/Friends influence: Mostly family, Dad. H = basing yourself off the US plate federal guidelines for portions and food groups. Depends on what parents want to eat,			

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what I want to eat and in the mood for. Parents grocery shop, or go out to eat. Mom sometimes cooks at home: Family: Yes. Friends: Yes, say they want to eat something, and I'll eat it, too. I'm not picky. School: Not really. Sometimes eat in cafe. Doctors: No. Internet/TV: if see recipes that look good want to make them. Ad pix want to eat it, only sometimes. Wendy's chicken sandwiches, but have to sound or look good. MOST INFLUENCE: Family. Family to eat more healthy, cook more at home. Eat out a lot. Friend influence: Don't eat midnight snacks would eat healthier. Cost: Sometimes, not really. Watch what I spend when go out to eat, own money, how much I really want to spend on food. Availability: If don't want to eat something at home, walk somewhere to get something to eat. First			

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reach for chocolate, Cheese-its than start making food or go out and get something to eat. Taste: If I like it, go back and eat it again. H = salads, veggies. UH vs. H: UH feel bloated and stuff, H food fill up faster. No difference on energy level. Feel better about self when eat H. House has cupboard has snack foods so I open it and eat what's there. Family: No. Friends: No, School: no, don't eat lunch at school. Doctors: No. Internet/TV: Commercials may make it appealing, but I don't pay much attention. Cost: We tend to go for cheaper foods; family buys it. Don't eat FF or rest. Just go to GS. Availability: Filled with crackers, chips, cookies. Go to cupboard after school and get something. Taste: Of course! If doesn't taste good, not much point in eating it. MOST			

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INFLUENCE: What's available, and how I feel (salty or sweet), mood has a lot to do with it. Bad mood, will go for chocolate. H = whole grain crackers, salad without a lot of dressing, veggies. Don't' really know. Family: Eat with Mom or G'ma at dinner. Eat what they prepare which is usually something I like. Taste: important, but don't eat what I don't like. Will find something else. G'ma makes rice with chicken, or hamburger helper. Don't like meat, so eat soup. Mom doesn't cook. G'ma cooks. Friends: Sometimes, usually if we go out to eat and they say it's good, I'll eat it. Have same opinion about what to eat. School: No. Doctors: Yes, whenever I go in they encourage me to improve on diet. Sometimes ask me what I eat. Tell me to stay away from			

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sugary sodas and lots of fattening foods, hot Cheetos, drink more water. Internet/TV: Yeah, when a commercial comes on and show food makes you want to eat it. Sometimes, go out and eat it. Most of the time, the ad just goes by. Internet: No. Cost: Not really, sometimes when out with friends. Depends on what we all want to eat and can afford. Sometimes have to go to McD and get off dollar menu. Sometimes G'ma or Mom sets a limit on how much they want to spend and have to find something cheaper. Availability: Home will get bag of chips (mini) and then wait until dinner. Chips or apple available that's filling. Friends to make eat healthier: Encourage me to buy things and tell me what healthy foods are good tasting. Family: Buy more fruit and healthy foods, I like fruit. H			

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vs. UH: Not sure what prevents from eating H vs. UH, but usually UH tastes better. MOST INFLUENCE: What's available. Say there's chips sitting there and no healthy food, choose chips. How much I weight influences what I eat, and what is recommended weight for me. PE teacher told me idea weight. Having that knowledge helps me eat healthy. Friends: Want to get what friends are getting. Family: At home, whatever they cook you'll eat because that's what there. Internet/TV Advertise: Looks good, and want it, even if not good for you. Magazines or billboards, too. Don't run out and get it, think about it, or tell Mom to go out and get it. School: No. Trying to eat healthy and eat salads and snack wraps. Mom on diet and influencing to eat			

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healthy. Doctors: Yes, eat vitamins. Have to do physical for cheer. Taste: A lot. If not good, you don't want to eat it. Cost: Yes, because if it's too expensive and looks and tastes good, might not buy it. Might not be healthy, too. Buy something cheap but can afford that's healthy. H= salad, yogurt, snack wraps, sandwich, fruit bowls. FF sells fruit bowls and salads. Availability: Get snack first, like cheese-its, don't have to prepare unless microwavable. Mood: Yes, crave ice cream with menses. Want sweets when feeling down or slow and need energy. Friends: Gabby on diet, try to tell each other what had for lunch. If friends at healthier, would eat healthier, too. H vs. UH: Eat UH food because it tastes good, can comfort them. Think won't make them full, or don't			

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even realize eating UH food. Eat FF feel tired and want to go to sleep. H food feel better and so awake and not tired and lazy. H food have more energy. What your parents buy. What is available that's cheap for me and parents. Rest and business around home. If McD close, always go there. Usually get what's in the house. Family: Yes and I have input into what they buy, but they buy the main food like chicken, and plan the meals. Mother and Grandmother plan meals. Friends: Yes, kinda do, when go to their house eat what they eat, or introduce you to new food and then eat it. School: No. Back in the day food was made on sight, now it's mostly packaged foods. Doctors: No, recommend but don't influence me. No sports. Go to physical for camp. Usually			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
pretty healthy so don't talk about food. Internet/TV: If TV in room, TV on will affect you, if in living room with people fighting over it don't watch it. Ads like McD new chicken pocket thingies I went to go get some and they were good. If doesn't look good, I ignore it. Taste: Yes, salad with light ranch, not want to eat it like if had regular ranch. Cost: Big family would buy cheap stuff so enough for everyone. Affects what Mom and G'ma would buy. Availability: Depends on mood and what's at home, like ice cream if haven't had it in a while. Grab something vs. cooking because you have to clean up after. MOST INFLUENCE: What I feel like eating. Mood. H vs. UH: UH because of taste, popular, costs less. Family influence: Prepare meals before hand and eat it			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
because it's there, like a salad or fish and not a lot of fat in it. I wouldn't tell them to make something else, if I didn't want to eat it I'd grab a sandwich or make something else. Friends influence: Not with them all the time, can't influence me unless with them all the time. If they're eating healthy, I'm more likely to eat healthy. H vs. UH - H = not processed, organic, things you have to prepare yourself. Fruit, meat fresh from deli, frozen meat better to keep nutrition inside, deli that cuts meat in front of you. What goes on in my head is I want to eat a salad, chicken salad, because hot outside but what makes my decision is what's available to me at school or home. Is it available? Is it available if I cook or order it or reheat it, or just ready. If busy, I'll eat it if there. If not			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
that busy, I will make myself a salad. Family: Yes, influences me a lot. Choice between steak dinner what everyone's eating, majority rule instead of a salad. Friends: Not as much as family. Lunchtime, get what I want not what my friends want. Friday, friends go out, but I stay at school and eat what I want. Evolutionally wise, eat what family is eating. School: When at school think more logically and complex. Think about body and want to eat right and take care of it. At home, eat chips or chocolate before brother eats it all. Doctors: Feel like criticizing me more than helping me. Feel more attacked or they're lecturing me. Internet: No, not into Internet. TV: Not a big influence, but gets into subconscious with the advertisements with different types of food			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
(McD, BK). Wouldn't go out and buy something saw in ad like burger. Recook pasta or make myself a sandwich. MOST INFLUENCE: Family ties and the way my parents influence me the most. Older and wiser and what they say must go. What I'm doing, if bored, more likely to eat to do something. Sadly, what's available immediately, but most likely won't make something. Eat what I'm craving or feeling. If feeling stress may eat a chocolate bar, or caffeine. Taste: Older one gets, have tastes for more variety of food. Like to eat what I like. Like spaghetti and more likely to eat that over salad. H vs. UH: I'm more aware of my actions, makes me feel better about myself if eat H food. With family, still being guided by parents, and will eat what they have. UH feel sluggish and not doing something right			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
for myself, but eat it because it's available. For meals if my Mom cooking dinner usually eat everything being cooked, but seconds only pick veggies. Main entre meat, potatoes, veggies like a stir-fry. Family: Yes. Friends: Sometimes, when go out with friends to a movie and getting snack, I'll eat what they're eating. School: Lunches try to eat salads and side of fruit, based on what's on menu. TV: No. Watch TV but don't buy what's on TV since false advertising. Internet: Don't see food ads on Internet. FB: No, don't talk about food. H=something that doesn't have a lot of saturated fats, pasta, whole wheat, veggies but not with a lot of butter. Fruit as long as it's not with added sugars; fresh fruit. H vs. UH: FF and junk food tastes better the H food. Sugar and fat addicting and want			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
more. When eat FF or junk food, have stomach ache though enjoyable while eating it. After eating whole wheat or veggies, have more energy. With healthy breakfast notice I do better in PE. Taste: Yes, if I don't like certain veggies won't eat, but chips taste good and will eat. Cost: Convenient costs cheap, at least we think it does. Project compared cost at GS and FF, and found GS store was cheaper. FF convenient but not cheaper. Parents understand GS cheaper and don't go out a lot. Own money, if not going home, then go to FF. If home all day, go to GS. Availability: A/S grab a snack, crackers like Ritz or cheese-its. Have cookies and fruit, but most times go for something quick and easy in small bags. Something to tie me over until dinner.			

Source Q-1 What influences food choice?	Experience Q-2 Does Location affect choice?	Knowledge Q-3 Learned in HS-1?	Opinion Q-4 Recommendations for school cafeteria?
Other: If go out to eat, family members switch off picking where to eat out, and sometimes have to eat at McD if sister picks it.			

Curriculum Vitae

Cynthia J. Soraoka MBA MSW ACSW

Objective — Obtain a college-level teaching position.

Experience

2008 to present — Dozier-Libbey Medical High School — Antioch, CA

Workforce Education Coordinator/Teacher

- Teach Health Science and Medical Terminology
- Previous teaching experience: Medical Economics, Hospital Health Services, Medical Front Office, Keyboarding, Decision-Making
- Coordinate work permits, guest speakers, e-mentor volunteers, job shadows, internships, and field trips
- Interface with community for meaningful student experiences
- Organize health care partner advisory committee

2006 to present — Los Medanos College — Brentwood, CA

Instructor – Medical Terminology and Medical Coding

- Teach medical terminology to pre-nursing, EMT, medical office, and other students interested in earning a health care degree.
- Teach medical coding (ICD-9 & CPT)
- Infuse technology in classroom instruction and projects.

2006 to 2008 — John Muir Health — Concord, CA

Coordinator, Workforce Development

- Conduct outreach to high school classrooms and events to recruit students for health care careers.
- Founded and adviser for JMH HOSA (Health Occupations Students of America); first health organization based HOSA chapter in the United States.
- Manage summer youth job program, internships and job shadows for high school and college students.
- Manage $1.2 million dollar budget for Work Study and Scholarship programs for John Muir Health employees.
- President elect, California HOSA Inc., Board of Directors

1999 to 2006 Deer Valley High School Antioch, CA
Teacher

- Developed and implemented Health Career Pathway teaching Medical Terminology, ROP Hospital Services and ROP Medical Front Office for 3 years.
- Integrated technology in all health career pathway class instruction and projects.
- Provided computer technical support to all Deer Valley H.S. faculty and staff for 3 years.
- Implemented HOSA (Health Occupations Students of America) chapter and took students to State Leadership Convention competitive events for four years. Awarded California State Advisor of the Year, 2006.
- Set up internships for high school students at medical and dental offices and Sutter Delta Medical Center in Antioch and Brentwood.
- Taught 72 teachers how to incorporate Microsoft Office and technology in all aspects of curriculum through Project Pipeline.
- Prior to Health Career Pathway, taught Computerized Accounting, Economics, Decision-Making, and Keyboarding.

1995 - 1999 Patuxent Medical Group Columbia, MD
Columbia Medical Plan (HMO)
Director, Practice Management, Information Technologies and Finance

- Member of Quality Improvement Steering Committee dealing with risk management, safety and quality improvement issues. Conducted data analysis for this committee.
- Successfully directed Y2K update on Unix/HP9000 and MUMPS platform assuring quality implementation.
- Directed budget and financial reporting using Oracle products for $110 million dollar company. Created Oracle databases and reports.
- Developed and implemented policies and procedures in the areas of quality improvement, finance and computer programming using collaborative team approach.
- Supervised 10 technical associates, 2 data analysts, 5 financial staff, 2 purchasing staff and one business analyst who did HMO and physician group contracting.
- Facilitated two Quality Improvement groups improving processes for claims payment that reduce costs.
- Provided data and data analysis to implement productivity system for

payment of physician salaries. Programmed in SAS and dBase.

1990 – 1995 Cynthia J. Soraoka, MBA, MSW Honolulu, HI and Ellicott City, MD

Physician Practice Management Consultant (own business)

- Implemented medical practice management computer systems, including electronic claims submission and reconciliation using The Medical Manager.
- Provided billing, bookkeeping, personnel management and office management to several doctors and dentists on the island of O'ahu and the Baltimore area.
- Developed and implemented policy and procedure manuals.
- Trained office staff on computers, and policies and procedures.

1983 – 1990 Straub Clinic and Hospital, Inc. Honolulu, HI

Continuous Quality Improvement Advisor/Management Analyst

- Coordinated and directed all aspects of quality improvement program for 150-bed hospital and 150 multispecialty physician practice. Trained by Harvard Community Health plan in quality improvement concepts. Quality improvement facilitator.
- Analyzed business practices of all departments in from the operating room, medical/surgical floors, and emergency room to all outpatient medical departments. Made recommendations for implementing improvements.
- Wrote and installed computer programs in the departments of Allergy and Immunology, Plastic Surgery, Health Management, Human Resources, Purchasing and others.
- Evaluated, selected and implemented new practice management system for clinic and hospital.

1980 - 1983 The Queen's Medical Center Honolulu, HI

Programmer/Analyst

- Programmed Admission, Discharge and Transfer (ADT) system for 500 bed hospital.
- Programmed inpatient billing system for 500 bed hospital.
- Programmed in COBOL, Assembly, RPG, and 4th generation languages.
- Created programs and reports at users' request on IBM mainframes.
- Analyzed users' requirements and implemented programming changes.

1976 – 1980 **Hale Ho'ola Hou** **Honolulu, HI**
(Medical, Dental and Family Planning Clinic)
Executive Director

- Directed all aspects of clinical and administrative operations of medical and dental clinic.
- Supervised a staff of 40 clinical, administrative and volunteer staff.
- Reported to volunteer Board of Directors for this non-profit organization.
- Wrote grant proposals for federal, state and non-profit funding; no proposal was ever denied.

Education

2004 to present **Walden University** Minneapolis, MN

- Doctoral student, Ph.D. in Health Education and Promotion
- Expected completion in 2012

1979 - 1981 **Pepperdine University** Malibu, CA

- Master's in Business Administration (MBA)
- Completed degree while working full time.

1974 – 1976 **University of Hawai'i at Manoa** Honolulu, HI

- Masters in Social Work (MSW)
- Voted "Most Outstanding Student" by peers and faculty.

1970 – 1973 **Springfield College** Springfield, MA

- Community Leadership and Development (BA)
- Completed 4 years of coursework in 3 years.
- Graduated Magna Cum Laude

Honors

2009	Cambridge Who's Who, Honoree, Workforce Development
2006	Cal-HOSA Advisor of the Year, California HOSA
2006	Outstanding Teacher, Contra Costa Economic Partnership
1990, 1982	Who's Who in the West
1990, 1989, 1987, 1981	Who's Who in American Women
1988	Who's Who in Emerging Young Leaders of

America

1976 Outstanding Student, School of Social Work

Licenses & Credentials

- Nationally Accredited Certified Social Worker (ACSW), 1976 to present
- University of California, Berkeley – F/T Vocational Education, Health Support Services, 2008 to present
- Chapman University – Single Subject - Health Science, 2008 to present
- Chapman University – Single Subject - Business and Technology, 2002 to present

Professional Membership

- Health Occupations Students of America (HOSA), 2004 to present
  - President, Cal-HOSA Board of Directors, 2008-2009, 2011-2012
  - Board member, 2007 - 2012
  - Member, National HOSA Competitive Events Committee, 2011 – 2013
- National Association of Social Workers, 1976 to present

Publications

"Issues Involved in the Computerization of Patient Medical Records at a Large Multi-specialty Clinic and Hospital", J. David Raney, Cynthia J. Smith, Proceedings of the Twentieth Annual Hawaii International Conference on System Sciences, Vol. III, 1987.

"A Computer Assisted Hospital and Outpatient Information System for Patients Served by a Multi-specialty Group Practice", Fred I. Gilbert, M.D., Robert A. Nordyke, M.D., Peter Higgins, MBA, J. David Raney, MS, Cynthia J. Smith, MBA, MSW, Proceedings of the Congress on Medical Informatics, 1985", May 1985.

"The Applications of Microcomputers in a Medical Group Practice Setting", J. David Raney, MS and Cynthia J. Smith, MBA, MSW, Proceedings of the Eighteenth Annual Hawaii International Conference on System Sciences, 1985.

Community Service

- PTSA Member, Deer Valley High School, Dozier-Libbey Medical High School 2003 to present
- Member and President, Mello-Roos Board, Antioch, CA, 2002 - 2005.
- Sonbeams Choir Director (children's choir), Church on the Rock, 2000 - 2002
- Stephen Leader, First Presbyterian Church, Walnut Creek, CA 2001 - 2010
- Curriculum developer, computer classes, First Presbyterian Church,

Columbia, MD1998 to 1999.

- PTA member; Ilchester Elementary School, 1996 – 1999. Delegate to Howard County PTA Council, 1996 – 1997. Coordinator, Student Directory 1997 – 1999. Representative to Howard County Parents for School Music, 1998 – 1999.
- Leader, Stephen Ministry, Columbia Presbyterian Church, 1997 to 1999.
- Elected Official, Kaneohe Neighborhood Board, 1991 - 1993.
    - Chairperson, Kaneohe Neighborhood Board, 1992 - 1993.
- Elected Official, Nu'uanu Neighborhood Board, 1987 - 1989.
- Secretary, Craigside Condominium Board of Directors, 1987 - 1989.

Newsletter Editor, Craigside Condominium Board of Directors

- Secretary, Hawaii Society of Hospital Social Work Directors, 1983 - 1985
- President, American Business Women's Association, 1983 - 1984
- Member, American Business Women's Association, 1979 - 1984.