

THE USE OF EVIDENCE-BASED STRATEGIES TO ADDRESS THE FEDERAL  
WELLNESS POLICY: A RESOURCE GUIDE FOR  
SCHOOL DECISION-MAKERS  
A DISSERTATION  
SUBMITTED TO THE FACULTY  
OF  
THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY  
OF  
RUTGERS,  
THE STATE UNIVERSITY OF NEW JERSEY  
BY  
BROOKE E. ZUMAS  
IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE  
OF  
DOCTOR OF PSYCHOLOGY

NEW BRUNSWICK, NEW JERSEY

OCTOBER 2014

APPROVED:

---

Kenneth Schneider, Ph.D.

---

Karen L. Haboush, Psy.D.

DEAN:

---

Stanley Messer, Ph.D.

Copyright © 2014 by Brooke E. Zumas

## ABSTRACT

Existing research has demonstrated a correlation between eating and physical activity behaviors in children and their academic achievement. Through legislation enacted in 2004, known as the Federal Wellness Policy (the Policy), public schools have been mandated to address physical activity and nutrition education. Although the Policy elevates schools' roles in wellness, the Policy itself does not set forth standards or guidelines regarding the type or quality of programming schools should employ to address these areas of wellness. The current study addressed the policy-to-practice gap in school wellness by examining district-level organization surrounding the Federal Wellness Policy, schools' use of evidence-based programs to address the Policy, the reported barriers to implementing evidence-based nutrition education and physical activity programs, and the components and information contained in a resource guide for school decision-makers that increase the likelihood of implementation of evidence-based nutrition education and physical activity programs. These four areas of inquiry were explored through a 22-question phone interview with 15 school decision-makers. Results indicated that schools lack organization around the issue of wellness, tend not to implement evidence-based nutrition education or physical activity programs, and report time and the low prioritization of wellness in comparison to academics as the most significant barriers to implementing such programs. Furthermore, school decision-makers expressed unanimous interest in a resource guide that would address reported barriers to implementing wellness programming in schools. In light of these findings, it is recommended that in order to increase the health of the nation's youth through evidence-based wellness programming, 1) knowledge and the link between achievement and

wellness must be strengthened for school decision-makers and disseminated more effectively, and 2) feasible implementation suggestions for schools that respect the competing pressures they face must be provided.

## TABLE OF CONTENTS

	PAGE
ABSTRACT .....	ii
LIST OF TABLES .....	vii
CHAPTER	
I. INTRODUCTION AND DESCRIPTION OF THE PROBLEM .....	1
Dissertation Plan .....	4
II. REVIEW OF THE LITERATURE .....	6
Nutrition .....	6
Factors Influencing Eating Behaviors .....	7
Barriers to Changing Eating Behaviors .....	9
The Role of Schools .....	10
Food Consumption .....	10
Nutrition Education .....	12
Physical Activity .....	15
Factors Influencing Physical Activity Behaviors .....	17
Barriers to Changing Physical Activity Behaviors .....	18
The Role of Schools .....	19
Federal Policy Impacting Implementation of Wellness Programming in Schools .....	23
Federal Wellness Policy .....	23
Schools' Use of Evidence-Based Programs and Strategies to Address Federal Wellness Policy .....	25
Factors Influencing Implementation Decisions and the Research-to-	

Practice Gap in Schools .....	32
Summary of Literature .....	35
III. METHOD .....	37
Participants.....	37
Measures .....	38
Procedure .....	40
Data Analysis .....	41
IV. RESULTS .....	45
Awareness of Federal Wellness Policy and Evidence-Based Programs .....	47
Schools' Use of Evidence-Based Programs and Strategies to Address the Federal Wellness Policy.....	48
Schools' Collection of Eating and Physical Activity Data .....	51
Decision-Maker for Schools' Adherence to the Federal Wellness Policy .....	52
Extent of Knowledge Regarding Evidence-Based Nutrition Education and Physical Activity Programs.....	54
Training Received on Evidence-Based Programs and their Implementation .....	55
Attitude and Frustration Towards Evidence-Based Programs and their Implementation .....	56
Sources of Information and Resources Utilized by Schools in Regards to Wellness.....	60
Factors Influencing Implementation Decisions .....	62
Utilization of a Resource Guide and its Suggested Components and Information .....	69
V. DISCUSSION .....	73

Dissemination and District-Level Organization around Wellness and the Federal Wellness Policy.....	73
Schools' Use of Evidence-Based Programs and Strategies to Address the Federal Wellness Policy.....	78
Factors Influencing Implementation Decisions and the Research-to-Practice Gap in Schools .....	83
Resource Guide for School Decision-Makers.....	88
Limitations of the Current Study .....	90
Suggestions for Future Research .....	93
Implications for Policy and Practice .....	95
Conclusion .....	99
VI. RESOURCE GUIDE FOR SCHOOL DECISION-MAKERS.....	101
REFERENCES .....	112
APPENDICES .....	125
A. Child Nutrition and WIC Reauthorization Act of 2004.....	125
B. Healthy, Hunger-Free Kids Act .....	127
C. Recruitment Phone Call .....	129
D. Oral Assent.....	130
E. Interview Questions.....	132

## LIST OF TABLES

Table 1 Descriptive Statistics for Participant and District Demographics .....	46
Table 2 Awareness of FWP and Evidence-Based Programs .....	48
Table 3 Implementation of Evidence-Based Programs .....	51
Table 4 Schools' Collection of Nutrition/Eating and Physical Activity Data .....	52
Table 5 Decision-maker for Schools' Adherence to FWP.....	54
Table 6 Extent of Knowledge Regarding E-B Nutrition Education and Physical Activity Programs .....	55
Table 7 Training Received on E-B Programs and their Implementation.....	56
Table 8 Attitude and Frustration towards E-B Programs.....	60
Table 9 Wellness/FWP Resources Accessed by Participants .....	62
Table 10 Factors Impacting Program Success and E-B Implementation .....	68
Table 11 Utilization of a Resource Guide and its Suggested Components and Information	72



The Use of Evidence-Based Strategies to Address the Federal Wellness Policy: A  
Resource Guide for School Decision-Makers

**Chapter I**

**Introduction and Description of the Problem**

The health of the children in America is currently one of the most urgent issues facing the country today (Healthy People, 2020). Children are eating more, exercising less, and the negative consequences are vast (Office of the Surgeon General, 2010). The repercussions may be seen in cognitive, academic, physical, and psychological domains (Daniels et al., 2005; Office of the Surgeon General).

There has been a three-fold increase in the prevalence of obesity among 6 to 18 year olds in the United States over the past 30 years (National Center for Health Statistics, 2011; Ogden, Carroll, Kit, & Flegal, 2012). Currently, approximately 20% of this age group is obese (body mass index of 30 or higher) and 33% is overweight (body mass index of 25 or higher) (Ogden, Carroll, Kit, & Flegal). Physical activity is decreasing among this same age group, thereby contributing to the health deterioration of youth (Brownson, Boehmer, & Luke, 2005). Less than 20% of youth are engaged in the nationally recommended amount of 60 minutes of physical activity per day (Center for Disease Control and Prevention, 2002, 2007).

Overweight and obesity lead to an increased risk for numerous physical ailments and diseases including heart disease, type II diabetes, high cholesterol, bone weakness, and high blood pressure (Center for Disease Control, 2011; Dietz, 2004; Freedman, Zuguo, Srinivasan, Berenson, & Dietz, 2007; Li, Ford, Zhao, & Mokdad, 2009). In addition to physical outcomes, the health of children also impacts their mood (Strong et

al., 2005). Children who are at healthy weights and engage in regular exercise have lower incidences of symptoms of depression and anxiety than their peers who are overweight or obese (Strong et al.). This same pattern of results is seen for cognitive performance as well. Greater physical activity and healthy eating are associated with better memory, concentration, and attention (Strong et al.). Finally, the consequences of poor health for this age group surface through poorer academic performance, poorer standardized testing scores, greater school absenteeism, and more disruptive classroom behavior (Strong et al.).

Eating and physical activity behaviors of children are influenced by families, peers, media, the food industry, community attitudes, and schools (Bronfenbrenner, 1979). Schools have a unique influence because children spend much of their time there and it is one of the few shared sources of influence for large groups of children. Further, healthy eating and physical activity are consistent with the broader missions of schools to successfully educate all children (No Child Left Behind [NCLB], 2002). Moreover, all of the domains of potential negative consequences of poor health (cognitive, psychological, academic, physical) may negatively impact a child's success in the school environment. Because schools, by definition, are invested in the achievement of their students, and because healthy behaviors are related to achievement, schools have the ability, and perhaps duty, to affect change in these behaviors for the better. Further, eating and exercise patterns formed in childhood tend to carry over into adulthood (Freedman, Zuguo, Srinivasan, Berenson, & Dietz, 2007). Medical spending related to obesity accounts for 10% of all annual medical spending in the US (Finkelstein, Trogdon, Cohen & Dietz, 2009). For individuals who are obese, health care costs are 40% more, on

average, than normal weight individuals (Thorpe, Florence, Howard & Joski, 2004). Further, in terms of productivity costs in the workplace, obese employees miss more days of work, have more medical and disability claims, and cost a company \$285,000 more a year per 1,000 employees due to costs related to obesity (Hammon & Levine, 2010). The detrimental impacts of life-long obesity support the creation of an environment during the school years that forms healthy behaviors and habits.

There has been an increased effort through federal policy to address adolescent health insofar as possible through the schools. Since 1966, when Lyndon Johnson signed the Child Nutrition Act, the federal government has implemented policy in order to help improve the prevalence of healthy behaviors in schools (Public Law 89-642). Over the course of the past 45 years, minor policy adjustments were made until most recently when the federal government acted again, this time requiring that nutrition and exercise goals be set, that implementation be monitored, and that progress be tracked (Child Nutrition WIC Reauthorization Act, 2004; Healthy, Hunger Free Kids Act, 2010). The Federal Wellness Policy is the most comprehensive legislation of its kind to date. Its requirements set forth a framework for addressing some of the troubling health trends and behaviors for the children in this country. While it sets forth higher standards for schools' roles in healthy eating and adequate physical activity, the legislation itself does not describe a path towards fulfilling its requirements. Consequently, schools have been left without a road map to success, only the outcomes they are supposed to arrive at. Further, school resources and stakeholder factors can heavily impact the methods schools use to fulfill these requirements. With the goal of satisfying federal policy while also improving student health behaviors, understanding why schools may not implement programs that

are evidence-based to address wellness issues and understanding what elements a resource guide should ideally contain to increase evidence-based program implementation, becomes paramount, and the next step for research in this area.

### **Dissertation Plan**

This dissertation is presented in four subsequent chapters. The literature review (Chapter II) presents and discusses writings, research, and policy about eating and physical activity behaviors of children in the US, discusses their relationship to schools, reviews the guidelines of the Federal Wellness Policy, discusses how it has been implemented in schools, and examines the policy to practice gap and its relevance to school wellness. Chapter III reviews the research methods utilized in the current study which allowed the author to examine four major areas of inquiry through interviews with school decision-makers: district-level organization surrounding the Federal Wellness Policy, schools' use of evidence-based programs to address the Policy, reported barriers to implementing evidence-based nutrition education and physical activity programs, and the components and information contained in a resource guide for school decision-makers that may reduce the barriers to implementation of such programs. Finally, in the results and discussion sections of this dissertation (Chapter IV and V), the results, key findings, and implications of findings are reported and critically reviewed. At the end of the dissertation, a sample resource guide is presented for school decision-makers regarding the implementation of evidence-based nutrition education and physical activity programs in schools, the content of which is grounded in findings from participant interviews. The goal of this resource guide is to address the gaps that interviews with decision-makers unveiled, as well as to assist school decision-makers in understanding

the issue of wellness, the Federal Wellness Policy, and the most effective wellness programming that schools across the country can use to fulfill the Policy while also increasing the physical, cognitive, academic, and psychological outcomes of its students.

This dissertation is unique in its contribution to the field in several ways. While previous research investigated the extent to which schools are adhering to the basic requirements of the Federal Wellness Policy, this dissertation extends previous research by investigating whether schools implement evidence-based programs and strategies to adhere to the Federal Wellness Policy. Further, this dissertation is the first known study to investigate the reasons school administrators report not using evidence-based wellness programs and strategies, the barriers they encounter to implementing such programs, and the content in a resource guide that would increase the likelihood that they would implement evidence-based wellness programs and strategies. Further, creating a resource guide on the topic of evidence-based nutrition education and physical activity in schools that specifically aims to reduce barriers reported by stakeholders is the first of its kind in this area.

## **Chapter II**

### **Review of the Literature**

#### **Nutrition**

Over the past 20 years, obesity rates in US youth have increased (Pate et al., 2006). Rates of obesity (body mass index of 30 or higher) are hovering around 20% in youth, with rates as high as 30% in some racial and ethnic groups, such as Hispanics and African Americans (Caprio et al., 2008). Further, rates of being overweight (body mass index of 25 or higher) have also increased over the course of the past 20 years (Pate et al.). Currently, approximately 16% of 6 to 11 year olds and 12 to 19 year olds are overweight (Hedley et al., 2004).

Healthy eating, that is, eating that is healthful in both its quantity and quality, is associated with overall better physical health, including higher energy levels, healthier bones, and a lowered risk of disease and illness, compared to unhealthy eating. Unhealthy eating, on the other hand, is related to five of the top 10 leading causes of disease burden in developed countries and leads to decreased immunity and greater susceptibility to infectious disease (World Health Organization, 2002). It is also linked to numerous other negative outcomes, including physical outcomes such as increased breathing problems, and psychological outcomes such as lower self-esteem, higher rates of depression, and increased risk of being the victim of bullying and teasing (Strong et al., 2005). Mood impacts can be caused by short-term fluctuations in glucose which are associated with low nutrient food consumption (Benton, 2001). Behavior and memory impacts have also been observed results of poor nutrition. Evidence suggests this may be due to low nutrient levels, particularly folate, zinc, and glucose (Benton, 2001; Bryan et al., 2004).

Prevention of obesity during the school-age years is highly important because once children are obese, they are more likely than their non-obese peers to become adults with obesity (Caprio et al.). Further, when adults are obese, they have the same psychological and physical outcomes mentioned above for obese adolescents, in addition to having greater rates of early mortality, earning less, being less likely to have a partner, and being unhappier than non-obese adults (Averett & Korenman, 1996; Katsaiti, 2012; Pickett, Kelly, Brunner, Lobstein, & Wilkinson, 2005; Viner & Cole, 2005).

**Factors Influencing Eating Behavior.** Many factors influence individuals' food choices. A complex interrelationship exists between genetics, parental practices, social forces, and socioeconomics. Genetics alone may account for up to 90% of variation in the body fat of family members (Benton, 2004). This high heritability is in part due to strictly genetic factors that predispose certain individuals to weight gain, but it also may be accounted for by a shared environment and natural preference for certain nutrient patterns (Benton). For example, one study found that twins living in different environments tended to eat foods with similar macronutrient patterns, even if the foods themselves differed (Benton). This suggests heritability is partially responsible for choices about nutrient intake. Research also shows that food choices are impacted by innate taste preferences for sweet and salty flavors (Benton). It is no accident that many non-nutritious foods contain high levels of sodium and added sugars, in order to appeal to peoples' taste preferences.

In addition to genetic and biological factors, parental practices can also heavily impact eating behaviors. In one study it was found that the children who were breastfed, were introduced to lumpy foods before six months of age, whose families had stable

mealtimes, and had younger age of introduction of fruits and vegetables tended to both prefer and eat more fruits and vegetables by the time they were 2 to 6 years old (Cooke et al., 2003; Northstone et al., 2001). Further, children whose parents modeled fruit and vegetable consumption positively predicted children's intake (Cooke et al.). All of these factors combined accounted for 20% of the variance in fruit and vegetable consumption for participants in the study.

Eating behaviors in school-age youth are also influenced by social factors such as television, advertisements, and peer modeling (Westenhoefer, 2001). Children are constantly exposed to media messages that encourage them to eat foods that are high in fat and caloric content, but low in nutrients (Linn, 2004). Food advertisements are the largest category of products advertised and the US currently has some of the most lenient restrictions on children's food advertising in the world (Lewis & Hill, 1998). Marketers often use strategies such as portraying enjoyment from eating the product and using actors that children can identify with. By using similar peers to model the consumption of target foods in advertisements and by packaging foods with appealing graphics, advertisers aim to obtain children's attention and achieve an emotional response in order to influence children to consume the given product and influence parents' shopping decisions (Lewis & Hill; Linn). Overall, advertisers' strategies work; research with 2 to 6 year olds found that when they viewed 10 to 30 second television ads for specific food products, they were more likely to prefer the advertised product over another product (Boyland et al., 2011). Further, whether due to the viewing of food advertisements, the time taken away from potential physical activity, or the propensity to eat while viewing



television, there is evidence that watching television is correlated with less consumption of fruits and vegetables among adolescents (Boynton-Jarrett et al., 2003; Dietz, 1990).

Finally, socioeconomic factors also play a role in influencing the eating preferences and behaviors of children. Some barriers to healthy eating are naturally created when money is scarce, including the relatively high cost of fruits and vegetables compared to less nutritious offerings, such as fast food (Kinra et al., 2000). In addition to being more likely to consume unhealthy food, low income households are also more likely to have insufficient amounts of food, leading to the increased pressure to buy foods high in calories (Kinra et al.). Overall, due to a combination of factors, childhood obesity and low socioeconomic status are highly correlated (Kinra et al.). One study found that prevalence rates of obesity in children from low socioeconomic households were two and a half times higher than the national average (Kinra et al.).

In self-report studies that ask adolescents, as opposed to younger children, about the factors that influence their eating preferences, it is elements that have not yet been mentioned that adolescents tend to cite (Resnick et al.). In a phone survey regarding influences on eating behaviors, adolescents most commonly cited convenience, taste, money, nutrition information, and lack of time as the main factors influencing their consumption decisions (Resnick et al.).

**Barriers to Changing Eating Behavior.** All of the factors that influence eating behavior can become barriers to changing eating behavior. Unfortunately, many of these factors are inherently unchangeable by nature of being genetic (e.g., preference for sweet and salty taste), demographic (e.g., low socioeconomic status), early-life parental practices (e.g., breastfeeding, introduction of lumpy foods), or socially determined factors

(e.g., cost and convenience of certain foods). Many of the other influencing factors however, such as food availability, nutrition information, and knowledge, can be addressed and altered so that they are no longer barriers to healthy eating.

### **The Role of Schools.**

***Food consumption.*** One way to address the nationally increasing rates of overweight and obesity in children is through improving food consumption quality and quantity through changing food offerings. A 2009 Youth Risk Behavior Survey showed that only a minority of children are meeting select nutritional recommendations from the USDA (Centers for Disease Control and Prevention, 2009). For example, according to the survey only 20% of children are eating five or more servings of fruits and vegetables each day, while over 60% are exceeding the saturated fat intake guidelines (Centers for Disease Control and Prevention). Overall, only 2% of children aged 2-19 consume a diet consistent with the recommendations of the Food Guide Pyramid.

As the most common ground on which a large number of children eat daily, schools are a promising environment in which to affect change in food consumption. Schools are one of the primary settings in which school-age youth consume food, eating one to two meals a day in the school environment (Gleason & Sutor, 2001; USDA Food Nutrition Service, 2013). Consequently, what schools are serving has an impact on the level of healthful food consumption by youth. According to the School Health Policies and Practices Study (SHPPS) by the Centers of Disease Control and Prevention conducted in 2000, before legislation changed offering requirements, over 70% of schools had foods available for purchase that were high in fat, sodium, and added sugars. Further, approximately half of schools had entered into contracts with soda companies to

give the company exclusive rights to sell their product in the school. Over half of those contracted schools then received sales incentives from the soda companies, essentially paying the schools to allow them to provide students with non-nutritious beverages (Centers for Disease Control and Prevention SHPPS).

Through legislation, like the Federal Wellness Policy (Public Law 108-205), schools have been mandated since 2006 to begin adhering to several guidelines related to the foods they serve. The Federal Wellness Policy has required that “all foods available on each school campus under the jurisdiction of the local educational agency during the school day... are consistent with sections 9 and 17 of this Act, and sections 4 and 10 of the Child Nutrition Act of 1966 (42 U.S.C. 1773, 1779); and (B) promote student health and reduce childhood obesity” (Public Law 111-296). The guidelines that are referred to regarding the types of foods that can be served are represented in the US Department of Health and Human Services’ (USDHHS) Dietary Guidelines for Americans, which is published every five years. The document puts forth recommended caloric consumption for each age group as well as the recommended nutrient content of those calories. If youth consume a diet consistent with the USDHHS’ recommendations, then it is presumed that obesity, overweight, and their associated negative outcomes, would be abolished. As of the 2006 start date of the Federal Wellness Policy’s requirements, schools have been mandated to serve foods that meet the USDHHS’ standards. As such, all youth should be receiving healthy food choices within the school setting, thereby eliminating the barrier of availability to healthy eating behaviors. So far, research generally supports the positive impacts that altering food offerings has had, finding that students are eating healthier foods when they are in school and, further, are not

overcompensating by making poorer food choices at home than they did before school offerings changed (Schwartz, Novak & Fiore, 2009). Further, despite some public scrutiny citing a handful of schools that dropped out of the National School Lunch Program due to decreased consumption of school-provided meals and therefore decreased revenue that was insufficient to sustain food production, data shows that the number of meals provided has not significantly changed. For example, the number of school lunches consumed in the 2012-2013 school year only decreased 3% compared to the previous school year, with the majority of the change coming from fewer purchases made by students not receiving free and reduced lunch, while the number of breakfasts consumed increased 2.5% across those years, from 12.81 million breakfasts served to 13.15 million. Overall, changing food offerings in schools has been one successful method to increasing healthy eating behaviors by eliminating the barrier of access to healthy food.

***Nutrition education.*** Changing the food that is served in school addresses the barrier of availability of healthy foods to eating behaviors, but it does not change individual preferences (Coakley, 2001). Since school-age youth also consume food and make their own consumption choices in settings where unhealthy food is also present, creating knowledge and positive attitudes towards healthy eating is necessary to influence youth to make their own healthy eating choices, leading to improved health for the US population. By doing this, the barriers of lack of nutrition knowledge and negative attitudes towards healthy eating can be removed, and healthy eating behaviors can occur.

Even before federal legislation required it, nearly all public schools (99%) offered nutrition education at some point in a youth's career (National Center for Education Statistics, 1996). From Kindergarten through 8<sup>th</sup> grade, 50% of schools had district or

state requirements for students to receive some type of nutrition education. In these younger grades, children tend to have less control over what they eat. They are also less likely to select healthy foods on their own, due to innate preference for sweet foods, which often corresponds to cheap and non-nutritious sugary foods. Nutrition education can still impact young children, however, by beginning to mold attitudes towards food. Hence, nutrition education for this age group is important so that positive attitudes towards healthy foods can be formed by the time children are old enough to make food choices for themselves. Once in high school, youth tend to have more control over what they eat, and can begin to act on the nutrition attitudes they've formed. They can also better understand explanations for physiological, cognitive, and psychological effects of unhealthy consumption as they get older. Forty percent of schools require 9<sup>th</sup> and 10<sup>th</sup> graders to have some type of nutrition education and 20% of schools require nutrition education for 11<sup>th</sup> and 12<sup>th</sup> graders. Overall, nutrition education is more present in elementary and middle school, which is important because attitudes towards nutrition and eating are forming, but nutrition education is still needed for the high school years, when youth can understand more about consumption choices.

When nutrition education is present in school, most schools (70%) integrate it into the curriculum through information in textbooks or lessons in health and science classes (National Center for Education Statistics, 1996). In the majority of schools with nutrition education (61%), there is no nutrition education coordination, so each teacher is responsible for deciding whether or not to incorporate nutrition education, as well as how to do so. In terms of major topics covered, more than 90% of schools teach students the relationship between diet and health, finding and choosing healthy foods, nutrients and

their food sources, the Food Guide Pyramid, and dietary guidelines (National Center for Education Statistics). Most of these topics focus on increasing students' knowledge of good nutrition and not on impacting students' motivation, attitudes, or behaviors related to eating. In fact, less than 33% of schools impact students' motivation, attitudes, or behaviors through nutrition education (National Center for Education Statistics). One study that assessed this found that the amount of time devoted to nutrition education moderated the amount that motivation, attitudes, and behaviors were impacted (Contento, Manning, & Shannon, 1992). Contento and colleagues surveyed schools' implementation of nutrition education programs and found that most nutrition education included targeted instruction amounting to a total of 10 to 15 hours over the course of a 3 to 15 week period. In these cases, an effect on nutrition knowledge was positive, but the impact on attitudes and behavior was minimal. When nutrition education programs were longer-running and maintained a presence in the curriculum across grade levels, however, then concrete and measurable changes in eating behaviors, such as dietary intake, were found. Further, positive changes in health-related physiological markers, such as weight, were also found (Contento, Manning, & Shannon).

Additionally, eating behaviors can also be altered by using key reinforcement mechanisms in schools to encourage healthy eating behaviors. For example, youth can learn how to cook healthy items and still achieve a satisfactory taste, they can be exposed to adult and peer models that exhibit healthy eating behaviors instead of unhealthy ones, and they can see advertisements that support healthy eating while still being appealing to them. Partly based in social cognitive theory, several programs have been enacted in schools based on these modeling and reinforcement principles, and results are promising.

For example, when children watched videos for 16 days of heroic peer models enjoying fruits and vegetables, children's fruit and vegetable consumption increased significantly and was sustained four months later (Horne et al., 2004; Lowe et al., 2004). In another study, 26 schools in Minnesota provided social support around eating fruits and vegetables while 13 control schools received no such support (Perry et al., 2004). After two years, the students in the intervention schools had significantly higher intakes of fruits and vegetables than students in the control schools.

While there are many factors that influence eating behaviors in children, and many barriers to the consumption of healthy foods, research has consistently shown that it is possible to alter children's attitudes, knowledge, and preferences regarding nutrition. Further, schools are prime settings for nutrition education to take place because virtually all children attend school and food preferences are largely developed early in life. Hence, the school environment can have an impact on children's eating behaviors and shift preferences by implementing evidence-based nutrition education programming that addresses the multiple barriers and determinants of preferences to create a positive and lasting impact on the eating behaviors of youth.

### **Physical Activity**

The US Department of Health and Human Services recommends that school-age youth (6-17 year olds) should engage in at least 60 minutes of physical activity each day. Approximately 40% percent of students, however, do not participate in more than 20 minutes of vigorous physical activity on three or more days a week (Grunbaum et al., 2003). In terms of differences between ages, younger children tend to engage in more physical activity than adolescents (USHSDASH, 2008). This is due to younger children

spending more of their free time and school time engaged in physical activity as compared to adolescents (USHHSDASH). In one study, 77% of 9 to 13 year olds participated in some kind of physical activity during the previous seven days (USHHSMW, 2003). High schoolers, meanwhile, are less likely to be enrolled in physical education classes and less likely to spend free time engaged in physical activity (Centers for Disease Control and Prevention, 2009). Instead, their time spent engaged in sedentary activities, such as watching television or playing video games, has increased precipitously (Grunbaum et al.). For example, one study found that approximately 38% of high school students spent more than three hours each day watching television, taking time away from physical activity (Grunbaum et al.). In the end, however, both younger and older children are failing to engage in the daily recommended amount of physical activity (USHHSDASH). Further, despite their ages, Black, Hispanic, and female students are less likely than their white male counterparts to participate in recommended amounts of physical activity (Ogden, Carroll, Kit & Flegal, 2012).

Regular physical activity has numerous documented benefits for children and adolescents. It helps improve strength, build healthy bones, control weight, and improve blood pressure and cholesterol, thereby reducing the chances for serious disease and early mortality. Regular physical activity also addresses two of the primary cardiovascular risk factors: excess weight and physical inactivity (Center for Disease Control, 2011; Dietz, 2004; Freedman, Zuguo, Srinivasan, Berenson, & Dietz, 2007; Li, Ford, Zhao, & Mokdad, 2009). Engaging in regular physical activity also helps to reduce feelings of depression, anxiety, and stress, while improving general self-concept (Strong et al., 2005). Further, better academic performance has been associated with regular physical



activity. Students that engage in more physical activity tend to have higher grades, better standardized test scores, spend more time on task in the classroom, and have fewer behavioral issues than those students who engage in less physical activity, or less vigorous physical activity (Shephard, 2007; Trost, 1997).

**Factors Influencing Physical Activity Behaviors.** There are many factors influencing why children may or may not engage in recommended levels of physical activity. These factors include physical, demographic, social, psychological, and environmental reasons. Demographic factors are factors that an individual does not have control over; their group membership is determined at birth. Factors in this domain associated with increased levels of physical activity behaviors include being male, not having significant physical limitations, and being white (Kohl & Hobbs, 1998; Sallis, Prochaska & Taylor, 2000; Wilfley & Brownell, 1994). As babies grow into toddlers and toddlers grow into children, various social influences begin to impact them and shape their physical activity attitudes and behaviors. Social cognitive factors are psychological variables that are transmitted to people from society by learning and reinforcement history. Social factors that are negatively correlated with physical activity include having parents that do not model or encourage physical activity, having peers that do not model physical activity, and having a poor physical activity experience (Kohl & Hobbs). For example, if a child experiences embarrassment related to participation in physical activity or if peers and parents do not encourage or model physical activity, a child's attitudes towards physical activity begin to be molded towards non-participation and this stance is reinforced by the same individuals that helped mold this attitude (Dishman, Heath & Lee). As social factors influence attitudes, they also

impact psychological and emotional factors such as the value that is placed on physical activity, beliefs about the outcomes of physical activity, self-efficacy regarding being physically active, and enjoyment of physical activity (Godin & Shephard, 1990; McAuley & Blissmer, 2000; Motl et al., 2001; Steinhardt & Dishman, 1989). In other words, if physical activity is not engaged in and those around the child do not model or promote physical activity, the child begins to value physical activity less, wants to engage in it less, enjoys it less, and believes they are not good at physical activity nor will benefit from it. Over time these negative beliefs and attitudes become negative schema about exercise, which is associated with decreased engagement (Bauman, Sallis, Dzewaltowski & Owen, 2002). As a behavioral pattern of inactivity forms, the child may gain weight as they are inactive, leading to overweight and obesity, which are strongly associated with decreased levels of physical activity, further perpetuating the cycle of inactivity (Kohl & Hobbs). Likewise, previous physical activity history is also related to current physical activity levels, so a history of inactivity only serves to reinforce current inactivity (Sallis, Prochaska & Taylor, 2000). Finally, environmental factors are also associated with levels of physical activity behaviors and include access to facilities, cost, opportunities to exercise, and convenience (Kohl & Hobbs; Resnick et al.). In a study using telephone focus group for adolescents, the most common barriers to exercising that adolescents cited were convenience and price; Adolescents are more likely to exercise if they do not have to pay a gym membership and if they do not have to travel to engage in the activity (Resnick et al.).

**Barriers to Changing Physical Activity Behaviors.** Any of the factors influencing physical activity behaviors can become barriers when they decrease the

likelihood of engaging in physical activity. Not all of those barriers are changeable, however. For example, a child cannot alter their demographics, change the cost of the nearby gym, or move their home closer to the town park. Likewise, a school wanting to address physical activity engagement levels cannot alter parent activity, school location, or past physical activity engagement levels. What can be changed, however, are the attitudes, knowledge, and beliefs of individuals and the resultant behavior by addressing access to facilities, opportunities to exercise, convenience, and social influences.

**The Role of Schools.** Schools can play a large role in impacting physical activity behaviors of youth. For example, they can provide models of physical activity, instill knowledge regarding physical activity, and create opportunities for physical activity while building a culture whereby physical activity is socially promoted. Even when individuals outside of the school environment support physical inactivity and there may be no one in a child's life to create cognitive dissonance between current behavior and healthy behaviors, schools can bridge the gap and install programming that effectively removes barriers to physical activity.

Since the late 1800s when physical education was instituted in US schools, and the early 1900s when school sports programs were formed, schools have taken on the responsibility of providing physical activity opportunities for children. Currently, physical education is a mandated part of the school curriculum in most states and daily physical education is recommended by many national groups and associations, likely due to research suggesting that it has educational and developmental benefits (Burgeson, Wechsler, Brener, Young, & Spain, 2001; National Association for Sport and Physical Education, American Heart Association, 2006). At the state level, 43 states require

elementary schools to provide physical education (PE) (Burgeson, Wechsler, Brener, Young, & Spain, 2001). In addition to PE, approximately 71% of schools provide recess for elementary school students. At the middle school level, 41 states require middle schools to provide physical education (Burgeson, Wechsler, Brener, Young, & Spain). Finally, at the high school level, 44 states require high schools to provide physical education (Burgeson, Wechsler, Brener, Young, & Spain).

Although the majority of states (41) mandate physical education at each grade level, the actual time spent in physical activity is much lower than the state requirements would make it seem. Most states mandate PE, but most do not mandate the amount of time that students need to spend in PE. For example, only 16 states specify the number of minutes that physical education should be engaged in, and of those, only 3 states require enough physical education opportunities to meet the recommended amount of time per week that students should engage in physical activity (150 minutes in elementary, 225 in middle and high school) (Burgeson, Wechsler, Brener, Young, & Spain, 2001). In other words, schools can fulfill their state-mandated PE while providing insufficient physical activity opportunities by limiting the amount of PE offered. For example, the Centers for Disease Control 2000 School Health Policies and Programs Study (SHPPS) found that only 6.4% of middle schools provide daily physical education for the entire school year (Centers for Disease Control, 2001). Instead, 15.5% of schools offered PE every day for at least half the school year and 34.4% offered PE three days per week for at least half the school year. This part-time offering results in highly variable time spent in PE by students in different schools. One study found that the actual time spent in middle school PE over the course of a school year ranged from 54 hours to 156 hours across different

states (Moe et al., 2006). This difference may also result from different schools allocating different amounts of time to PE. In high school, for example, a national study found that of the less than 20% of high school students that attend daily PE, 20% of them spent less than 20 minutes being physically active (Burgeson, Wechsler, Brener, Young, & Spain). By implementing PE infrequently and for abbreviated periods of time, schools are technically fulfilling state requirements to offer physical education, but are not providing consistent and adequate physical engagement opportunities for students, leading to limited time actually engaged in physical activity.

Compounding the issue is that of the minimal PE opportunities that are offered, enrollment and attendance rates during those opportunities have declined. In fact, enrollment in PE in school has declined precipitously. Between 1991 and 2003, enrollment of high school students in daily PE classes decreased from 41.6% to 28.4% (Centers for Disease Control and Prevention, 2004). Relaxed enrollment requirements may contribute to these low numbers. For example, 33 states allow students to waive PE or substitute other activities for PE and 17% of elementary schools, 25.3% of middle schools, and 40% of high schools allow exemptions from PE (Centers for Disease Control and Prevention). In Delaware, for example, exemptions are allowed if a student is ill or injured or if PE participation violates religious beliefs (National Association of State Boards of Education, 2013). In Iowa, 9<sup>th</sup> through 12<sup>th</sup> graders can be exempt at a parent or guardian's request and 12<sup>th</sup> graders specifically can be exempt if an academic class is held at the same time as PE (National Association of State Boards of Education). Other exemption reasons include participation in school sports, marching band, or

vocational training, and attaining satisfactory physical fitness test performance (e.g., California, Michigan) (Burgeson, Wechsler, Brener, Young, & Spain, 2001).

Outside of PE, another opportunity to engage in physical activity that some schools provide is participation in after-school sports. Approximately 57.6% of high school students play on at least one sports team (Grunbaum et al., 2004). For students that are not interested in competitive athletics, however, there are not as many options or opportunities for physical activity outside of PE. For example, less than half of schools offer physical activity clubs or intramurals (Grunbaum et al.). Further, less transportation tends to be provided from club and intramural programs, which may impact the ability of some students to participate.

All youth, on average, are falling short of recommended physical activity goals. The decline of in-school time dedicated to physical activity, shortened PE periods, and lenient enrollment requirements have all played a part in contributing to the current rates of physical activity.

In addition to providing physical activity opportunities during the school day, schools can also impact physical activity behaviors by providing models of physical activity, socially promoting physical activity, and instilling knowledge regarding physical activity. Schools can do this through the implementation of evidence-based programming that has been shown to have significant positive effects on students' engagement in physical activity, as well as their overall health. For example, several studies have shown the positive impact that staff wellness programs have on staff health behaviors such as increased physical activity, which then serves as a model for students (Centers for Disease Control, 2005). Further, other studies have shown increased physical activity for

students when they receive instruction in physical education classes, in addition to opportunities to engage in physical activity through those classes (Ballard et al., 2005; Dale & Corbin, 2000). Finally, studies have also found significant positive impacts of programs that target the incorporation of physical activity in the classroom, making it more socially acceptable, convenient, and frequent (Stewart, Dennison, Kohl, & Doyle, 2004). For each of the areas of opportunities for physical activity, modeling of physical activity, social promotion of physical activity, and increasing knowledge of physical activity and its effects, research has shown that successful programs targeting these areas do exist and, when implemented, lead to greater engagement in physical activity, better physical health, and better academic achievement.

### **Federal Policy Impacting Implementation of Wellness Programming in Schools**

**Federal Wellness Policy.** Over the past 70 years in the United States there have been efforts made through policy, national goals, and guidelines to address the declining eating and physical activity behaviors of youth. One of the first main policies to address these issues on a national scale came with the passing of the National School Lunch Act in 1946, a federal law creating the National School Lunch Program which provides low-cost or free school lunches to qualifying students (Public Law 396). Following the success of the School Lunch Program, the Special Milk Program was introduced a decade later, followed by the passing of the landmark Child Nutrition Act in October 1966 by Lyndon Johnson (Public Law 89-642). The School Breakfast Program and Special Milk Program were officially established and required nationally with the passing of the law. Today, the National School Breakfast Program feeds 10 million children each day and the

National School Lunch Program feeds more than 30 million children each day (National School Lunch Program, 2011).

In 2004, Congress reauthorized the Child Nutrition and Women Infants Children (WIC) Act, originally the Child Nutrition Act, and for the first time also added legislation beyond the historical federal mandates involving nutrition (Public Law 108-205). The reauthorized Act established a new mandate whereby all districts participating in the National School Lunch Program were required to create local school wellness policies that address nutrition as well as physical activity (Appendix A). The law has since become known as the Federal Wellness Policy. In 2010 Congress passed the Healthy, Hunger-Free Kids Act (Public Law 111-296) which has been the most recent iteration of the Federal Wellness Policy (Appendix B). Currently, the Federal Wellness Policy requires that all schools participating in the National School Lunch Program create a local school wellness policy which includes 1) “goals for nutrition promotion and education, physical activity, and other activities that promote student wellness,” 2) nutrition guidelines for all foods available during the school day, 3) specifications that all foods served during the school day meet regulations and guidelines set forth by the Secretary of Agriculture, 4) specifying how involvement will be sought and incorporated from parents, students, school administrators, staff, food service providers, and the public in development of the policy, 5) a plan for measuring the impact (effectiveness) and implementation of the policy, and for publicly reporting on progress (Public Law 111-296). Further, the Act requires that a school designate one or more school personnel to ensure compliance with the policy and that the goals that each district



creates are written and made public each school year. Schools were required to have created wellness policies by the start of the 2006-2007 school year.

While there are currently many policies, initiatives, and movements towards improving the nutrition and physical activity engagement of youth, the Federal Wellness Policy is currently the main policy mandating the adherence of schools through legislation. The current study primarily focuses on the first requirement of the Policy by discussing and investigating schools' methods for fulfilling nutrition and physical activity education requirements, as well as administrators' perceived barriers to utilizing evidence-based programming to fulfill the requirements.

**Schools' Use of Evidence-Based Programs and Strategies to Address the Federal Wellness Policy.** Evidence-based programs, strategies, and interventions are those that consistently demonstrate significant positive outcomes in a controlled setting and with a specified population through rigorous peer-reviewed research and are endorsed by a federal agency or organization. (Kratochwill & Shernoff, 2004; Nelson & Epstein, 2002; Spencer, Detrich, & Slocum, 2012). Evidence-based practices are also identified through research that is replicated, uses random assignment, controls for extraneous variables, shows evidence of sustainability, incorporates a control group, and uses multiple outcome measures (Evidence-Based Intervention Work Group, 2005). Evidence-based practice originated with the medical field and now has moved into the realms of psychology and education (Gutkin, 2002).

Evidence-based practice is similar to evidence-based interventions and evidence-based programming. Evidence-based programs are simply evidence-based practices that have been grouped together and used to produce a common goal, have a specified

purpose, specific program activities, and outcome measures (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Evidence-based programs in school psychology constitute those practices that have been identified as evidence-based through the methods discussed above, and have school-related outcomes and can be implemented in the school setting. For example, evidence-based programs in the school setting may have a specific learning outcome, social-emotional outcome, or behavioral outcome. These programs can occur with multiple segments of the school population and at multiple levels of the school system (e.g., individual, classroom, grade, administrators).

In schools, the “use of evidence-based interventions has become a hallmark of high-quality professional practice” (Forman, Olin, Hoagwood, Crowe, & Saka, 2008, p. 26). Utilizing evidence-based interventions in schools is mandated through IDEA (2004) and No Child Left Behind (2002) and is incorporated into the National Association of School Psychologists (NASP, 2010) practice guidelines and the NASP and APA (2002) code of ethics for psychologists. There are also national recommendations in place that suggest all students receive nutrition education and physical education (Marx & Northrup, 1995). Consequently, when implementing programs to address the Federal Wellness Policy’s physical activity and nutrition education provisions, schools should be employing evidence-based programs and strategies to adhere to law as well as best practice guidelines.

In addition to adhering to law and best practice guidelines, there are many other benefits to implementing evidence-based programming in schools. The first key benefit is that evidence-based programs have been shown to lead to specific outcomes with a specific population. In schools, the goal is to improve outcomes for students and

evidence-based practices indicate what methods can be employed to reach those desired outcomes. For example, many schools are currently using a Response to Intervention (RTI) framework. Response to Intervention is a multilevel, data-driven, systematic prevention and intervention framework that is used in schools for identifying and addressing issues that impact individual student achievement (Brown-Chidsey & Steege, 2005). Response to Intervention is intended to lead to positive school outcomes for students. Students are identified and receive prevention and intervention programming through a 3-tier system. Tier 1 interventions target up to 100% of the students in a school and are aimed at school-wide programming such as positive behavior, general curriculum components, and preventative programming. Tier 2 interventions are aimed to students who do not meet established benchmark achievement standards at Tier 1 and who need additional services beyond those provided to all students. Tier 3 interventions are the most individualized and targeted interventions delivered on the 3-tier system. They are aimed at students whose need is not met at Tier 1 or Tier 2 and require more intense intervention components. For example, this can mean one-on-one instruction for a student struggling in small group instruction, it can mean individual counseling for a student exhibiting severe emotional impairment, or it can mean intensive behavioral programming for a student who exhibits maladaptive behavior. A benefit of using evidence-based practices in relation to the RTI framework, is that an evidence-based practice could lead to decreased Tier 2 and Tier 3 classification rates because more effective prevention and identification would occur on the Tier 1 level (Glover & DiPerna, 2007; IDEIA, 2004; Justice, 2006). In fact, multiple associations advise that an appropriate target population for program implementation should be chosen based on the

area of greatest need (The Health Communication Unit, 2001). Due to the high rates of overweight and obesity throughout the school-age years, schools can use a primary prevention and intervention model whereby all students receive nutrition education and physical activity programming, which are primary prevention strategies. By doing this, schools could potentially decrease the number of students who are chronically overweight and physically inactive.

Another benefit to employing evidence-based programming, whether within the RTI framework or not, is that using EBPs can be cost-effective and also time efficient. For example, their use can decrease the time it would take a school decision-maker to review and assess the literature or create their own program. Evidence-based programs can also be cost-effective in several ways. For example, if a program is evidence-based, then it may save money to implement that program and achieve desired outcomes rather than spend time, money, and additional resources implementing non-evidence-based programs and continue to fail to see desired results. Also, some EBP's are implemented with groups, which is also more cost-effective than working individually with students, although individual-level interventions are warranted at times. Another benefit to implementing EBPs is that the school itself and relevant stakeholders may be more likely to support a program if it is evidence-based. Also, there are currently federal funds available to encourage EBP usage as well as task forces and resources for locating EBPs (Domitrovich et al., 2008).

Overall, because schools aim to improve achievement for all students, and every school child can potentially increase achievement from improved wellness (Shephard, 2007; Trost, 1997) utilizing evidence-based interventions is essential. Physical activity

and nutrition have consistently been shown to be significantly related to student achievement, even being implicated as explanatory variables in the achievement gap (Fedewa & Hoffman, 2013). Hence, evidence-based programming to address wellness issues is crucial, necessary, and by using them, schools are committing to serving all students (Department of Education, 2006).

Although best practices guidelines and even federal mandates endorse the importance of employing evidence-based programs and practices, and even though there are a plethora of such programs available, schools may not always use evidence-based programs in their efforts to address student wellness. No known study exists that examines the percentage of schools employing evidence-based wellness programming, nor specific barriers to implementing such programming. What is known is that many schools do not even adhere to the basic Federal Wellness Policy guidelines, let alone implement evidence-based programs.

Since its 2004 inception, the Federal Wellness Policy's implementation adherence has not been universal. In terms of putting all of the components required by the Federal Wellness Policy in place, one survey that included 847 schools found that 72% of wellness components were reported as being in place (Longley & Sneed, 2009). This stood in contrast to the 37% of Policy components that were reportedly already in place in these schools before they were mandated by law. In the same study, food provision components were reported as being the most frequently implemented, with broad reported adherence to using nutrition guidelines for all served food, vending food, and beverages, as well as food served at school fundraisers or parties. Another national study that examined 256 local wellness policies found that 68% were consistent with mandates

set forth in the law, while 32% did not address one or more main goal areas (Moag-Stahlberg, Howley, & Luscri, 2008).

Studies examining adherence in specific states have also found similar adherence rates. One study that examined wellness policies for the state of Alabama found that 71% of school systems were in full compliance with all federal wellness policy requirements (Gaines, Lonis-Shumate, & Gropper, 2011). Physical activity was the most frequently addressed component, while identifying a person in charge of the policy was the least reported requirement (Gaines, Lonis-Shumate, & Gropper). A similar study conducted in Pennsylvania found 85% adherence to all required dimensions of the Policy (Probart, McDonnell, Weirich, Schilling, & Fekete, 2008).

Adherence to specific elements of the Policy related to nutrition education and physical activity has also been examined (Chriqui, Schneider, Chaloupka, Ide, & Pugach, 2009). In terms of nutrition education, districts varied greatly in their determination of a specific nutrition education curriculum, from planning the nutrition education curriculum to not mentioning nutrition education in their district policy. Moreover, in terms of how to integrate and deliver nutrition education in the school, the majority of district policies did not address nutrition education being incorporated into classrooms. In other words, districts were not specific about who would provide the nutrition education, to whom, and when. In terms of physical activity and education, the majority of district policies specified how much time youth should be engaging in physical activity each week, but they did not indicate that this should come from physical education during the school day, but rather, they suggested physical activity outside of physical education. By doing this, schools actually recommended less time spent in physical education than is

recommended by the National Association for Sport and Physical Education (i.e., 150 minutes of physical education per week at the elementary level and 225 minutes per week at the middle and high school levels). The school policies also did not meet evidence-based recommendations for amount of time that youth should be engaged in moderate to vigorous physical activity. In sum, most districts recommended physical activity, but structured their recommendation and the school day in such a way that the physical activity would need to occur outside of school. For example, the majority of districts do not require any type of physical activity breaks during the school day and only 18% of elementary school students' district had a policy requiring daily recess. The Policy states that physical activity goals need to be "school-based," however, by using vague language, districts may circumvent the requirements (Public Law 111-296).

While some data regarding adherence to the Federal Wellness Policy seems promising, it is clear that creating a school wellness policy in no way guarantees high quality or effective policies, or even, implementation as specified. For example, although 75% of schools on average report that they adhere to all wellness components, which would include parent involvement and notification regarding the policy, a survey of parents showed that nearly 85% were unaware of what the Federal Wellness Policy is, or that their child's school is required to adhere to certain nutrition and physical activity guidelines (Action for Healthy Kids, 2005).

**Factors Influencing Implementation Decisions and the Research-to-Practice Gap in Schools.** There are many reasons why local wellness policies may not maximize the potential for evidence-based wellness programming and therefore fall short of what policymakers had envisioned. To start, the Federal Wellness Policy provides a framework

that schools are mandated to uphold, but no specific programming to achieve improved wellness is stated, and consequences for noncompliance are not mentioned. Within the required framework, nutrition education and physical activity goal-setting is required. The Policy does not, however, provide set minimum standards for the content of those goals or minimum methods that schools must use to achieve them. In other words, given the way the Policy is written, it is possible to create an acceptable policy, but lack adherence to it, not utilize evidence-based programming, or even produce overall benefit to students. Goals can be vague, below national recommendations, and therefore not actually result in improving students' health and achievement.

Other potential reasons why few districts voluntarily implement evidence-based nutrition education and physical activity programs that meet national standards have also been investigated. Reported barriers include lack of knowledge and limited resources. In Colorado, for example, when asked why wellness policies may not be implemented as intended, schools cited competing pressures, lack of resources, and lack of knowledge about the Federal Wellness Policy (Belansky et al., 2009). Similarly, schools in a national study reported that barriers to wellness policy development and implementation include competition for time, lack of monetary resources, and lack of understanding by administrators (Budd, Schwarz, Yount, & Haire-Joshu, 2009). Due to the broad changes the Policy brings, decision-makers may lack appropriate knowledge of the Policy itself, as well as how to effectively address it (Rogers, 2003). Moreover, if their resources are limited, decision-makers may have little time to devote to researching potential programs or strategies to implement. Consequently, school decision-makers may have trouble finding the most beneficial and cost-effective methods to adhering to the Policy and may



turn to heavily marketed programs, even if they are not evidence-based (Hallfors & Godette, 2002). Sadly, the same schools that lack resources may be the same schools that house students whose achievement is negatively affected by poor nutrition and little physical activity, and the absence of effective programming will only serve to widen their achievement gap.

The situation whereby schools do not utilize evidence-based interventions, despite their existence and the scientific support for their effectiveness, highlights the research to practice gap. The implementation of evidence-based interventions becomes the missing link when they are not utilized. The research to practice gap exists for many reasons. First, the outcomes that evidence-based programs target are not always relevant to school outcomes (Ringeisen, Henderson, & Hoagwood, 2003). For example, the outcomes may not be educationally-based or they may be educationally based but not incorporate outcomes that are desirable to administrators and school boards such as decreasing classification rates or improving retention (Ringeisen, Henderson, & Hoagwood). An evidence-based program may be less likely to get implemented in a school setting if the outcomes do not appeal to the stakeholders wielding power and influence.

Another challenge in translating research to practice and implementing evidence-based practices and programming is ascertaining whether a given evidence-based program generalizes and is appropriate to the applied setting (Ingraham & Oka, 2006). For example, cultural relevance, internal versus external validity, efficacy versus effectiveness, generalizability, and transportability all become relevant issues when a professional aims to take an evidence-based program developed in a controlled setting

with a specified population and put it in a different non-controlled setting, with a more diverse population.

Finally, general factors relevant to implementation are also relevant to implementation of evidence based programs (Evidence-Based Intervention Work Group, 2005). For example, using evidence-based practices or programming often becomes an adoption decision. Buy-in and support are needed and may be need to be addressed by understanding the perceived characteristics of the changes, by the schools (Rogers, 2003). Rogers outlined five primary characteristics impacting the decision to implement a program, including the perceived relative advantage the program would bring, the perceived compatibility of the program to the values, experiences, and needs of the adopters, the complexity of the program, the trialability of a program, and the observability of the outcomes of a program. Other highly important variables include familiarity, training, and attitudes (Forman, Fagley, Steiner, & Schneider, 2009). For example, a school psychologist's attitudes, beliefs, values, and views on mechanisms of change and evidence-based programs themselves impacts evidence-based program implementation in the school setting (Forman, Fagley, Steiner, & Schneider). Also, if a school psychologist is not explicitly trained in evidence-based programs or implementation practices, their likelihood of utilizing evidence-based programs is decreased (Forman, Fagley, Steiner, & Schneider). In fact, the most important predictor of diffusion success is training.

While there are many evidence-based nutrition education and physical activity programs in existence, schools do not always utilize such programs. To date, there has been some research on barriers to implementation of Federal Wellness Policy

components, but overall there is a lack of dissemination research that seeks to understand barriers to implementing evidence-based wellness programming and stakeholders' suggestions for improving accessibility. Until the research to practice gap is understood and narrowed, lack of evidence-based program implementation and lack of research in this area will limit the positive impact that these programs can have on student health and achievement (Owen, Glanz, Sallis, & Kelder, 2006).

### **Summary of the Literature**

Currently, the health of the nation's youth is declining, as obesity and disease rates have increased steadily over the past 20 years (Ogden, Carroll, Kit, & Flegal, 2012). For youth, schools are the most commonly shared environment throughout their childhood and adolescence. Because schools are invested in the health and achievement of youth, they have been mandated through the Federal Wellness Policy to set nutrition education and physical activity goals in order to impact student wellness and achievement. All schools, however, are not maximizing the potential for increasing student wellness. There are many evidence-based strategies, programs, and methods to achieving Federal Wellness Policy compliance and improved student health behaviors, but they must be implemented first in order to be effective.

The current study aimed to address the policy to practice gap in school wellness by investigating whether schools use evidence-based nutrition and physical education programs and strategies to address the Federal Wellness Policy, and if they were not, to understand and clarify the barriers to such implementation. Further, the study sought to extend understanding of what can make access of and implementation of these programs more likely and what elements could be contained in a usable resource guide for school

decision-makers so that it is maximally accessible and helpful in implementing evidence-based wellness programming.

## **Chapter III**

### **Method**

#### **Participants**

Participants were school administrators and teachers who were all employed in public schools for students from Pre-Kindergarten through 12<sup>th</sup> grade. Administrators and teachers were sought due to their role as decision-makers in schools and gatekeepers of implementation decisions.

Potential participants were selected through fulfillment of the aforementioned role criteria and through professional networks of the principal investigator. Participants were recruited through an initial phone or email communication by the principal investigator that stated the general purpose of the study, requested their participation, and asked for their availability for a telephone interview (Appendix C). Participants who assented to potential participation over the phone were asked if they would like to proceed with potential participation at that time over the phone, or if there was a more convenient time that could be arranged. When the potential participant wanted to continue with participation at that time, an oral informed consent script was read to him/her (Appendix D). If they were interested in potentially participating but selected a more convenient time in the future, then the principal investigator called him/her at that designated future time, at which point the oral informed consent script was read to the potential participant. If a potential participant consented, interview questions were then administered.

A total of 35 potential participants were contacted. Twenty-two individuals, or 63% of those contacted, responded to the principal investigator and expressed interest in participation. Seven of the 22 individuals that expressed initial interest did not respond to

follow-up communication from the principal investigator regarding arranging a time for participation. As a result, interviews were conducted with 15 participants, or 43% of the total number of individuals contacted.

## **Measures**

Before the study began, each potential participant was contacted through a recruitment phone call or email (Appendix C) and read an oral informed consent script (Appendix D). If a participant orally consented to participation, they were asked 22 interview questions about their attitudes, experiences, and knowledge of the Federal Wellness Policy and evidence-based programs, as well as perceived barriers and solutions to implementation of evidence-based nutrition education and physical activity programs and strategies (Appendix E). The majority of interview questions were developed by the author due to the absence of a published survey or interview questions on the current topic, however, two questions were gathered from Forman, Olin, Hoagwood, Crowe, and Saka (2008) and some questions were influenced by Longley and Sneed (2009). Ten questions were open-ended questions written in order to elicit a breadth and depth of responses that could not be achieved through close-ended questions. The remaining 12 questions were close-ended questions. For 10 of those 12 questions, there was an open-ended follow-up question if a participant responded, “yes,” to the initial question.

The first question contained in the interview was a demographic question asking the participant’s job title in the school, how long they have worked in education, and their highest degree obtained. The author selected these questions in order to obtain a context for the respondent’s answers.

The next two questions secured information about the participant's awareness of the Federal Wellness Policy and evidence-based programs. The author selected these questions in order to determine the participant's familiarity with these terms, and because further interview questions assumed basic preliminary knowledge about these concepts.

The next four questions asked the participants about their school's implementation of evidence-based programming in general, and specifically regarding nutrition education and physical activity, and also whether the school collects variables on such behaviors. These questions were important because they provided data about whether the Federal Wellness Policy is being addressed in schools, as well as how it is addressed and the quality with which it is addressed, which is a major theme in the current study. There is little research regarding the programs and strategies that school use to fulfill the Federal Wellness Policy, so obtaining such information was important.

The next question asked participants to state who the decision-maker has been regarding their school's adherence to the Federal Wellness Policy, and also whether this person has been involved in implementation decisions. This question was vital because its answer provides a potential target audience for the resource guide and also reveals whether the person in charge of deciding how the policy will be fulfilled has any power to ensure it is fulfilled through certain programming. In other words, this question addresses the organization encompassing a district's wellness planning.

The next five questions assessed the participant's self-reported knowledge, training, attitudes, and feelings in regards to evidence-based programs and their implementation. These questions were important because each of these variables is

known to be correlated with implementation practices. Furthermore, the answers helped determine what factors should be addressed in a resource guide.

The next two questions asked participants about the utilization of resource sources in regards to wellness programming. These questions were selected because they provide useful information as to the wellness information source school decision-makers are most likely to solicit to retrieve wellness information, and therefore, where information presented in a resource guide should be located in order to be most accessible.

The next three questions involved asking participants about obstacles, success factors, and barriers to implementing evidence-based programs in schools. Two of these questions are directly from work by Forman, Olin, Hoagwood, Crowe, and Saka (2008). These questions were selected to understand why evidence-based programming is not implemented more often in schools. If it can be understood why evidence-based programming is not utilized in schools, then those reasons can be addressed.

Finally, the last three questions asked participants whether a resource guide would be helpful to them, if they would use it, and what it should ideally contain to improve ease of implementation. These questions were at the heart of the current study and provide information that can be directly utilized in the formation of a resource guide.

## **Procedure**

After approval for the current study was obtained through the IRB at Rutgers, the State University of New Jersey, the author began participant recruitment through initial phone and email contact that first stated the general purpose of the study (Appendix C). It was described that the principal investigator was conducting a study about the Federal Wellness Policy, schools' use of evidence-based programming to address the Federal



Wellness Policy, and potential barriers and solutions to wellness programming. The potential participant was then asked if they were interested in participating and completing a phone interview as part of participation. Participants who assented to potential participation were asked if they would like to proceed with potential participation at that time, or if there was a more convenient time that could be arranged. If the potential participant chose to continue at that time, an oral informed consent script was read to them (Appendix D). If they were interested in potentially participating but selected a more convenient time in the future, then the principal investigator called at that designated future time, at which point the oral informed consent script was read to the potential participant. If a potential participant orally consented to participate, then the author administered a structured phone interview containing 22 questions and lasting an average of 26.5 minutes ( $M = 26.5$ ,  $SD = 16.3$ ). It should be noted that 12 of the 15 interviews lasted 30 minutes or less. The remaining three interviews lasted for 40 minutes, 45 minutes, and 71 minutes. For all participants, questions were asked in the order that they appear on the question list (Appendix E) and the author did not deviate from those questions. At the end of the interview, the participant was thanked for their time and participation, asked if they had any questions, and asked if they would like to receive a copy of the study upon completion.

### **Data Analysis**

Participant responses to interview questions were collected and then subsequently analyzed using techniques specific to the type of question asked. Twelve of the questions contained in the interview were close-ended questions that were posed to elicit a “yes” or

“no” response from participants. Responses to close-ended questions were grouped by response and a frequency count was employed.

For the remaining open-ended questions, participant responses were coded for content, categorized, and a frequency count by category was conducted, when responses lent themselves to this type of analysis. The first question in the interview was a demographic question. Participant responses to this question were recorded verbatim, categorized by response, and then a frequency count was employed. A participants’ description of their job title was categorized according to position in the school (e.g., Principal, Superintendent) and their highest degree obtained was categorized by response (e.g., Master’s, Doctorate). A participant’s response to their years in the education field was a quantitative variable. Additionally, question nine was categorized much like the demographic component of question one, whereby the job title was categorized according to common positions in education.

The next open-ended question was the follow-up to question two, if a participant reported that they have heard of the Federal Wellness Policy. Responses to, “How have you learned about the Federal Wellness Policy?” were categorized by response (e.g., colleague, professional program, news source, newsletter) and a frequency count was employed.

Questions four through six asked participants if their school has implemented evidence-based programs or evidence-based nutrition education and physical activity programs, and if so, what those programs are. Responses to these items were the names of programs and are reported as they are stated in the interviews.

The next open-ended questions, questions seven and eight, both asked participants about the specific nutrition and physical activity variables for which data is being collected in their school. Responses to both questions were recorded in such a way so that the total number of unique nutrition and physical activity variables could be reported, as well as the total number of participants reporting a specific variable.

The next open-ended question assessed participants' self-reported knowledge regarding evidence-based programming. Responses were categorized (not at all knowledgeable, a little, somewhat, mostly, very knowledgeable) and a frequency count was employed by category.

The next open-ended questions (11 and 12) were follow-up questions that were administered if a participant indicated they have received training on evidence-based programs or their implementation. Responses to when training was received was grouped by time span (in the past year, 1-3 years ago, 4-6 years ago, 7-10 years ago, greater than 10 years ago) and a frequency count was employed. Responses to what training was received is reported verbatim.

Open-ended responses to questions 13 and 14 were categorized into positive or negative attitudes/feelings and a frequency total for each is reported, as well as reporting responses verbatim, as valuable information was contained in the specific adjectives reported. Any additional information that participants provided in regards to "why" they experience the feelings they reported was recorded verbatim and reported as stated, without categorization. No pre-established categories were created due to the lack of corresponding categories in the literature. Further, categorization was not necessary since

participant responses were unique, and hence, artificial categorization would have eliminated valuable qualitative data.

Questions 15 and 16 both assessed the sources that participants use to access wellness information. Responses were categorized by type of source (e.g., federal website, state website, district website, communications with other schools). A frequency count of each type was calculated.

Questions 17, 18, and 19 all addressed factors affecting implementation. Responses to question 17 were categorized by type of obstacle mentioned (e.g., time constraints, belief in outcomes) and a frequency count is reported for each category. Responses to question 18 were categorized by success characteristics (e.g., time availability, administrative support) and a frequency count is reported for each category. For question 19, which also assessed factors influencing implementation, responses were categorized by type of barrier (e.g., belief in effectiveness, time constraints, financial constraints) and a frequency count is reported for each category.

Finally, for questions 21 and 22, responses were categorized and considered to be members of the same category if the same component was mentioned verbatim or if a synonym was used. No pre-established categories were created due to the lack of corresponding categories in the literature.

## Chapter IV

### Results

The current study investigated school personnel's implementation of evidence-based nutrition education and physical activity programs and strategies and districts' organization surrounding wellness issues. Further, this study sought to identify and clarify the barriers to evidence-based nutrition education and physical activity program implementation, the resources which would make access to and implementation of these programs more likely, and the elements that could be contained in a usable resource guide for school decision-makers so that the guide and its information is maximally accessible and helpful in implementing evidence-based wellness programming.

To investigate these areas of inquiry, a 22-question phone interview was conducted with 15 participants. Participants were four females and 11 males, all working as administrators or as teachers in public schools. More specifically, participants included Principals ( $n = 8$ ), Assistant Principals ( $n = 3$ ), a Superintendent ( $n = 1$ ), an Assistant Superintendent/Curriculum Coordinator ( $n = 1$ ), a Director of Student Services ( $n = 1$ ), and a teacher ( $n = 1$ ). Years spent working in education ranged from 9 to 35 years ( $M = 20.3$ ,  $SD = 7.5$ ). Further, the highest degree that participants obtained ranged from a Master's degree ( $n = 14$ ) to a Doctoral degree ( $n = 1$ ). School demographics for the participants' places of employment included schools from the northeast United States ( $n = 11$ ), western United States ( $n = 1$ ), central United States ( $n = 1$ ), and midwestern United States ( $n = 1$ ). More specifically, participants were employed at districts in 5 different states, including Pennsylvania ( $n = 10$ ), Washington ( $n = 1$ ), Ohio ( $n = 2$ ), Vermont ( $n = 1$ ), and Colorado ( $n = 1$ ). The size and socioeconomics of the school districts in which the

participants were employed was also examined. Participants represented school districts that ranged in size from 57 students per grade to 1000 students per grade and had varying socioeconomic statuses, ranging from 1% of students on free and reduced cost lunch to over 50% of students on free and reduced cost lunch. All participant demographics can be seen in Table 1.

Table 1

*Descriptive Statistics for Participant and District Demographics*

<i>Demographics</i>	<i>Frequency</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
<b>Position in School</b>				
Principal	8			
Assistant Principal	3			
Superintendent	1			
Assistant Superintendent	1			
Director of Student Services	1			
Teacher	1			
<b>Highest Degree Obtained</b>				
Master's	14			
Doctorate	1			
Years in Education		20.3	7.5	9-35
District Size (# students per grade)		489.6	263.6	57-1,000
District Socioeconomic Level (% students receiving free or reduced lunch)		20.7	13.4	1-53

*Note.* *M* = mean; *SD* = standard deviation.

The remaining question responses are reported as frequency counts, with select verbatim responses included. Twelve of the questions contained in the interview were close-ended questions that were posed to elicit a “yes” or “no” response from

participants. Responses to close-ended questions were grouped by response and a frequency count was employed. For the remaining open-ended questions, participant responses were first coded for content, then categorized, and a frequency count by category was conducted, when responses lent themselves to this type of analysis. Due to the small sample size, the qualitative nature of the data collected, and the diversity of participants, responses to interview questions are not statistically compared between participants.

### **Awareness of Federal Wellness Policy and Evidence-Based Programs**

Regarding awareness of the Federal Wellness Policy and evidence-based programs, 100% of participants reported being aware of the Federal Wellness Policy and 100% also reported having heard the term “evidence-based programs.” As a follow-up question, participants were asked how they have learned about the Federal Wellness Policy (FWP) and these responses were categorized. The majority of participants reported hearing of the FWP through a colleague, news source, professional publication, state Department of Education, or their school (See Table 2). Those participants who reported hearing about the FWP from a colleague identified that colleague as the cafeteria manager or cafeteria director ( $n = 3$ ) and the school nurse ( $n = 1$ ). It should be noted that 16 sources were identified, as one participant reported hearing about the FWP from two sources.

Table 2

*Awareness of FWP and Evidence-Based Programs*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Participants aware of FWP	15	100
Source of FWP awareness		
Colleague	3	18.75
News source	2	12.5
Professional publication	2	12.5
School	4	25
State Department of Ed.	2	12.5
Professional meeting	1	6.25
Federal government	1	6.25
Unsure of source	1	6.25
Participants aware of evidence-based programs	15	100

### **Schools' Use of Evidence-Based Programs and Strategies to Address the Federal Wellness Policy**

The next five questions asked the participants about their school's implementation of evidence-based programming in general, regarding nutrition education and physical activity specifically, as well as whether the school collects variables on such behaviors. These questions provided data about whether the Federal Wellness Policy is being addressed in schools, how it is addressed, and the quality with which it is addressed.

Regarding the implementation of evidence-based programs, a majority of participants reported that their school implements some kind of evidence-based programming ( $n = 10$ ). It should be noted that two participants, who stated, "No," when asked if their school was implementing evidence-based programs, later went on to name



an evidence-based program being implemented in their school. Despite their verbal responses indicating no evidence-based programming was in place when asked directly, for the purposes of accurate categorization, these participants are included in the frequency count signifying the implementation of an evidence-based program. For the 10 participant responses categorized as reflecting current implementation of an evidence-based program, the specific programs being implemented included DIBELS ( $n = 2$ ), Incremental Rehearsal ( $n = 1$ ), Quick Reads ( $n = 1$ ), Check-in and Check-out ( $n = 1$ ), Read 180 ( $n = 2$ ), System 44 ( $n = 1$ ), Corrective Reading ( $n = 1$ ), Wilson Just Words ( $n = 1$ ), Project Lead the Way ( $n = 1$ ), Investigations ( $n = 1$ ), Walkthroughs ( $n = 1$ ), School-wide Positive Behavior Support Program ( $n = 1$ ), OLWEUS ( $n = 1$ ), STAR ( $n = 1$ ), Aimsweb ( $n = 1$ ), Leader in Me ( $n = 1$ ), Girls on the Run ( $n = 2$ ), and an unnamed Highmark Blue Shield program ( $n = 1$ ).

In regards to whether a participant's school was currently implementing or had recently implemented evidence-based nutrition education programs, 13 participants, or 86.7%, responded that their district does not implement evidence-based nutrition education programs. Two of those 13 participants did not definitively indicate whether or not evidence-based nutrition education was being conducted. For example, one participant stated, "Well, we're writing nutrition into all our curriculum, K through 12. We've applied for a couple farm-to-school grants so they're learning about farms and vitamins and vegetables." Because these two participants did not describe a program or a set of activities that could be categorized as evidence-based, these responses were categorized as indicating a lack of evidence-based nutrition education programming. For the two participant responses reflecting implementation of an evidence-based nutrition

education program, specific programs being implemented included a Highmark Blue Shield program consisting of multiple evidence-based workshops delivered to elementary-level students ( $n = 1$ ) and Leader in Me ( $n = 1$ ). Leader in Me is a program based on *The 7 Habits of Highly Effective People* and includes a module entitled “Sharpen the Saw” that addresses healthy eating, exercise, and other areas of wellness, such as sleep.

Finally, in terms of the implementation of evidence-based physical activity programs, two participants, or 13.3%, reported that their schools are implementing or have implemented such programming, and one of these participants reported two current programs at their school. Conversely, 86.7% of participants reported that their schools do not implement evidence-based physical activity programs. The implemented programs included Girls on the Run ( $n = 2$ ) and Leader in Me ( $n = 1$ ). Girls on the Run is a physical activity program for girls in 3<sup>rd</sup> through 8<sup>th</sup> grades that aims to develop a lifetime appreciation of health and fitness through interactive lessons and running games.

Overall, most participants’ schools are currently implementing evidence-based programs ( $n = 10$ ) focused on core academic subjects, whereas most participants’ schools are not currently implementing evidence-based nutrition education or physical activity programming.

Table 3

*Implementation of Evidence-Based Programs*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Participants whose schools are implementing E-B programs	10	66.7
Participants whose schools are implementing E-B nutrition ed. programs	2	13.3
Participants whose schools are implementing E-B physical activity programs	2	13.3

**Schools' Collection of Eating and Physical Activity Data**

Another area investigated was whether or not data has been collected for any nutrition or physical activity variables (See Table 4). According to participant responses, three schools, or 20% are collecting nutrition or eating data. For all three participants, this data includes a computer tracking system of what students are consuming in the cafeteria during breakfast and lunch, breaking this consumption down into an analysis of nutrient and food groups, and making this data available to students. An additional three schools noted that students' food choices at lunch are electronically recorded through a card system, but noted that this data is not collected for the purposes of being accessed by any school personnel, nor is this information provided to students or their families. As one participant stated, "The school is not collecting anything themselves...[students] swipe in with food, but that data is not accessed, we haven't pulled from that data at all." As such, these responses were not recorded as purposeful collection of data. In terms of physical activity data, six schools, or 40%, noted that they are collecting such data for students. All six of these schools are collecting data that includes resting and active pulse/heart

rate, and this data is tracked for students over time. It should also be noted that in all six of these cases, the students' data is recorded during physical education classes, and hence, the collection of this data is dependent on a student's participation and enrollment in a physical education course.

Table 4

*Schools' Collection of Nutrition/Eating and Physical Activity Data*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Schools collecting nutrition/eating data	3	20
Schools collecting physical activity data	6	40

**Decision-Maker for Schools' Adherence to the Federal Wellness Policy**

Discovering who the decision-maker has been for a participant school's adherence to the Federal Wellness Policy was also examined (See Table 5). Participants reported an array of individuals as being responsible for a school's adherence to the FWP, including Food Service Coordinators, district administration, a district policy-writer, and a Wellness Committee/Health Council. Only three individuals identified themselves as being a part of the decision-making process, and all three of these individuals reported being on a district wellness committee that, as a unit, was responsible for overseeing adherence. The positions of these participants included a Curriculum Coordinator, Director of Student Services, and an Assistant Principal. It was also noted that while most participants did identify some individual or group by name, many participants used language indicating a level of uncertainty. For example, one participant said, "Well.... the

official person in charge of that is... well I've had a conversation with the cafeteria manager before." Another participant stated, "Our Superintendent I guess," while another noted, "I would presume... well it depends, from a curricular stand point, it's our Assistant Superintendent, from a student services standpoint it's our Director of Student Services." These responses may indicate that it is unclear, to the participants, who the individual or group is that handles the development of the district wellness policy. These responses could also indicate that these districts do not actually have a clearly designated person in charge of wellness policy development, and hence participant responses do not indicate a lack of knowledge on the participants' part, but rather a lack of clarity on the part of district organization.

When participants reported that someone other than themselves had been the decision-maker regarding the schools' adherence to the Federal Wellness Policy, they were then asked whether that identified individual is involved in implementation decisions in the school. This question was asked in order to ascertain whether the individuals responsible for district adherence to the Federal Wellness Policy also have the ability to impact the manner in which the school implements wellness programming. Of the 14 participants who identified an individual or a group as the decision-maker for Federal Wellness Policy adherence, participants reported that three of those 14 individuals have involvement in implementation decisions. In other words, 78.6% of schools are leaving decisions regarding adherence to the FWP in the hands of individuals who have no power to make programmatic implementation decisions regarding how the FWP is adhered to. As one participant said, "No, not implementation but they're involved in writing new policies and discussion of new policies." Also, it is noteworthy that food

service personnel were the second most commonly identified individuals as being responsible for district adherence to the FWP, when, by the nature of their job, their involvement is confined to foods served, rather than the nutrition education or physical activity components of the Federal Wellness Policy. The participants that indicated food service personnel were responsible for adherence, noted these same individuals' lack of involvement in implementation decisions. When asked, "Are they involved in implementation decisions?," one participant summed it up when he/she said, "No, they pretty much just do the food services."

Table 5

*Decision-maker for Schools' Adherence to FWP*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Decision-Maker		
District administration	5	33.3
Food service personnel	4	26.7
Wellness Committee	4	26.7
Policy-writer	1	6.7
Unsure	1	6.7
Identified individuals who are also involved in implementation decisions	3	21.4

### **Extent of Knowledge Regarding Evidence-Based Nutrition Education and Physical Activity Programs**

Participants' reports of how knowledgeable they feel regarding evidence-based nutrition education and physical activity programs was examined through responses to an open-ended question that were then categorized (See Table 6). Forty percent of participants ( $n = 6$ ) reported being at least somewhat knowledgeable regarding evidence-

based nutrition education and physical activity programs, while 60% ( $n = 9$ ) reported being not very knowledgeable at all. Those nine participants all used the words, “not very” in their responses.

Table 6

*Extent of Knowledge Regarding E-B Nutrition Education and Physical Activity Programs*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Level of Knowledge		
Not very knowledgeable at all	9	60
Somewhat knowledgeable	4	26.7
Mostly knowledgeable	1	6.7
Very knowledgeable	1	6.7

**Training Received on Evidence-Based Programs and their Implementation**

Participants’ reports of the training they have received on evidence-based programs and their implementation was examined. Sixty percent of participants reported receiving training on evidence-based programs and 53.3% reported receiving training on the implementation of evidence-based programs. Further follow-up regarding when participants were trained indicated that most participants were trained in the past 5 years. Additionally, slightly more participants were trained in general practices rather than specific programs, although some participants received specific program training, including for OLWEUS and School-Wide Positive Behavior Support (See Table 7). It should be noted that some participants received both general and specific program training, and so the frequency totals do not sum to the number of participants trained.

Table 7

*Training Received on E-B Programs and their Implementation*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Participants receiving training on E-B programs	9	60
Training received in past year	3	33.3
Training received 1-3 years ago	2	22.2
Training received 4-5 years ago	2	22.2
Training received 6-10 years ago	2	22.2
Trained on specific program	4	44.4
Trained on general concepts	7	77.8
Participants receiving training on the implementation of E-B programs	8	53.3
Training received in past year	3	37.5
Training received 1-3 years ago	3	37.5
Training received 4-5 years ago	0	0
Training received 6-10 years ago	2	13.3
Trained on specific program	5	62.5
Trained on general concepts	4	50

### **Attitude and Frustration Towards Evidence-Based Programs and their Implementation**

Participants' attitudes regarding the implementation of evidence-based nutrition education and physical activity programs were examined. Responses were categorized into positive or negative attitudes based on the use of positive or negative adjectives, descriptions, and superlatives. A majority of participants ( $n = 10$ ) reported positive feelings overall regarding the implementation of evidence-based nutrition education and physical activity programs. For example, one participant stated, "Personally I think it's a great idea," while another participant stated, "I'd like to see it more," and a third



participant noted he/she, "...would be open to any type of implementation of an evidence-based program... being a former athlete, I believe in healthy lifestyle habits in general."

One participant even touted evidence-based programs as the answer to the obesity epidemic, saying, "I think that obesity is in epidemic proportion and I don't think it's being taken as seriously as it could be, and evidence-based nutrition education and physical activity is the answer to that." The single participant that had an unsupportive attitude towards evidence-based nutrition education and physical activity programs noted a disapproval for imposing legislation in these areas:

I don't think you can legislate good health or exercise... sending home letters saying BMI is too high, I think that's crazy, I think that's legislation gone awry. If they're going to eat cookies and sit on the couch then that's their family decision... besides, just because you have data doesn't mean it's good.

This was the only participant that expressed solely negative attitudes regarding evidence-based nutrition education and physical activity programs. Four participants had a mix of positive and negative attitudes, some of whom echoed the concerns of the disapproving participant. Three of the participants with mixed attitudes made the following comments regarding evidence-based nutrition education and physical activity programs:

P5 – I support nutrition education and physical activity for our children. I do believe that as a school entity we should do everything we can to help educate our students and their families on healthy living. I am cautious however, to respect the individual decisions that parents make for their children and to not impose government initiated programs on those who disagree.

P9 – The basic thing is the teacher, if you stand in front of your kids and make something seem like it's not going to be fun, it's not going to be fun. I could stand in front of my kids and convince them that eating a blade of grass will give them turbo speed, and they'd believe it. And all that evidence-based stuff, who is implementing this? Sure it's a great idea but you get this in the wrong hands of somebody who doesn't live this way, there's no way they'll be able to deliver this to an audience because the audience will read right through them. Results don't lie. You can do fancy schmancy stuff all the time but if you're not seeing changes something needs to be altered.

P14 – You know, what I've done thus far or what I've experienced thus far is um, kind of pulling from this program, pulling from that program, and adapting it. Certainly if there was a program out there that was the best and was guaranteed to work, you've gotta make it work for you and your individual needs and individual school community so that's why we've gone with that pulling from here, pulling from there. But I don't have anything against the programs.

In sum, the majority of participants expressed positive attitudes towards evidence-based nutrition education and physical activity programs, while four other participants expressed positive attitudes with some caveats or reservations, as described.

The study also examined whether participants ever become frustrated around issues related to evidence-based programs or their implementation. Regarding frustration, 80% of participants reported that at times they become frustrated from issues related to evidence-based programs or their implementation in the school. Additionally, participants expanded on their responses and described why they experience frustration. Several

participants expressed frustration that they are frequently mandated to implement programs from outside groups without consideration of the school's resources or the feasibility of implementation. For example, one participant said, "I feel as though society expects public school employees to solve all of society's problems. There is only so much we can do and the family unit is critical in so many ways. At the same time, we are often expected to implement mandates without adequate funding and resources." Another participant also echoed this sentiment, saying, "My frustration is that we are told that we have to put this into place without any time, training, or money." Other participants emphasized the "revolving door" or "bandwagon effect" of political hot-topics and the difficulty that creates for sustainable implementation in the schools. Participant 9 noted, "Everybody out there thinks they have the best solution about what to do. When you're in the classroom and kids are coming in five minutes and you have to figure out what to do, and mitigating that the person outside thinks they know what to do... and people try to bridge that gap too quickly, dictatorially, recklessly, they end up bridging it by blasting it out. It needs to be sustainable and not just a short-term fix." Participant 8 discussed the "bandwagon effect" saying, "Things keep coming down the pike and education tends to hop on the bandwagon pretty quickly and then just as quickly they're off of that and on to something else." As participant 13 concluded similarly but in different words, "You get a program and get it going and then it changes... It's always changing based on who the politicians are, and that's very frustrating for everything that we do." Overall, the vast majority of participants expressed frustration around evidence-based programs and the implementation of these programs in a school, with frequent sources of expressed

frustration including high resource demands and standards imposed by disconnected politicians.

Table 8

*Attitude and Frustration towards E-B Programs*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Participants' feelings towards E-B programs		
Positive	10	66.7
Negative	1	6.7
Mixed	4	26.7
Participants reporting frustration due to E-B programs and their implementation	12	80

**Sources of Information and Resources Utilized by Schools in Regards to Wellness**

Two questions examined participants' utilization of resources in regards to wellness programming (See Table 9). These questions provided information identifying the source of where administrators are most likely to retrieve wellness program information. Responses were categorized by type of source and a frequency count of each type was conducted. Less than 50% of participants reported that resources were utilized to help their district write their wellness policy. The remaining 53.3% of participants ( $n = 8$ ) indicated they were unsure if resources were utilized. No participant reported that resources were not utilized. Of the resources that were reportedly utilized, participants accessed websites, received information from national associations, spoke with colleagues, consultants, and other schools, and worked with local wellness centers, regional Departments of Health, and universities. Some participants accessed more than

one resource to help write the school's wellness policy. Of the websites mentioned, participants reported accessing federal education websites and state Department of Education websites. Participants from different states reported accessing their respective state websites.

Regarding the location where they are most likely to access wellness program information, the majority of participants reported that they would talk to a colleague or search online. For those participants noting that they would conduct a general online search, four of six participants specifically mentioned "Google." As one participant said, "[I would] go on the internet. That would be the first thing. And maybe if I was really feeling like I needed good information, I'd try Google Scholar." It should be noted that some participants reported more than one location they would access in order to find wellness information. Also, it was noted that the sources cited for gathering wellness information differed from the reports of the sources utilized to write a local wellness policy. This may be attributed to the slightly different nature of the information sought.

Table 9

*Wellness/FWP Resources Accessed by Participants*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Participants reporting resources were utilized to create the district wellness policy	7	46.7
State Dept. of Ed. website	3	42.9
Federal website	1	14.3
Local wellness centers	2	28.6
Consultants	2	28.6
Regional Dept. of Health	1	14.3
National Association	1	14.3
Other schools	1	14.3
University employees	1	14.3
Sources where participants are most likely to access wellness information		
Colleague	6	40
General online search	6	40
Federal website	2	13.3
State website	2	13.3
District website	1	6.7
State professional conference	1	6.7
Professional organization	1	6.7
Local wellness center	1	6.7

**Factors Influencing Implementation Decisions**

The following three questions investigated participant reports of obstacles, success factors, and barriers to implementing evidence-based programs in schools. For each question, responses were categorized by type of obstacle, barrier, and success factor and frequency counts were employed (See Table 10).

In regards to obstacles, participants reported a wide range of impediments when introducing a program in their schools. Further, some participants reported multiple obstacles. Overall, the most frequently reported obstacle, which was reported by a

majority of participants ( $n = 10$ ), was insufficient time. One participant said, “Time, you know when you introduce new programs it means there’s more time involved and one of the first thing teachers will tell you is that there’s more and more to do with less time to do it.” Another participant said, “Time, that’s the biggest one,” while another noted, “Time and money.” For 3 participants, institutional financial constraints were a major obstacle they encountered when introducing a program in the schools. Another obstacle, which was reported by approximately 25% of participants ( $n = 4$ ), was absence of teacher buy-in. As one participant said, “I think it’s the teachers feeling like they’re already squeezing so much in and to do anything else is trying to do it on top of everything else. Teachers are so overwhelmed with everything else, there’s no buy-in.” Other obstacles faced when introducing a program in the schools were reported by only one or two participants, and included handling change, lack of stakeholder knowledge, doubt in program effectiveness, difficulty communicating to parents, and lack of training.

In regards to factors that have made implementation efforts related to a program successful, participants reported a wide range of success factors, including teacher involvement and buy-in (66.7%), effective training on the program (26.7%), and having adequate institutional financial resources to meet program needs (20%). As with reported barriers, some participants identified multiple factors that contributed to the success of a program in the schools, and so frequency totals reported in Table 10 do not total 15. Some participant comments citing teacher buy-in, the most reported success factor, included the following:

P1 – I will tell you that the best thing we’ve done is strengthen our building leadership team, we call it the BLT. It’s walk-through enforcement created by the teachers and assessed by the teachers.

P3 – One is having teacher involvement in the process.

P5 – In the classroom we find that when the ideas come from the teachers rather than being imposed upon them they are more likely to embrace and promote change.

P6 – Teacher buy-in, effective training. Those two.

P8 – The programs that work, at least in my school, are ones in which staff and students, there’s buy-in. If they don’t see it as important or they’re not involved in the creation of it, then there’s little buy-in and therefore it’s usually not successful.

P13 – Probably buy-in from the teachers and the kids.

P15 – If a teacher initiated it. They want it and then they get their colleagues on board. Getting the administration on board is easy. Any degree of success has always been based on the teachers getting involved and wanting it to happen.

Overall, 10 participants mentioned teacher buy-in and support, and this was the most common factor mentioned. Other participant comments included one citing administrative support: “My principal has always been a supporter. I’ve been lucky enough that he’s let me run with what I’ve done.” Meanwhile, a participant citing a shared goal as a major factor that made implementation of a program successful said, “A unified understanding and a unified approach... being on the same page, understanding the purpose and objective and being unified.”



Also, it is noteworthy that although time was reported as a major obstacle to introducing a new program in the schools, having time was not often cited as a factor contributing to the successful implementation of a program. Similarly, although training was only mentioned by one participant as a barrier to implementation, multiple participants cited training as a major factor contributing to program implementation success.

Finally, in regards to barriers that prevent school personnel from implementing evidence-based nutrition education and physical activity programming specifically, the most commonly cited barrier was time constraints ( $n = 9$ ). This closely paralleled the number of participants citing time constraints ( $n = 10$ ) when participants were asked about the greatest barrier faced in the introduction of programs in general, not just wellness-related programs. One participant citing time constraints said, “I would say fitting it into a school day and a curriculum that’s already packed [is the greatest barrier].”

The second most frequently cited barrier to implementing evidence-based nutrition education and physical activity programming was the lower level of importance and national emphasis placed on wellness compared to academics ( $n = 8$ ). Many participants shared strong reactions regarding the level of importance placed on nutrition education and physical activity:

P1 – I think right now our focus is so heavy on curriculum, we’re not being tested on nutrition, my value added for my teacher when they’re being judged on who’s gonna pass what, they’re not being judged on nutrition. It’s not what we’re teaching. There doesn’t seem like there’s a sense of urgency about it, and we only

work on things if there's an urgency at the state level or district level. Nobody's talking about nutrition, they're talking about reading. No one is driving that engine.

P5 – I think the greatest challenges are a matter of balancing resources and time for the many initiatives, mandates and requirements schools face. We all support the importance of these topics. But at the same time there are many other equally as important things we must give our attention to. There are only so many hours in a day, and so much we can do with the resources that we have.

P6 – It's a lower tiered level of, I don't know, of awareness or importance placed on it. That's the greatest factor.

P11 – Not the priority and I would say that is the biggest barrier right now.

P12 – The hard thing is getting enough public policy to compete against the other policies that school districts have to compete against academic requirements.

There was a board member who said we should mandate greater PE across the board. But with everything else it just doesn't get the support. And until it comes from the state, with everything else that they're mandating, I don't see it happening.

P14 – You're talking state mandates that are non-funded and require a large amount of time that are requirements in your core areas, and health education gets pushed to the wayside.

Overall, the greatest difference in barriers cited to implementing programs in general compared to implementing evidence-based nutrition education and physical

activity programs specifically, was the lack of importance placed on wellness-related programs.

Other barriers cited to implementing evidence-based nutrition education and physical activity programs included limited personnel, financial constraints, lack of knowledge, lack of stakeholder support, doubt in program effectiveness, and difficulty adapting a program to the local context. These responses all closely paralleled participant responses to barriers encountered in implementing new programs in general.

Table 10

*Factors Impacting Program Success and E-B Implementation*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Reported obstacles encountered when introducing program in schools		
Time constraints	10	66.7
Lack of teacher buy-in	4	26.7
Financial constraints	3	20
Handling change	2	13.3
Lack of stakeholder knowledge	1	6.7
Doubt in program effectiveness	1	6.7
Difficulty communicating to parents	1	6.7
Lack of training	1	6.7
Reported factors that have made implementation efforts successful		
Teacher buy-in and involvement	10	66.7
Training on program	4	26.7
Availability of financial resources	3	20
Availability of time	2	13.3
Administrative support	2	13.3
Belief in outcomes/quality of program	2	13.3
Stakeholder support	1	6.7
Shared goal	1	6.7
Program is built into existing system	1	6.7
Reported barriers to implementing E-B nutrition ed. and physical activity programming		
Time constraints	9	60
Level of importance	8	53.3
Limited personnel	3	20
Financial constraints	2	13.3
Lack of knowledge	1	6.7
Lack of stakeholder support	1	6.7
Doubt in program effectiveness	1	6.7
Difficulty adapting program to local context	1	6.7

### **Utilization of a Resource Guide and its Suggested Components and Information**

Participant responses concerning the question of whether they would use a resource guide if it could address the barriers they reported were examined. All but one participant reported that they would use such a resource guide if it was available. The other participant indicated that he/she would “maybe” use such a guide. Because they did not elaborate, their response was coded as stated. Participant responses indicating that they would use such a guide included, “Sure,” “Absolutely,” “No matter what,” and “If it benefits the kids, sure.” Four of the 14 participants indicating they would use a resource guide, also noted that they would pass it on to others in their building, specifically to physical education teachers.

The final two questions asked participants about the components (Question 21) and the information (Question 22) contained in a resource guide on evidence-based nutrition education and physical activity programs that would be most helpful to them. It was the intent of the principal investigator for these questions to elicit qualitatively different answers. Review of participant interview content, however, indicated that participants provided qualitatively similar responses to these questions. As a result, to preserve the original intent of the questions and to help extract participant responses in a useable form, responses to both questions were considered together and participant answers referring to components of a resource guide (i.e., the physical layout or utility characteristics) were separated from participant answers referring to a guide’s content and information.

Once question content was separated in this manner, it was found that 10 participant responses related to resource guide components. Additionally, 34 participant

responses related to the content or information contained in a resource guide. Participants often cited more than one type of information.

Regarding the components in a resource guide that would make participants more likely to use it, responses were categorized when the same component was mentioned verbatim or if a synonym was used. The components of a resource guide that would make participants more likely to use it, and were mentioned by more than one participant, included having an online format ( $n = 3$ ) and having credible authors listed ( $n = 2$ ). One of the participants supporting credible authors said that a resource guide, "...cannot be done by some nutritionist sitting in an office somewhere thinking they understand, or it'll just be another book that collects dust and no one looks at it." The other participant citing author credibility said plainly, "The credibility of who's giving it. There's always going to be somebody linked behind who the stuff is... if whoever came up with this has no passion in what it is they're actually doing, then I don't think they have any ground to stand on. You have to look at who created this program. Was it somebody sitting behind a desk and thought it sounded good?" Other participant responses were unique and a full list appears in Table 11. For example, one participant said a resource guide should be, "electronic and modern... with a hand-held binder with tabs that you could quickly use." Another participant thought "reproducibles" would be most helpful, saying, "If they [teachers] have to search all over the internet to print out forms, they're likely not to do it, but if you have the reproducible in the resource guide that they can print out themselves or go make a hundred copies of it, that would be easy and wouldn't require a whole lot of effort... the simplicity of it is really key to getting teachers to implement."

Finally, it was reported by participants that certain information contained in a resource guide would make their experience with the implementation of evidence-based nutrition education and physical activity programs easier, including a list of evidence-based strategies and programs (46.7%), an explanatory link to achievement (40%), a list of programs with no resource requirements (20%), and a list of resources (20%), among others (See Table 11). For example, one of the participants that valued a link to achievement said, “There is a whole battery of research out there that links nutrition and activity to achievement, we need to see it... something that really clearly shows the data, that’s like wow, this is just as important as reading, we gotta make this happen.” Another participant citing the link to achievement said, “The first thing I would have to have is the buy-in of the staff so any data that could be in that guide that could show student achievement increasing would be useful.” One of the three participants wanting a resource guide to contain information on programs with few resource requirements said, “If the programs require resources then that’s detrimental to the actual program... the fewer resources needed, the better it could be... bringing a brain, the purpose, and the passion and you can literally do anything you want with that, you don’t need resources.” Other participant responses were unique and specific, such as one participant’s endorsement for a list of strategies and programs that are computer-based and that have a data collection and analysis platform built-in, and another participant’s opinion that “the one thing that would make it a lot easier is if it was broken down into pieces so you could slowly implement a program instead of have a whole program at once.”

Table 11

*Utilization of a Resource Guide and its Suggested Components and Information*

<i>Responses</i>	<i>Frequency</i>	<i>Percent</i>
Participants reporting they would use resource guide	14	93.3
Components in resource guide that would make participants more likely to use guide		
Online format	3	30
High credibility of authors	2	20
Brief in length	1	10
Reproducibles included	1	10
Well organized	1	10
Hand-held binder w/ tabs	1	10
Sections span from district-wide programs to subject-level programs	1	10
Information contained in resource guide that would make participants' implementation of E-B FWP programs easier		
List of E-B strategies and programs	7	46.7
List of E-B programs with few resources	3	20
Explanatory link to achievement	6	40
List of resources	3	20
Research on program effectiveness	2	13.3
Program practicality/Link to current curriculum	2	13.3
Descriptions of what other schools have implemented	2	13.3
Implementation plan	2	13.3
Gradual implementation steps provided	1	6.7
Suggestions for staff buy-in	1	6.7
List of computer-based E-B strategies and programs w/ data analysis	1	6.7
List of data to collect	1	6.7
List of funding sources	1	6.7
Unsure	2	13.3



## **Chapter V**

### **Discussion**

The current study sought to address the policy to practice gap in school wellness by 1) examining district-level organization surrounding wellness and the Federal Wellness Policy, 2) investigating whether schools are using evidence-based nutrition education and physical activity programs and strategies to address the Federal Wellness Policy, 3) understanding and clarifying the barriers to implementation of the Policy, and 4) extending understanding of what can make access to and implementation of these programs more likely through a usable resource guide for school decision-makers that is maximally accessible and helpful in implementing evidence-based wellness programming. These four major areas of inquiry were explored through a 22-question phone interview with 15 school personnel from public schools of diverse geographic location, socioeconomic status, and size. Four key findings from these central areas of inquiry were gathered from participant responses. These findings are examined and discussed below.

#### **Dissemination and District-Level Organization around Wellness and the Federal Wellness Policy**

One of the major findings of the current study is an apparent lack of uniformity throughout schools in the manner in which they receive and gain access to information regarding the Federal Wellness Policy, as well as the schools' structure of responsibility for fulfilling the Policy on a district level. In other words, among participants, there was no clear network or procedure for learning about, adhering to, or implementing programs to address the Policy.

First, there was no uniform way in which information about the Policy was disseminated to school decision-makers in the current study. The lack of a consistent transmission method was evidenced by participant reports, in which they stated that they first heard about the Federal Wellness Policy from a vast array of sources, including their school, a colleague (cafeteria manager), a news source, State Departments of Education, a professional publication, a professional meeting, and the federal government. It is possible that the lack of one common dissemination source is true for other administrators in other schools across the country.

This study also found that there was not one common, central source that decision-makers utilized to help them write their local wellness policy, nor to obtain wellness information. In other words, it appears stakeholders retrieve and receive wellness and Policy information from varied sources. Less than 50% of participants reported that resources were utilized to help their district write their local wellness policy, and of the resources that were reportedly utilized, participants accessed websites, received information from national associations, spoke with colleagues, consultants, and other schools, and worked with local wellness centers, regional Departments of Health, and universities. Of the websites mentioned, participants reported accessing federal education and state Department of Education websites. Similarly, regarding from where school decision-makers are most likely to access wellness program information, the majority of study participants reported that they would speak with a colleague or perform a search online.

It appears that, overall, there was no significant consistent theme regarding where participants report they heard about the Federal Wellness Policy, the sources they would

go to for wellness program information, or the sources that helped the district write their local wellness policy. The disparity of these sources could indicate several different scenarios. First, it may indicate that there is not one source containing all of these disparate, yet related, types of information. Second, it could indicate that there is neither a common source that people access nor a common location where someone is drawn to look for information. Third, the lack of uniformity could also indicate poor dissemination on the part of federal policy-makers or state education agencies and insufficient communication to schools regarding access of resources.

Unstandardized dissemination and acquisition of Policy information is undesirable and not ideal for several reasons. For one, if the Policy itself is not disseminated through a unified source, then there is no guarantee that the Policy, its requirements, or implications will successfully reach all districts. Furthermore, if the Policy is not communicated in a standardized way, then it is likely that any additional information surrounding the Policy is also not distributed in a uniform manner, potentially leading to incomplete or inaccurate information on the part of the individuals who are responsible for adhering to the Policy. For example, if a district Superintendent first learns about the Federal Wellness Policy through a cafeteria manager, this may have vast implications for the level of the administrator's Policy knowledge and the ways the administrator chooses to adhere to the Policy. Additionally, a lack of standardized acquisition of information is also troubling because if there is not one common place that most district personnel access (i.e., one common website), it may be difficult, if not impossible, for policy-makers and others, to know the best portal to post information so that it can be maximally accessed by schools. Relatedly, this provides an unclear answer

as to where a resource guide could be optimally located, but provides credence to the importance of proactively disseminating information to schools so that the dissemination of wellness information to districts is driven by consumer needs rather than producer convenience.

Attempting to discern who the decision-maker has been for a participant school's adherence to the Federal Wellness Policy, as well as that decision-maker's role in implementation decisions, was also revealing. Overall, participants reported no overwhelmingly common employment position in the school as being responsible for a district's adherence to the Federal Wellness Policy. Instead, a wide array of individuals was identified, including Food Service Coordinators, district administration, a district policy-writer, and a Wellness Committee/Health Council. Three participants reported that they were on the Wellness Committee/Health Council for their school and, as a result, had some influence in the decision-making process. When trying to understand why different participants were or were not involved in decision-making regarding the Federal Wellness Policy, participants' roles in the school were considered. However, there was no evident pattern of decision-making amongst the eight Principals, three Assistant Principals, one Superintendent, one Assistant Superintendent, one Director of Student Services, or one teacher. Furthermore, the number of years spent working in education did not seem to be related to the individual's involvement in the decision-making process. In fact, it appeared as though there was no common decision-making individual or group role existent throughout all schools. This is consistent with previous research that found that identifying a person in charge of the local wellness policy was the least followed FWP requirement (Gaines, Lonis-Shumate, & Gropper, 2011). Of the individuals or

groups that were identified as being in charge of district FWP adherence in the current study, the majority were reported as having no involvement in implementation decisions in the school. In other words, 78.6% of participants' schools are leaving decisions regarding adherence to the FWP in the hands of individuals who have no power to make programmatic implementation decisions regarding the quality of FWP adherence.

The FWP created many new standards for schools, but the failure to appoint an individual to oversee fulfillment of these standards may reflect a lack of an organized approach to the ways schools address the Federal Wellness Policy. This result may suggest that the FWP is not being tied to implementation of programs, but is instead being fulfilled solely through the wording of local wellness policies, rather than actions. Several previous national studies have found that local wellness policies adhered to mandates set forth in the Federal Wellness Policy at a rate of 68% to 85% (Action for Healthy Kids, 2005; Gaines, Lonis-Shumate, & Gropper, 2011; Moag-Stahlberg, Howley, & Luscri, 2008; Probart, McDonnell, Weirich, Schilling, & Fekete, 2008). This adherence, however, was measured simply by examining the wording of local wellness policies and basic fulfillment criteria. The current study has expanded on this research and demonstrated that although districts may be adhering to the FWP, they are not doing so in an organized way, they are often not appointing individuals who have an impact on subsequent program implementation, and they are not receiving relevant information regarding the Policy in a standardized way.

## **Schools' Use of Evidence-Based Programs and Strategies to Address the Federal Wellness Policy**

A second major area of inquiry in the current study was to understand the quality with which schools are adhering to the Federal Wellness Policy. When implementing programs to address the Federal Wellness Policy's physical activity and nutrition education provisions, schools should be employing programs and strategies that are evidence-based in order to adhere to law and best practice guidelines, as well as to have the greatest possible positive effect on students' health and achievement. A major finding of the current study is that most schools are adhering to the Federal Wellness Policy through low-quality practices and the implementation of non-evidence-based programs.

This was found through several key questions posed to participants. Before analyzing the quality of implementation practices, the study sought to ascertain whether participants had heard of the Federal Wellness Policy and the term "evidence-based programs," as an indicator of, at the very least, rudimentary awareness. It was found that all participants in the current study were aware of the Federal Wellness Policy and evidence-based programs, however, only 10 of 15 participants reported that their district was currently implementing at least one evidence-based program of any kind, and only 2 of 15 participants reported that their district was currently implementing evidence-based nutrition education or physical activity programs. There are a multitude of potential evidence-based programs that schools could implement at all levels and subject areas, and school professionals should have knowledge of them. While it is possible that a greater portion of participants' schools are implementing evidence-based programs, and that the participant interviewed was unaware of them or unable to recall them at the time

of the interview, it remains notable that some districts are reportedly not implementing any evidence-based programming. Further, for those districts that are implementing evidence-based programming, participants reported implementing programs that are limited and specific in target topic and population. For example, some participants mentioned a subject-specific program, with no mention of evidence-based programming in other core subject areas on which state standardized testing is conducted. Overall, findings indicating non-universal evidence-based programming of any kind are revealing considering that evidence-based interventions are mentioned in IDEA (2004), No Child Left Behind (2002), the National Association of School Psychologists (NASP, 2010) practice guidelines, and the NASP and APA (2002) code of ethics for psychologists.

Given participant reports regarding the lack of implementation of evidence-based programs in general, it was not surprising that only two participants, or 13%, reported implementation of evidence-based nutrition education programs. Further, the two participants reporting implementation of these types of programs noted that the implemented programs were time-limited and aimed at a narrow target group. For example, one program was only targeted at elementary students in the district. Previous research investigating the average number of evidence-based programs that schools are implementing is very limited. One area that has been investigated is the prevalence of evidence-based prevention programming in schools, as it pertains to substance use (alcohol, tobacco, and other drugs). One study found that 59% of 104 surveyed school districts reported using research-based programs for substance use prevention (Hallfors & Godette, 2002). This is a drastic difference when compared to the 13% of districts in the current study reporting implementing evidence-based nutrition education programs. In

other words, although schools are required to implement nutrition education programs, and despite national recommendations that all students receive nutrition education, evidence-based programs do not seem to be the common mechanism for delivering that education (Marx and Northrop, 1995). This is especially interesting considering that other studies have found that nearly all public schools offer some kind of nutrition education at some point in a youth's career (National Center for Education Statistics, 1996). It appears that although almost all schools offer some kind of nutrition education, the programming does not tend to be evidence-based. This is distressing considering that less than 33% of non-evidence-based nutrition education programs impact students' motivation, attitudes, or behaviors (National Center for Education Statistics), whereas evidence-based programs are designed to impact student motivation, attitudes, and eating behaviors (Contento, Manning, & Shannon, 1992). It was noted that many participants in the current study mentioned improved cafeteria offerings in their schools as potential evidence-based programs. While research supports that healthier school food offerings have had a positive impact, research has also found that only changing the barrier of availability to healthy food is not enough to change individuals' eating habits or preferences (Coakley, 2001). In other words, changing the cafeteria offerings, while positive, is not enough. Students also require nutrition education to create life-long healthy eating habits.

Similar findings concerning the quality with which the Federal Wellness Policy is being addressed in regards to physical activity was revealed when only two participants reported implementation of evidence-based physical activity programming. The implemented programs included Girls on the Run ( $n = 2$ ) and Leader in Me ( $n = 1$ ).



These programs are highly specific in their target population, just like the evidence-based nutrition education programs that participants reported as being implemented. For example, Girls on the Run is a program that is designed only for girls, which leaves out approximately half of the school population who receive non-evidence-based programming. Further, some participants reported that their districts were implementing physical education, but when queried, reported a limited number of days and hours of physical education offerings, consistent with previous research regarding the length of physical education opportunities in schools. While physical education itself can be evidence-based when delivered consistently and when minimum time requirements are met, it is rare for schools to meet this requirement, and no participant schools did (Burgeson, Wechsler, Brener, Young, & Spain, 2001). Similar to nutrition education, which is mandated, physical education is a mandated part of the school curriculum. Despite daily recommended physical education, as well as research suggesting that it has educational and developmental benefits, the actual time spent in physical education is not significant enough to create behavioral changes in students (Burgeson, Wechsler, Brener, Young, & Spain, 2001; National Association for Sport and Physical Education, American Heart Association, 2006).

The first step in implementing evidence-based programs is often the establishment of a data collection system and the ability to record and track data, thus, another area investigated was the collection of any nutrition or physical activity variables by participant schools. According to participant responses, three schools, or 20% reported collecting nutrition or consumption data. For all three districts, this data is a nutrient, caloric, and food group analysis of what students are consuming in the cafeteria during

breakfast and lunch. Three additional participants noted that their schools are collecting the same type of data, but it is simply stored electronically and not used to track progress, make intervention decisions, or made available to students. Twice as many participants reporting collection of consumption data reported that their school is collecting some type of physical activity data. Six participants reported that their district records resting and active pulse/heart rate, and this data is tracked for students over time. While it is positive that these schools are collecting some type of data, the kind of data they report collecting is very limited in scope. Further, the physical activity data is only recorded during physical education classes, and hence, the collection of this data is dependent on a student's participation and enrollment in a physical education course. While some data collection and tracking purposes have been controversial (e.g., "Fat letters"), data-based decisions are a hallmark of evidence-based practice and effective intervention, and the current study suggests that most schools have not begun establishing data collection, analysis, or progress monitoring procedures.

In sum, previous research suggested that the vast majority of schools were adhering to the Federal Wellness Policy and were implementing nutrition education and physical activity programming, but there was a lack of research on the strategies and programs used to fulfill the Policy. In other words, it was not known how schools addressed the nutrition education and physical activity components, nor the quality with which they were addressed. The present study answered these questions and found that most participants' schools are currently implementing non-evidence-based nutrition education and physical activity programming, and the limited evidence-based programming that is offered does not tend to be available to all students.

## **Factors Influencing Implementation Decisions and the Research-to-Practice Gap in Schools**

Given that the majority of districts in the current study are not implementing evidence-based nutrition education and physical activity programs, a third major goal of the current study was to understand why schools are not implementing such programming by identifying the barriers to such implementation. Overall, it appears that there are a wide range of barriers that prevent school personnel from implementing evidence-based programs. Specific barriers reported by participants in the current study included little knowledge or training, high frustration, mixed attitudes towards evidence-based nutrition education and physical activity programs on the part of school decision-makers, lack of time, limited financial resources, lack of teacher buy-in, and a decreased level of importance placed on wellness compared to academics. Each of these barriers will be discussed further.

Previous research cemented the importance of knowledge, training, and attitudes on a stakeholder's likelihood of implementing an evidence-based program. A lack of knowledge, little training, and a negative attitude towards a program have all been found to be barriers to implementation (Belansky et al., 2009; Budd, Schwarz, Yount, & Haire-Joshu, 2009; Forman, Fagley, Steiner, & Schneider, 2009; Rogers, 2003). The current study extended past research to examine self-reported knowledge, training, and attitudes in regards to the implementation of evidence-based nutrition education and physical activity programs to fulfill the Federal Wellness Policy.

In the current study, 60% of participants reported having no knowledge or very little knowledge of evidence-based nutrition education and physical activity programs.

Only one participant reported being very knowledgeable, while four others reported having some knowledge of such programs. Before students can gain wellness knowledge through evidence-based programming, school decision-makers must first gain knowledge about these programs and the benefit of implementing them. Currently, it appears that school decision-makers do not feel sufficiently familiar with nutrition education and physical activity programs. As a result, lack of knowledge is a barrier to implementation. Similarly, 40% of participants reported receiving no training on evidence-based programs and 47.7% received no training on the implementation of evidence-based programs. Further, only one participant reported training on an evidence-based nutrition education or physical activity program. While it is positive that approximately half of participants have received some type of training related to evidence-based programs or their implementation, half of participants remain without training in these areas. This is significant considering the most important predictor of diffusion success is training (Forman, Fagley, Steiner, & Schneider, 2009). Similarly, stakeholder attitudes toward a program impact probability of implementation; the current study found that 33.3% of participants reported negative or mixed feelings regarding the implementation of evidence-based nutrition education and physical activity programs. While no previous data on training, knowledge, or attitudes specific to nutrition education and physical activity programs existed prior to the current study, the current study suggests that school decision-makers lack knowledge of and training in evidence-based nutrition education and physical activity programs, and that they also have mixed attitudes regarding such programs. These factors are detrimental to the achievement of students as it decreases the

likelihood that they will have the opportunity of being exposed to evidence-based programming.

In addition to mixed attitudes, school personnel appear to be experiencing high frustration from issues related to evidence-based programs and their implementation in the school. Participants expanded on their sources of frustration through questions about the obstacles encountered when implementing programs in schools and the barriers to implementing evidence-based nutrition education and physical activity programs specifically.

In regards to obstacles faced when introducing a program in schools, time constraint was the greatest reported obstacle for introducing a new program. Financial constraints and lack of teacher buy-in were the next most commonly cited barriers. Alternatively, the factors that participants reported made a program successful included teacher involvement and buy-in (66.7%), effective training on the program (26.7%), having adequate financial resources to meet program needs (20%), and having administrator support (13.3%). The importance of teacher support is consistent with findings from another study that asked program developers to identify the major factors that have made implementation of their interventions successful (Forman, Olin, Hoagwood, Crowe, & Saka, 2008). Developers most often cited teacher support (58%), followed by principal support (54%), support from other administrators (58%), and adequate training (50%). It is possible that principal support and support from other administrators was not cited as much in the current study because the participants were primarily principals and other administrators. The fact that the sole teacher in the current

study was the only participant that cited administrative support as an important factor to program success supports this assumption.

In regards to what is preventing school personnel from implementing evidence-based nutrition education and physical activity programming specifically, two major barriers were identified. First, the most commonly cited barrier in the current study was time constraints. This closely compared to the number of participants citing time constraints when they were asked about the greatest barrier faced in the introduction of programs in general, and not just wellness-related programs. The second greatest barrier to implementing evidence-based nutrition education and physical activity programming was the reported lower level of importance and national emphasis placed on wellness compared to academics. Currently, schools are facing competing pressure from increased high-stakes testing requirements, the results of which are often used to judge the quality of a school, its teachers, and its decision-makers. Wellness-related domains are not a part of those high-stakes standardized testing requirements and, perhaps as a result, participants indicated that wellness education is not a priority in their district, despite substantial research evidence definitively linking wellness and academic achievement.

Several other noteworthy patterns were observed in participant responses regarding barriers. First, although participants cited the lesser importance placed on wellness compared to academics as a reason for not implementing evidence-based programs, there were still multiple participants reporting no implementation of evidence-based programs in core subject areas. Second, it was noted that other barriers cited to implementing evidence-based nutrition education and physical activity programs included limited personnel, financial constraints, lack of knowledge, lack of stakeholder

support, doubt in program effectiveness, and difficulty adapting a program to the local context. Interestingly, although one third of participants had a negative or mixed attitude to evidence-based nutrition education and physical activity programs, personal attitude was not mentioned as a barrier to implementation of these programs. Further, only one participant mentioned training as an obstacle and only one participant mentioned knowledge as an obstacle, despite most participants citing little to no knowledge of evidence-based nutrition education and physical activity programs and all but one participant citing no training.

Participant reports of encountered and perceived barriers have parallels to previous studies examining the implementation of wellness policies across the country which uncovered that a lack of knowledge, competition for time, and lack of monetary resources were all barriers to wellness policies being implemented as intended (Belansky et al., 2009; Budd, Schwarz, Yount, & Haire-Joshu, 2009). The results from the current study also share similarities to results from Forman and colleagues (2008), who found that program developers reported the primary obstacles to implementation efforts were money (54%), time (33%), personnel beliefs about the intervention (33%), competing priorities (29%), and No Child Left Behind (29%). The current study makes a significant contribution to the literature by investigating perceived barriers that are specific to evidence-based nutrition education and physical activity programs, and extends past literature by uncovering that there is currently a lack of sufficient training and knowledge in this area, and that school decision-makers are experiencing high frustration and mixed attitudes towards the implementation of evidence-based wellness programming due to competition for time, monetary resources, and less emphasis placed on wellness than

academics. For evidence-based nutrition education and physical activity programs to be implemented, these barriers need to be considered and addressed.

### **Resource Guide for School Decision-Makers**

A resource guide can be one mechanism through which to address barriers to implementing evidence-based nutrition education and physical activity programs as well as to begin to close the policy-to-practice gap in this area. As such, the final goal of the current study was to determine whether school decision-makers would use a resource guide if the guide could address the barriers they had previously reported, as well as to identify the components and information in a resource guide that would make it maximally user-friendly while also increasing the likelihood that school decision-makers will implement evidence-based physical activity and nutrition education programming. A key finding of the current study was that school decision-makers report they would use a resource guide on evidence-based nutrition education and physical activity programs if it were available, however, there was no consistently reported component or type of information contained in a resource guide that would ensure its usefulness to all decision-makers.

All but one participant reported that they would use a resource guide on evidence-based nutrition education and physical activity programs if it was available and addressed the barriers to implementation of such programs. In other words, if a resource guide would not address how to overcome the barriers presented by participants in this study, there would be no interest in or motivation to use the guide. While such a guide can be created, it presents a difficult challenge due to the number of diverse barriers that



participants uncovered, as well as the divergent desired components and information that decision-makers reported would be most useful.

Additionally, feedback on components and content was sought from participants due to a lack of literature on how school decision-makers can be assisted in implementing evidence-based wellness programming, in addition to numerous findings which indicate a widespread lack of implementation of such programs. In terms of the physical components and layout of a resource guide that would be most desirable to participants, there was no major agreement on the stated components, suggesting it may be difficult to create a singular guide that would balance all the characteristics that participants stated. For example, characteristics mentioned included having an online format, having credible authors, being electronic and modern, having a hand-held binder with tabs, and containing reproducibles.

Regarding the information contained in a resource guide that participants reported would make their experience easier in terms of the implementation of evidence-based nutrition education and physical activity programs, responses included a list of evidence-based strategies and programs (46.7%), an explanatory link to achievement (40%), a list of programs with no resource requirements (20%), and a list of resources (20%). Other participant responses were unique and specific. It is possible that participant responses did not overlap more for several reasons. First, it is possible that participants mentioned the most salient aspects on their mind from recent experiences. Second, it is possible that decision-makers did not list all types of information that would be helpful to them. Relatedly, decision-makers may have more shared thoughts on the topic than was shown in these results.

The creation of a resource guide can be the first step towards bridging the gap between policy and practice regarding the Federal Wellness Policy and the implementation of evidence-based programs. Because data from the current study is the only known research on this topic, and due to the low rate of current implementation of evidence-based wellness programs, the components and information contained in a resource guide should reflect the aforementioned feedback from school decision-makers, as well as address reported barriers to implementation, both stated and implied by participants of the current study. By creating a guide that increases the likelihood of evidence-based wellness program implementation, the probability that a student will benefit from such programming and lead a healthier life with increased academic achievement can be realized.

### **Limitations of the Current Study**

The current study contributed several new and significant findings to the existing literature on schools' relationships with the Federal Wellness Policy's nutrition education and physical activity components. However, the limitations of the study must also be fully considered. The first limitation of the current study is that it used a relatively small and non-randomly selected sample. Findings from a non-random sample of 15 school personnel do not lend themselves to drawing definitive generalizations to a broader population of schools. It should be noted that there was a great diversity of participant and district characteristics, especially given the limited sample size, but this diversity also makes conclusions related to school or participant demographics impossible. Therefore, conclusions cannot be drawn as to individual participant responses being representative

of a larger segment of that participant's gender, role in the school, school geographical area, or district socioeconomics.

The possible role of selection bias was a further limitation to the current study. Participants were initially contacted by the principal investigator and given a brief overview of the purpose of the study. This introduction may have allowed participants to self-select into or out of the current study based on the study's topic. For example, it is possible that individuals who had never heard of the Federal Wellness Policy chose not to participate in the study, and hence, skewed the representation of awareness, experience, and opinions regarding the Federal Wellness Policy.

Relatedly, another possible limitation of the current study is social desirability bias. While selection bias may have played a role in participants' initial decision to participate in the study, once they were in the study, participants' may have answered questions in such a way as to sound "right" or answer in a perceived correct or desirable way. For example, several questions asked about the implementation of evidence-based programs in participants' districts. Participants may have realized that evidence-based program implementation was favored, and this realization may have impacted responses. Similarly, participants may have felt the pressure of social desirability when reporting that they would use a resource guide on this topic. In actuality, it is possible that participants would not use such a guide at the almost universal rate they reported. Overall, while the limitation of social desirability must be considered, it is important to note that numerous question responses included many non-socially desirable responses, such as the wide reporting of a lack of evidence-based implementation, perhaps

suggesting that social desirability bias did not discolor participant responses to a great degree.

Another limitation of the current study was that only one participant was interviewed from a district, who had one specific and limited role in the school, while interview questions spanned multiple areas of experience, including curriculum, wellness, program implementation, district administration policies, etc. The wide range of questions posed by the principal investigator may have made it difficult for one individual to accurately and thoroughly answer all questions posed to them, and hence, it is possible that some question responses may not have been fully representative of actual district practice or procedure. For example, it was noted that several participants spoke generally of programs or initiatives when asked about current evidence-based program implementation, and some participants even commented that they knew their district had more programs implemented but were not confident in naming them. Therefore, it is likely that participants did not supply an exhaustive list of evidence-based programming occurring in their district, leading to a possible under-recording of the number of evidence-based programs implemented. Thus, this data should be interpreted cautiously and not be considered definitively fully representative of evidence-based program implementation.

A final limitation of the current study arose out of the self-report format of data collection. Similarly to the constraint of interview responses being based on one person's knowledge of various areas of district functioning, responses to what participants thought would be most helpful in implementing evidence-based nutrition education and physical activity programs was limited by the participants' perceptions of what they thought they

need. However, perceived need could vary widely from what would actually be most helpful to or most needed for successful implementation. For example, a participant may have reported that they need a program with more flexibility, when in actuality they need to implement a program with fidelity, or a program that spans all age groups. A gap between perceived need and actual need is especially likely given the self-reported lack of knowledge regarding evidence-based nutrition education and physical activity programs. Despite a majority of participants reporting very little knowledge in these areas, these same participants were asked to answer questions that may have been impacted by their limited knowledge in this area. In this way, the self-report format of the current study may have been limiting to the study's findings.

The current study contributed to the existing literature in this area and retrieved valuable information by uncovering the knowledge, experiences, and perceptions of school decision-makers on this topic for the first time; the limitations, however, should not be overlooked in drawing conclusions from a small sample containing participants' self-reported data, as well as the provision of data by one individual for an entire district.

### **Suggestions for Future Research**

In consideration of the aforementioned limitations as well as the findings of the current study, several directions for future research are suggested. First, due to the limited sample size and generalizability of the current study, future research should investigate the current study's areas of inquiry through national surveys with large and randomly selected sample. In order to fully understand schools' practice related to the Federal Wellness Policy's nutrition education and physical activity components on a national

scale, issues related to the quality of wellness implementation need to be investigated on a more widespread scale.

Second, the measure used in future research on this topic should include more questions on evidence-based practices, not solely evidence-based programs. Evidence-based practices may be less dependent on resources than full evidence-based programs and therefore may be more implementation-friendly, especially considering the current study's finding that decision-makers cite time and money as major barriers to evidence-based program implementation. Consequently, it is suggested that future research examine factors that influence eating and physical activity behaviors that are not part of an organized program, such as the number of staff wellness programs in existence, the incorporation of physical movement into classrooms and the method of incorporation, and the number of opportunities there are for physical movement. Relatedly, future research should begin to consider how to address some of the barriers reported by decision-makers, while still maintaining evidence-based practice. For example, if fitting programs into the school structure is a barrier and the limited target population of some programs is a barrier, perhaps future research can begin to fit practices into a primary level Response to Intervention framework.

Third, it was noted in the current study that school decision-makers generated many unique components and information that they would find helpful in a resource guide. All responses were generated from an open-ended question that did not provide response options for participants and hence relied on participant recall in the moment. As such, future research that examines how best to close the policy-to-practice gap in this area should consider presenting closed-ended options to participants and allowing them

to choose all components and information that would be helpful to them. Through a close-ended format, participants may endorse a greater number of components and types of information than they did through free recall, and hence a pattern of the most commonly desired components and information types may be more easily uncovered. This may help to better inform the creation of future research guides on this topic.

Finally, given the clear lack of organization regarding dissemination of the Federal Wellness Policy and its nutrition education and physical activity initiatives, future research should investigate the best methods for dissemination that succeed in reaching all school decision-makers about new policy.

### **Implications for Policy and Practice**

The findings from the current study have vast implications for both policy and practice. In terms of implications for public policy, the current study demonstrated that public policy can be the first step towards creating change, but that the impact of policy is only as good as its dissemination, clarity, and adherence. For example, the data from the current study indicates that there has not been much effective dissemination to school decision-makers regarding information about the Federal Wellness Policy or ways to most effectively fulfill it. This suggests that policy-makers should consider finding or producing one central and publicized location for all information pertaining to an educational policy and that the information contained therein should include rationale of the policy, research evidence on the topic, a list of evidence-based programs and those programs' required resources, a list of funding sources, and a list of evidence-based practices.

Policy-makers should also consider how schools will actually implement new policies and the barriers that will be potentially faced so that new policies can be accompanied by suggestions regarding how to maneuver common systemic barriers that may be encountered. School decision-makers are clearly and adamantly communicating that they cannot be given additional mandates without more time or money with which to carry out those mandates. At this point, having a school be required to do more with no additional support is a near impossibility. If more is going to be required of schools by legislators, then schools need to be explicitly shown how they can do more with the resources available to them. Policy-makers cannot stop at the point of producing policy if they truly want to witness its positive impact. Rather, policy-makers need to show that a policy is valued by supporting the schools it legislates, rather than only providing new requirements.

The current study also has implications for how policy should be written. Specifically, it appears that policy needs to be as clear and explicit as possible in regards to mandated requirements, minimum standards, and the people who are responsible for overseeing adherence. For example, the current study unveiled that it is not clear to school decision-makers who is responsible for Federal Wellness Policy adherence and implementation, nor who should be responsible. As a result, districts seemed to lack organization, without which, it is unlikely that positive change can proceed. Further, policy also needs to address the fact that no minimum specified standard exists for nutrition education and physical activity components, and perhaps as a result of that, schools are not implementing coordinated programming to address these areas, let alone evidence-based programs. Finally, policy needs to continue to be promoted to make it



clear that wellness is an enduring and permanent educational value, not a passing fad. When one of the major barriers to successful implementation is the revolving door of public policy, it is no wonder that decision-makers need reassurance and support to know that wellness is worth their time and attention.

The current study also has implications for the practice of school decision-makers. One major finding of the current study was that there appears to be a lack of training for school decision-makers on evidence-based programs. Although all participants in the current study reported that they had attended graduate school, many did not have any training on evidence-based programs. Graduate schools, whether for education, educational leadership, school psychology, or other relevant areas, need to ensure training on evidence-based programs is provided to all graduate students. Given that training is highly correlated with the likelihood of implementation, if half of current school decision-makers have not received training, then the likelihood of implementation of evidence-based programs across the United States is significantly impacted.

Similarly, as part of that training and as part of professional practice, evidence-based practices and programs need to be de-mystified. School psychologists can be one type of professional that can assist in educating others in the school setting about the importance and value of evidence-based practices and programs and provide accurate information regarding their implementation. Given findings from the current study, it appears that many students across the country are not receiving evidence-based instruction in core subjects, and most are not receiving evidence-based instruction in nutrition education or physical activity. While offering physical education and having healthier lunch options are positive steps towards greater wellness, a majority of students

are still not receiving evidence-based instruction, and as such, schools are wasting valuable instructional time by employing strategies that may not produce positive change.

Professionals may also need to begin embracing evidence-based practices, which produce positive change but may not require the heavy resource burden that other programs have. For example, in the current study, some schools provided free or reduced-price lunches to over 40% of the student body. Such schools have financial constraints as a barrier to implementation and so evidence-based practices that may be less finance-dependent than an evidence-based program should be seriously considered. Likewise, some schools were very rural in location and also had unique community features that meant canned programs would require extensive adaptation to be suitable to the local context. Limited by small size and a rural geographical population with unique needs, it is foreseeable that certain districts may struggle with adapting mass produced programs to their local context. School psychologists can work with teachers and administrators to promote evidence-based practices and help schools find a way around some of the existent barriers such as financial and size limitations, in order to help successful implementation of practices occur. For example, a school psychologist could provide program options that require few resources or find funding opportunities. An individual like a school psychologist could also help school personnel address their own frustrations around evidence-based implementation.

Finally, and perhaps most importantly, the current study showed that schools do not tend to see wellness as a priority. This finding suggests that until a link is clearly made and communicated to school decision-makers regarding wellness and achievement, wellness initiatives are likely to take a back seat to other initiatives that are perceived as

being more relevant to achievement. In this regard, school psychologists are one set of individuals that can be a champion for the wellness cause, especially because wellness initiatives benefit students in the domains of academic achievement, physical health, behavior, and social-emotional health, while bringing positive impact to all students.

### **Conclusion**

The present study examined how the Federal Wellness Policy's nutrition education and physical activity components have been addressed in schools, the barriers school decision-makers encounter to implementing evidence-based programs, and the content and format of a resource guide that would increase the likelihood that they would implement evidence-based wellness programs and strategies. The present study offered new insights regarding how wellness is being addressed in schools and what can be done to increase wellness programming.

With the passing of the Federal Wellness Policy in 2004, schools were required to set goals for student nutrition education and physical activity. While the Policy set forth higher standards for schools' roles in healthy eating and adequate physical activity, the legislation itself did not describe a path towards fulfilling its requirements. Consequently, schools were left without a road map to success. Hence, understanding why schools may not implement programs that are evidence-based to address wellness issues and understanding what elements a resource guide should ideally contain to increase evidence-based program implementation, became paramount, as well as the crucial next step for research in this area. Because school decision-makers have a role in the methods schools use to fulfill these requirements, interviews were conducted with 15 school decision-makers.

The interviews conducted in the current study revealed several major findings. Overall, it appears that most schools are not implementing evidence-based nutrition education or physical activity programs. Further, schools lack organization around the issue of wellness, including from where they retrieve and receive information, who is responsible for wellness policy development, and how implementation decisions related to wellness are made. Findings also demonstrated significant reported barriers to implementing evidence-based nutrition education and physical activity programs and those barriers included time and financial constraints, lack of knowledge and training, an absence of buy-in from school staff, and a lower priority placed on wellness endeavors than academic endeavors. While many barriers were identified, school decision-makers also expressed unanimous interest in a resource guide that helps them address barriers to the implementation of wellness programs.

To address barriers, increased training of school personnel must occur, knowledge and the link between achievement and wellness must be strengthened for school decision-makers and disseminated more effectively, and feasible implementation suggestions for schools that respect the competing pressures they face must be provided. By promoting evidence-based practices and programs that are realistic to schools' resource structure, wellness can thrive in schools across the country and all youth can experience the benefits of improved mental and physical health.

## Chapter VI

### Resource Guide for School Decision-Makers

The following resource guide has been created based upon findings from the current study, as well as previous research on dissemination effectiveness. In order to maximize effectiveness of this resource guide and increase schools' implementation of programs and strategies that demonstrate improved eating and physical activity behavior, several recommendations beyond the content of the resource guide are warranted. First, it is recommended that the resource guide should be available in one centralized location, such as a website. Ideally, to increase visibility and accessibility by the target audience, the resource guide should be available on the US Department of Education website. Further, a link should be provided on each state's Department of Education website. To maximize dissemination, a hardcopy of the guide should also be mailed to each district.

#### Resource Guide for School Personnel: Programs and Strategies to Effectively Address Wellness in Schools and Improve Student Outcomes

##### The current state of student health

In the United States, approximately 20% of school aged children are obese, 33% are overweight, and there has been a historic increase in the prevalence of these issues over the past 30 years (National Center for Health Statistics, 2011; Ogden, Carroll, Kit, & Flegal, 2012). These startling statistics are due to decreases in physical activity and healthy eating by this age group (Brownson, Boehmer, & Luke, 2005; Centers for Disease Control and Prevention, 2009). Specifically, less than 20% of youth are engaged in the nationally recommended amount of 60 minutes of physical activity per day and only 2% of children aged 2-19 consume a diet consistent with the recommendations of the Food Guide Pyramid (Center for Disease Control and Prevention, 2002, 2007). Further, only 20% of children are eating five or more servings of fruits and vegetables each day while more than 60% are exceeding the saturated fat intake guidelines (Centers for Disease Control and Prevention).



*Adequate nutrition* is defined as healthy eating, that is, eating that is healthful in both its quantity and quality. It is possible to consume quantity in excess, but be undernourished in quality.

*Regular physical activity* is defined as engaging in at least 60 minutes of physical activity each day, as recommended by the US Department of Health and Human Services recommends.

##### Why is adequate nutrition and regular physical activity so important?

Overweight and obesity lead to an increased risk for numerous physical ailments and diseases including heart disease, type II diabetes, high cholesterol, bone weakness, and high blood pressure (Center for Disease Control, 2011; Dietz, 2004; Freedman,

Zuguo, Srinivasan, Berenson, & Dietz, 2007; Li, Ford, Zhao, & Mokdad, 2009). In addition to physical outcomes, the health of children also impacts their mood (Strong et al., 2005). Children who are at healthy weights and engage in regular exercise have lower incidences of symptoms of depression and anxiety and decreased risk of being the victim of bullying and teasing than their peers who are overweight or obese (Strong et al., 2005). This same pattern of results is seen for cognitive performance as well. Greater physical activity and healthy eating are associated with better memory, concentration, and attention (Strong et al.). **Finally, the consequences of poor health for this age group surface through poorer academic performance, poorer standardized testing scores, greater school absenteeism, and more disruptive classroom behavior (Strong et al.).**



*What causes poor eating and low rates of physical activity?*

When children are young, their physical activity and eating behaviors are impacted by what is modeled by the adults around them. If adults do not model or promote physical activity, the child begins to value physical activity less, wants to engage in it less, enjoys it less, and believes they are not good at physical activity nor will benefit from it. Over time these negative beliefs and attitudes become negative schema about exercise, which are associated with decreased engagement in physical activity (Bauman, Sallis, Dzewaltowski & Owen, 2002). As a behavioral pattern of inactivity forms, the child may gain weight as they are inactive, leading to overweight and obesity, which are strongly associated with decreased levels of physical activity, further perpetuating the cycle of inactivity (Kohl & Hobbs). In addition to these factors, eating behaviors in school-age youth are also influenced by social factors such as television, advertisements, and peer modeling (Westenhoefer, 2001). Children are constantly exposed to media messages that encourage them to eat foods that are high in fat and caloric content, but low in nutrients (Linn, 2004).



*How are students' mood, behavior, and memory impacted by their nutrition and physical activity?* Mood impacts can be caused by short-term fluctuations in glucose which are associated with low nutrient food consumption (Benton, 2001). Behavior and memory impacts have also been observed results of poor nutrition. Evidence suggests this may be due to low nutrient levels, particularly folate, zinc, and glucose (Benton, 2001; Bryan et al., 2004).

Why should schools be invested in the eating and physical activity behavior of their students?

**Nutrition and physical activity impact achievement.** All of the domains of potential negative consequences of poor health (cognitive, psychological, academic, physical) may negatively impact a child's success in the school environment, including academic achievement and standardized test scores. Schools, by definition, are invested in the achievement of their students, and so improving nutrition and physical activity aligns with schools' broader mission.

For example, research clearly shows that students who engage in more physical activity tend to have higher grades, better standardized test scores, spend more time on task in the classroom, and have fewer behavioral issues than those students who engage in less physical activity, or less vigorous physical activity (Shephard, 2007; Trost, 1997).

**Addressing student nutrition and physical activity in schools is mandatory.** As if the impact on student achievement wasn't enough, setting nutrition and physical education goals has become MANDATORY for public schools with the passing of the Federal Wellness Policy. The federal government implemented the Federal Wellness Policy in order to help improve the prevalence of healthy behaviors in schools (Public Law 89-642). The Act established a new mandate whereby all districts participating in the National School Lunch Program are required to create local school wellness policies that address nutrition as well as physical activity. Specifically, local school wellness policies must include 1) "goals for nutrition promotion and education, physical activity, and other activities that promote student wellness," 2) nutrition guidelines for all foods available during the school day, 3) specifications that all foods served during the school day meet regulations and guidelines set forth by the Secretary of Agriculture, 4) specifying how involvement will be sought and incorporated from parents, students, school administrators, staff, food service providers, and the public in development of the policy, 5) a plan for measuring the impact (effectiveness) and implementation of the policy, and for publicly reporting on progress (Public Law 111-296). In sum, since 2010, schools have been required to set nutrition education and physical activity goals. Further, schools are required to monitor the implementation of these goals, and track progress (Child Nutrition WIC Reauthorization Act, 2004; Healthy, Hunger Free Kids Act, 2010).

Further, with an increased focus on wellness nationwide, **it is possible that policy will become even more stringent in the future and require specific programming to address wellness.** Don't be left behind... Start planning for the implementation of wellness programs and practices in your school.



*Does your district need assistance or guidance in writing, developing, or improving its local wellness policy? Try visiting [www.Wellsat.org](http://www.Wellsat.org). The site allows users to complete the Wellness School Assessment Tool (WellSAT) to assess their district's wellness policy and personalized guidance and resources are provided.*



*Important note for personnel in low socioeconomic districts.*

Socioeconomic factors play a role in influencing the nutrition and physical activity of children. For example, some barriers to healthy eating are naturally created when money is scarce, including the relatively high cost of fruits and vegetables compared to less nutritious offerings, such as fast food (Kinra et al., 2000). In addition to being more likely to consume unhealthy food, low income households are also more likely to have insufficient amounts of food, leading to the increased pressure to buy foods high in calories (Kinra et al.). Overall, due to a combination of factors, childhood obesity and low socioeconomic status are highly correlated (Kinra et al.). One study found that prevalence rates of obesity in children from low socioeconomic households were two and a half times higher than the national average (Kinra et al.). The same pattern is true for physical activity. Further, African-American, Hispanic, and female students are less likely than their white male counterparts to participate in recommended amounts of physical activity (Ogden, Carroll, Kit & Flegal, 2012). Taken together, it is easy to see how **nutrition and physical activity have been implicated in the achievement gap. Hence, addressing students' nutrition and physical activity is especially critical for low income districts.**

What can districts do to address wellness and increase student achievement?: Providing answers and addressing common misconceptions

**Schools can implement evidence-based programs and practices to address nutrition education and physical activity.**



*Why evidence-based programs? Are they more work to implement than non-evidence-based programs?*

Evidence-based programs, strategies, and interventions are those that consistently demonstrate significant positive outcomes through rigorous peer-reviewed research and are endorsed by a federal agency or organization. (Kratochwill & Shernoff, 2004; Nelson & Epstein, 2002; Spencer, Detrich, & Slocum, 2012). In schools, the “use of evidence-based interventions has become a hallmark of high-quality professional practice” (Forman, Olin, Hoagwood, Crowe, & Saka, 2008, p. 26). **Utilizing evidence-based interventions in schools is mandated through IDEA (2004) and No Child Left Behind (2002).** Further, evidence-based programs can be cost-effective and also time efficient. For example, their use can decrease the time it would take a school decision-maker to review and assess the literature or create their own program. Evidence-based



programs can also be cost-effective. For example, if a program is evidence-based, then it may save money to implement that program and achieve desired outcomes rather than spend time, money, and additional resources implementing non-evidence-based programs and continue to fail to see desired results. Another benefit to implementing EBPs is that relevant stakeholders may be more likely to support a program if it is evidence-based. Also, there are currently federal funds available to encourage EBP usage as well as task forces and resources for locating EBPs (Domitrovich et al., 2008). (See below for funding sources)

The following is a list of evidence-based programs and strategies that schools can implement to address nutrition education and physical activity. Many schools have already used these programs and practices and had great success. The effects are measurable and observable. These programs will give your district an advantage and are not complex. Descriptions and resource requirements of each program are discussed.

**1. The Child and Adolescent Trial for Cardiovascular Health (CATCH) Program**

3-year nutrition education and physical activity program for elementary students, including *Adventures of Hearty Heart and Friends* for five weeks, followed by the *Go for Health* curriculum, aimed at reducing fat and sodium consumption.

Resource requirements: Contact FLAGHOUSE, 601 Flaghouse Drive, Hasbrouck Heights, NJ 07604. Telephone: (800) 793-7900

Why it's effective: The curriculum targets specific psychosocial factors in eating and physical activity behaviors and also incorporates skill building related to eating behaviors and physical activity patterns. After the program, students showed an increase in both the number of minutes and the proportion of lesson time that they were engaged in vigorous physical activity during PE, without a modification to either the frequency or the duration of lessons.

**2. 5-a-Day Power Plus**

Nutrition education program designed to increase fruit and vegetable consumption

Resource requirements: Contact Gretchen Taylor, MPH, RD, Project Director Minnesota Department of Health, Center for Health Promotion, P.O. Box 64882 St. Paul, MN 55164-0882. Telephone: (651) 281-9818 Fax: (651) 215-8959

Why it's effective: The curriculum promotes consuming at least five servings of fruits and vegetables a day. The program was developed and tested in the school district by the State Health Department in collaboration with the University of Minnesota as part of a four-year research study funded by the National Cancer Institute. The 16-lesson curriculum at each grade level is behaviorally oriented.

**3. We Can (Ways to Enhance Children's Activity and Nutrition)**

Educational program targeted at ages 8-13 and their parents, caregivers, and communities.

Resource requirements: Time to implement different components of We Can. Components can be implemented at school's desired pace. Components can also be implemented in the home setting.

Why it's effective: Nutrition and physical activity education led to increased healthy eating outcomes, increased activity, and decreased TV/video watching.



*Isn't serving nutritious food in schools enough to address the issue of students' nutrition?* Serving healthy foods in schools is definitely a great step towards improving students' nutrition, and public schools should already be doing that as part of the Federal Wellness Policy legislation which required that "all foods available on each school campus under the jurisdiction of the local educational agency during the school day... are consistent with sections 9 and 17 of this Act, and sections 4 and 10 of the Child Nutrition Act of 1966 (42 U.S.C. 1773, 1779); and (B) promote student health and reduce childhood obesity" (Public Law 111-296). However, simply **serving nutritious food is not enough**. Changing the food that is served in school addresses the barrier of availability of healthy foods to eating behaviors, but it does not change individual preferences (Coakley, 2001). Since school-age youth also consume food and make their own consumption choices in settings where unhealthy food is also present, creating knowledge and positive attitudes towards healthy eating is necessary to influence youth to make their own healthy eating choices, leading to improved health for the US population. By doing this, the barriers of lack of nutrition knowledge and negative attitudes towards healthy eating can be removed, and healthy eating behaviors can occur.



*If nutrition education is already incorporated into a school's curriculum, does the district need to consider an evidence-based program?* Less than 33% of schools' nutrition education curriculums impact students' motivation, attitudes, or behaviors (National Center for Education Statistics). Research has found that the amount of time devoted to nutrition education is often insufficient, and time moderated the amount that motivation, attitudes, and behaviors were impacted (Contento, Manning, & Shannon, 1992). Further, the quality and effectiveness of the curriculum can make the difference between stagnant student achievement and improved outcomes.

4. **Lifestyle Education for Activity Program (LEAP)**

LEAP is a 'comprehensive physical activity intervention designed to change the instructional program and school environment to support increased physical activity among girls.' It involves 6 components: Physical Education (PE) classes, health education, school environment, school health services, faculty/staff promotion, and family/community involvement.

Resource requirements: Use time in PE class, openness to adapting PE class; need to designate one staff member as LEAP leader; training for LEAP team

Why it's effective: LEAP incorporates multiple elements, including education, peer modeling, staff modeling, and parent support.

5. **Middle School Physical Activity and Nutrition (M-SPAN)**

An intervention designed to increase physical activity during middle school PE classes.

Resource requirements: The developers offer 1- and 2-day trainings with ongoing consultation.

Why it's effective: Student engagement in moderate-to-vigorous physical activity in PE classes increased by 18%.

6. **Sports, Play, and Active Recreation for Kids (SPARK)**

Physical activity program for ages 4-18 that is targeted to schools and communities.

Resource requirements: Dependent on specific SPARK program that is implemented. Resource requirements can span from adapting a PE class to school-wide initiatives with extensive training.

Why it's effective: After implementing SPARK, students maintained increased rates of physical activity, fitness, sport skills, enjoyment, and academic achievement.

7. **Take 10!**

Physical activity program for ages 5-11 that is targeted to schools and meant to provide brief opportunities for physical movement that are incorporated into content-area subjects. TAKE 10! was designed to integrate grade-specific academic learning objectives with age-appropriate physical activity and link the activity to the learning objective.

Resource requirements: Activity kits are broken down by grade and can be purchased separately for each grade level. The approximate cost is \$80 per grade level. Teacher time to read the materials and incorporate them into the curriculum is also required.

Why it's effective: Short bouts of physical activity have been shown to have health benefits. TAKE 10! helps children understand the importance of fun, physical activity, and other healthful behaviors, including nutrition, while reducing sedentary behavior, improving attention, and promoting structured physical activity breaks during the school day.

## 8. Planet Health

Planet Health is a complete curriculum that helps academic, physical education, and health education teachers guide middle school students in the areas of learning about nutrition and physical activity while building skills in language arts, math, science, and social studies, choosing healthy foods, increasing physical activity, and reducing screen time. Teachers can choose lessons that fit into their curriculum.

Resource requirements: 35 complete, ready-to-use lesson plans and 31 microunits that promote healthy nutrition and activity can be purchased for \$62. Additional training and materials can be purchased for an unspecified price. Teacher time to read the materials and incorporate them into the curriculum is also required.

Why it's effective: Reduces prevalence of obesity and TV-watching in girls, increases fruit and vegetable consumption.



*Will these programs take a lot of time to implement and take away from academics?* Increasing time during the school day for physical activity does not take away from academic performance. Evidence indicates that superintendents and principals can devote school time to physical activity without concern that it will lower student test scores. In fact, if evidence-based programs and practices are implemented, student test scores may increase.



*Do all age levels benefit from nutrition education and physical activity programs?* Yes. For younger children, since they are less likely to select healthy foods on their own, due to innate preference for sweet foods, nutrition education can impact them by beginning to mold attitudes towards food. Hence, nutrition education for this age group is important so that positive attitudes towards healthy foods can be formed by the time children are old enough to make food choices for themselves. Once in high school, youth tend to have more control over what they eat, and can begin to act on the nutrition attitudes they have formed. They can also better understand explanations for physiological, cognitive, and psychological effects of unhealthy consumption as they get older, so continuing to educate them about healthy decisions is vital.

If implementing a full evidence-based program is not currently possible for a district, there are many evidence-based practices that districts can begin using.



*What is an evidence-based practice?* Evidence-based practice is similar to evidence-based interventions and evidence-based programming. Evidence-based programs are simply evidence-based practices that have been grouped together and used to produce a common goal, have a specified purpose, specific program activities, and outcome measures (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005).

### **1. Offer after-school sports, intramurals, clubs, and “open gym” times**

These options provide additional opportunities for students to engage in physical activity. Further, it allows them more flexibility in being able to find an activity that they enjoy.

Resource requirements: Availability of sporting/gym equipment, staff availability for monitoring of students, potential financial cost of paying for staff members' time

Why it's effective: Research shows that GPA is positively associated with extracurricular physical activity. Participation is also linked to decreased high school dropout rates.



To increase enrollment rates and effectiveness of this strategy, provide transportation when these activities are over each day. Set a time for a “late bus” or “activity bus.” Research has shown that by having transportation, the number of students participating in these activities will increase, and their achievement will follow.

### **2. Provide daily physical education (PE)**

Resource requirements: Accommodating students' schedules so that each student receives the opportunity for PE every day.

Why it's effective: PE provides a built-in opportunity for students to engage in their recommended amount (60 minutes) of daily physical activity. When students' activity increases, so do their grades.



*What if a district already offers PE?* Although the majority of states (41) mandate physical education at each grade level, most do not mandate the amount of time that students need to spend in PE. Only 3

states require enough physical education opportunities to meet the recommended amount of time per week that students should engage in physical activity (150 minutes in elementary, 225 in middle and high school) (Burgeson, Wechsler, Brener, Young, & Spain, 2001). Further, physical activity in PE has declined precipitously due to the list of acceptable exemptions increasing, the decline of in-school time dedicated to physical activity, shortened PE periods, and lenient enrollment requirements. A may be fulfilling state requirements with its PE offering, however, it is likely not providing the amount of PE necessary to improve students' achievement.

### **3. Provide daily recess**

According to the CDC and the American Academy of Pediatrics, schools should ensure that all elementary students participate in at least 20 minutes of recess per day, schedule recess before lunch (children eat more nutritiously and create less plate waste), and discourage using or withholding physical activity as a punishment. Recess should also not follow or preclude PE and PE should be provided in addition to recess.

Resource requirements: Playground/gym equipment, safe environment, adequate space, staff supervision

Why it's effective: Research has shown that daily recess is associated with improvements in academic performance, attention, concentration, and on-task classroom behavior. Further, no research has reported negative relationships between daily recess and academic performance, indicating that recess should not be replaced by academic time.

### **4. Implement a staff wellness program and provide staff wellness opportunities**

Staff wellness programs can be as basic as allowing staff access to exercise equipment and facilities at a school, or as advanced as offering specific fitness clubs, providing educational activities for staff on healthy lifestyle behaviors, eating, physical activity, and injury prevention, installing convenient walking tracks or fitness equipment, making arrangements for staff use of public recreation centers or private fitness facilities, applying Federal Wellness Policy guidelines to foods and beverages available to staff in vending machines, prohibiting all tobacco use on school grounds by staff, establishing peer support groups for various issues such as weight management, stress management, tobacco-use cessation, family guidance, and other identified issues, providing time during the school day staff to engage in health-promotion activities, administering flu shots, and providing individual health risk appraisals to staff members.

Resource requirements: Gym equipment, adequate space. Other resources are dependent on specific staff wellness components that are incorporated.

Why it's effective: When staff engage in healthy behaviors (healthy eating, working out) that are visible to students, students become more likely to value and engage in those behaviors.

## 5. Incorporate physical movement inside the classroom

Resource requirements: Time in class

Why it's effective: Studies have found significant positive impacts of programs that target the incorporation of physical activity in the classroom, making it more socially acceptable, convenient, and frequent (Stewart, Dennison, Kohl, & Doyle, 2004). Outcomes indicated that physical activity breaks during standard classroom instruction are associated with improved attention, concentration, on-task behavior, and academic achievement. Further, no research reported negative relationships between physical movement breaks during instruction and academic performance, indicating that physical movement breaks do not hurt academic performance.

## 6. Educate students/families/staff about the importance of physical activity and adequate nutrition

Education can be provided during school in class, in PE, through after-school programs, through before-school programs, or through parent contact (e.g., workshops, mailings). Parent education can be targeted to helping families make healthier choices at home and providing them with resources about the importance of consuming healthy food and engaging in regular physical activity.

Resource requirements: Time during class, time during PE, or time before or after school

Why it's effective: When students' and family's knowledge regarding physical activity is increased, so is their physical activity, physical health, and academic achievement.

### Resources

#### **Alliance for a Healthier Generation**

This website provides resources including videos, printables, website links, and curricula to help you make healthy changes at your school.

<http://school.fueluptoplay60.com/tools/nutrition-education/school-nutrition.php>

#### **USDA Food and Nutrition Service**

This federal website provides resources for understanding the Federal Wellness Policy, nutrition standards, and schools' roles in wellness.

<http://www.fns.usda.gov/school-meals/child-nutrition-programs>

Do you want to investigate **additional evidence-based program possibilities for your district**? There are many more programs and practices than we could list here. Fortunately, there are online databases that contain a list of evidence-based programs. Try one (or both!) of the databases listed below, and simply enter your search criteria ("nutrition," "physical activity," "eating," etc.) to peruse all the possibilities!

- What Works Clearinghouse
  - o <http://ies.ed.gov/ncee/wwc/>
- NREPP - The National Registry of Evidence-based Programs & Practices
  - o <http://www.nrepp.samhsa.gov/>

## References

- Action for Healthy Kids (2005). Executive Summary: Parents' views on school wellness practices, survey conducted in September 2005. Retrieved from <http://www.actionforhealthykids.org/forschools/resources/files/parentsurveyexecsummary.pdf>
- American Psychological Association (2002). *Ethical principles of psychologists and code of conduct*. Washington, DC: Author. Available at <http://www.apa.org/ethics>.
- Averett, S., & Korenman, S. (1996). The economic reality of the beauty myth. *Journal of Human Resources*, 31, 304-330.
- Ballard, K., Caldwell, D., Dunn, C., Hardison, A., Newkirk, J., Sanderson, M., Thaxton, V. S., & Thomas, C. (2005). Move More, NC's Recommended Standards For Physical Activity In School. North Carolina DHHS, NC Division of Public Health. Raleigh, North Carolina.
- Bauman, A. E., Sallis, J. F., Dzewaltowski, D. A., & Owen, N. (2002). Toward a better understanding of the influences on physical activity. *American Journal of Preventive Medicine*, 23 (2), 5-14.
- Belansky, E. S., Cutforth, N., Delong, E., Ross, C., Scarbro, S., Gilbert, L., Beatty, B., & Marshall, J. A. (2009). Early impact of the federally mandated local wellness policy on physical activity in rural, low-income elementary schools in Colorado. *Journal of Public Health Policy*, 30, 141-160. doi: 10.1057/jphp.2008.50
- Benton, D. (2001). The impact of supply of glucose to the brain on mood and memory. *Nutrition Reviews*, 59 (1), 20-21.



- Benton, D. (2004). Role of parents in the determination of the food preferences of children and the development of obesity. *International Journal of Obesity*, 28, 858-869.
- Boynton-Jarrett, R., Thomas, T. N., Peterson, K. E., Wiecha, J., Sobol, A. M., & Gortmaker, S. L. (2003). Impact of television viewing patterns on fruit and vegetable consumption among adolescents. *Pediatrics*, 112 (6), 1321-1326.
- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.
- Brown-Chidsey, R., & Steege, M. W. (2005). *Response to Intervention: Principles and Strategies for Effective Practice*. Guilford Publication.
- Brownson, R. C., Boehmer, T. K., Luke, D. A. (2005). Declining rates of physical activity in the United States: What are the contributors? *Annual Review of Public Health*, 26, 421-443.
- Bryan, J., Osendarp, S., Hughes, D., Calvaresi, E., Baghurst, K. & van Klinken, J. (2004). Nutrients for cognitive development in school-aged children. *Nutrition Reviews*, 62 (8), 295-306.
- Budd, E. L., Schwarz, C., Yount, B. W., & Haire-Joshu, D. (2012). Factors influencing the implementation of school wellness policies in the United States, 2009. *Prevention of Chronic Diseases*, 9, 110-296. doi: 10.5888pcd9.110296
- Burgeson, C. R., Wechsler, H., Brener, N. D., Young, J. C., & Spain, C. G. (2001). Physical education and activity: results from the School Health Policies and Programs Study 2000. *Journal of School Health*, 71, 279-293.

- Caprio, S., Daniels, S. R., Drewnowski, A., Kaufman, F. R., Palinkas, L. A., Rosenbloom, A. L., & Schwimmer, J. B. (2008). Influence of race, ethnicity, and culture on childhood obesity: Implications for prevention and treatment. *Diabetes Care*, 31 (11), 2211-2221. doi: 10.2337/dc08-9024
- Centers for Disease Control and Prevention. (2005). Coordinated school health program. Retrieved from <http://www.cdc.gov/HealthyYouth/CSHP/#7>
- Centers for Disease Control and Prevention. (2011). National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States. Atlanta, GA: U.S. Department of Health and Human Services.
- Centers for Disease Control and Prevention (2007). National Youth Risk Behavior Surveillance. *Annual Review of Public Health*, 26, 421-443.
- Centers for Disease Control and Prevention. (2004). Participation in high school physical education – United States, 1991-2003. *Morbidity and Mortality Weekly Report*, 53, 844-847.
- Centers for Disease Control and Prevention. (2001). School Health Policies and Practices Study 2000. *Journal of School Health*, 71 (7).
- Centers for Disease Control and Prevention. (2003). Youth media campaign longitudinal survey.
- Centers for Disease Control and Prevention. (2009). Youth Risk Behavior Survey – US. Retrieved from <http://www.cdc.gov/mmwr/pdf/ss/ss5905.pdf>
- Chriqui, J. F., Schneider, L., Chaloupka, F. J., Ide, K., & Pugach, O. (2009). Local Wellness Policies: Assessing School District Strategies for Improving Children's Health: School Years 2006-07 and 2007-08. Chicago, IL: Bridging the Gap

Program, Health Policy Center, Institute for Health Research and Policy,  
University of Illinois at Chicago.

Coakley, A. (2001). Healthy eating: Food and diet in low income households.

*Administration*, 49 (3), 87-103.

Contento, I. R., Manning, A. D., & Shannon, B. (1992). Research perspective on school  
based nutrition education. *Journal of Nutrition Education*, 24 (5), 247-260. doi:

10.1016/S00223182(12)81240-4

Cooke, L. J., Wardle, J., Gibson, E. L., Sapochnik, M., Sheilham, A., & Lawson, M.

(2003). Demographic, familial and trait predictors of fruit and vegetable  
consumption by pre-school children. *Public Health Nutrition*, 7 (2), 295-302.

Dale, D. & Corbin, C. B. (2000). Physical activity participation of high school graduates

following exposure to conceptual or traditional physical education. *Research  
Quarterly for Exercise and Sport*, 71, 61-68.

Daniels, S. R., Arnett, D. K., Eckel, R. H., Gidding, S. S., Hayman, L. L., Kumanyika, S.,

Robinson, T. N., Scott, B. J., Jeor, S., & Williams, C. L. (2005). Overweight in  
children and adolescents: Pathophysiology, consequences, prevention, and  
treatment. *Circulation*, 111, 1999-2002.

Department of Education. (2006). Designing schoolwide programs. Retrieved from

[www.ed.gov/policy/elsec/guid/designingswpguid.doc](http://www.ed.gov/policy/elsec/guid/designingswpguid.doc)

Dietz, W. H. (2004). Overweight in childhood and adolescence. *New England Journal of  
Medicine*, 350, 855-857.

Dietz, W. H. (1990). You are what you eat-what you eat is what you are. *Journal of*

*Adolescent Health Care*, 11, 76-81.

Dishman, G. H., & Lee, I. (2012). *Physical Activity Epidemiology, Second Edition*.

Retrieved from <http://www.humankinetics.com>

Domitrovich, C.E., Bradshaw, C.P., Poduska, J.M., Hoagwood, K., Buckley, J.A., Olin, S., et al. (2008). Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Advances in School and Mental Health Promotion, 1* (3), 6-28.

Eaton, D. K., Marx, E., Bowie, S. E. (2007). Faculty and staff health promotion: Results from the school health policies and programs study 2006. *Journal of School Health, 77* (8), 557-566. doi: 10.1111/j.1746-1561.2007.00235.x

Evidence-Based Intervention Work Group. (2005). Theories of change and adoption of innovations: The evolving evidence-based intervention and practice movement in school psychology. *Psychology in the Schools, 42* (5), 475-494. doi: 10.1002/pits.20086

Fedewa, A., & Hoffman, J. (2013). Nutrition and physical activity as protective factors in eliminating the achievement gap. *Communique, 42* (1). Retrieved from <http://www.nasponline.org/publications/cq/42/1/nutrition-and-activity.aspx>

Finkelstein, E. A., Trogon, J. G., Cohen, J. W., & Dietz, W. (2009). Annual medical spending attributable to obesity: payer- and service-specific estimates. *Health Affairs, 28* (5), 822-831.

Fixsen, D. L., Naoom, S.F., Blasé, K.A., Friedman, R.M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida.

- Forman, S., Fagley, N., Steiner, D., & Schneider, K. (2009). Teaching evidence based interventions: Perceptions of influences on professional practice in school psychology. *Training and Education in Professional Psychology, 3* (4), 226-232.
- Forman, S. G., Olin, S., Hoagwood, K. E., Crowe, M., & Saka, N. (2008). Evidence based interventions in schools: Developers' views of implementation barriers and facilitators. *School Mental Health, 1*, 26-36. doi: 10.1007/s12310-008-9002-5
- Freedman, D. S., Zuguo, M., Srinivasan, S. R., Berenson, G. S., & Dietz, W. H. (2007). Cardiovascular risk factors and excess adiposity among overweight children and adolescents: The Bogalusa Heart Study. *Journal of Pediatrics, 150* (1), 12–17.
- Gaines, A. B., Lonis-Shumate, S. R., & Gropper, S. S. (2011). Evaluation of Alabama public school wellness policies and state school mandate implementation. *Journal of School Health, 81*(5), 281-287. doi: 10.1111/j.1746-1561.2011.00588.x.
- Gleason P, Suitor C. Food for thought: children's diets in the 1990s. Princeton, NJ: Mathematica Policy Research, Inc.; 2001.
- Glover, T. A., & DiPerna, J. C. (2007). Service delivery for response to intervention: Core components and directions for future research. *School Psychology Review, 36* (4), 526-540.
- Grunbaum, J. A., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Lowry, R., Harris, W. A., McManus, T., Chyen, D., & Dollins, J. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance—United States, 2003. *Morbidity and Mortality Weekly Report Surveillance Summary, 53*, 1–96.

- Gutkin, T. B. (2002). Evidence-Based interventions in school psychology: State of the art and directions for the future. *School Psychology Quarterly*, 17 (4), 339–340.
- Hammond, R. A., & Levine, R. (2010). The economic impact of obesity in the United States. *Diabetes, Metabolic Syndrome, and Obesity*, 3, 285-295.
- Hedley, A. A., Ogden, C. L., Johnson, C. L., Carroll, M. D., Curtin, L. R., & Flegal, K. M. (2004). Prevalence of overweight and obesity among US children, adolescents, and adults, 1999–2002. *Journal of the American Medical Association*, 291, 2847–2850.
- Horne, P. J., Tapper, K., Lowe, C. F., Hardman, C. A., Jackson, M. C., & Wollner, J. (2004). Increasing children’s fruit and vegetable consumption: A peer-modeling and rewards based intervention. *European Journal of Clinical Nutrition*, 58, 1649-1660.
- Individuals with Disabilities Education Improvement Act, 20 U.S.C. 1400 et seq. (2004).
- Ingraham, C. L. & Oka, E. R. (2006). Multicultural issues in evidence-based interventions. *Journal of Applied School Psychology*, 22, 127-149.
- Justice, L.M. (2006). Evidence-Based Practice, Response to Intervention, and the Prevention of Reading Difficulties. *Language, Speech, and Hearing Services in Schools*, 37, 287-297.
- Katsaiti, M. S. (2012). Obesity and happiness. *Applied Economics*, 44 (31), 4101-4114. doi:10.1080/00036846.2011.587779
- Khan, L. K., Sobush, K., Keener, D., Goodman, K., Lowry, A., Kakietek, J., & Zaro, S. (2009). Recommended community strategies and measurements to prevent obesity in the United States. Centers for Disease Control and Prevention.

- Kinra, S., Nelder, R. P., & Lewendon, G. J. (2000). Deprivation and childhood obesity: A cross sectional study of 20,973 children in Plymouth, United Kingdom. *Journal of Epidemiology and Community Health*, 54, 456-460.
- Kohl, H. W., & Hobbs, K. E. (1998). Development of physical activity behaviors among children and adolescents. *Pediatrics*, 101, 549-555.
- Kratochwill, T.R., & Shernoff, E.S., (2004). Evidence-based practice: Promoting evidence-based interventions in school psychology. *School Psychology Review*, 33 (1), 34-48.
- Lewis, M. K., & Hill, A. J. (1998). Food advertising on British children's television: A contentanalysis and experimental study with nine-year olds. *International Journal of Obesity*, 22, 206-214.
- Linn, S. E. (2004). Food marketing to children in the context of a marketing maelstrom. *Journal of Public Health Policy*, 25 (3-4), 367-378.
- Li, C., Ford, E. S., Zhao, G., & Mokdad, A. H. (2009). Prevalence of pre-diabetes and its association with clustering of cardiometabolic risk factors and hyperinsulinemia among US adolescents. *Diabetes Care*, 32, 342-347.
- Longley, C. H., & Sneed, J. (2009). Effects of federal legislation on wellness policy formation in school districts in the United States. *Journal of the American Dietetic Association*, 101 (1), 95-101.
- Lowe, C. F., Horne, P. J., Tapper, K., Bowdery, M., & Egerton, C. (2004). Effects of peer modeling and rewards-based intervention to increase fruit and vegetable consumption in children. *European Journal of Clinical Nutrition*, 58, 510-522.

- Marx, E., & Northrop, D. (1995). *Educating for health*. Newton, MA: Education Development Center, Inc.
- Moag-Stahlberg, A., Howley, N., & Luscari, L. (2008). A national snapshot of local school wellness policies. *Journal of School Health*, 78 (10), 562-568.
- Moe, S. G., Pickrel, J., McKenzie, T. L., Strikmiller, P. K., Coombs, D., & Murrie, D. (2006). Using school-level interviews to develop a multisite PE intervention program. *Health Education & Behavior*, 33, 52–65.
- National Association for Sport and Physical Education, American Heart Association. (2006). Shape of the Nation Report: Status of Physical Education in the USA. Reston, Va: National Association for Sport and Physical Education.
- National Association of School Psychologists. (2010). Principles for Professional Ethics.
- National Association of State Boards of Education (2013). Physical Education: State School Health Policy Database. Retrieved from [http://www.nasbe.org/healthy\\_schools/hs/bytopics.php?topicid=1110](http://www.nasbe.org/healthy_schools/hs/bytopics.php?topicid=1110)
- National Center for Health Statistics. (2011). Health, United States, 2011: With Special Features on Socioeconomic Status and Health.
- Nelson, R.J., & Epstein, M.H. (2002). Report on evidence-based interventions: Recommended next steps. *School Psychology Quarterly*, 17 (4), 493-499.
- No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).
- Northstone, K., Emmett, P., Nethersole, F., & the ALSPAC Study Team (2001). The effect of age of introduction to lumpy solids on foods eaten and reported feeding difficulties at 6 and 15 months. *Journal of Human Nutrition Dietetics*, 14, 43-54.



- Office of the Surgeon General. (2010). The Surgeon General's Vision for a Healthy and Fit Nation.
- Ogden, C. L., Carroll, M. D., Kit, B. K., Flegal, K. M. (2012). Prevalence of obesity and trends in body mass index among US children and adolescents. *Journal of the American Medical Association*, 307 (5), 483-490.
- Owen, N., Glanz, K., Sallis, J. F., & Kelder, S. H. (2006). Evidence-based approaches to dissemination and diffusion of physical activity interventions. *American Journal of Preventative Medicine*, 31, 35-44.
- Pate, R. R., Davis, M. G., Robinson, T. N., Stone, E. J., McKenzie, T. L., & Young, J. C. (2006). Promoting physical activity in children and youth. *Circulation*, 114, 1214-1224. doi: 10.1161/CIRCULATIONAHA.106.177052
- Perry, C. L., Bishop, D. B., Taylor, G. L., Davis, M., Story, M., Gray, C., Bishop, S. C., Warren, Mays, R. A., Lytle, L. A., & Harnack, L. (2004). A randomized school trial of environmental strategies to encourage fruit and vegetable consumption among children. *Health Education and Behavior*, 31 (1), 65-76.
- Pickett, K., Kelly, S., Brunner, E., Lobstein, T., & Wilkinson, R. (2005). Wider income gaps, wider waistbands? An ecological study of obesity and income inequality. *Journal of Epidemiological Community Health*, 59 (8), 670-674. doi: 10.1136/jech.2004.028795
- Probart, C., McDonnell, E., Weirich, J. E., Schilling, L., & Fekete, V. (2008). Statewide assessment of local wellness policies in Pennsylvania public school districts. *Journal of the American Dietetic Association*, 108 (9), 1497-1502. doi: 10.1016/j.jada.2008.06.429.

Resnick, E. A., Rinkus, L., Slater, S. J., Barker, D. C., Quinn, C. M., & Chaloupka, F. J.

(n.d.). *Factors that influence teens' eating and physical activity behaviors:*

*Findings from telephone focus groups* [PowerPoint Slides]. Retrieved from

[http://www.impactteen.org/generalarea\\_PDFs/Resnick\\_APHA\\_focusgroups.pdf](http://www.impactteen.org/generalarea_PDFs/Resnick_APHA_focusgroups.pdf)

Ringeisen, H., Henderson, K., & Hoagwood, K. (2003). Context matters: Schools and the

“Research to Practice Gap” in children’s mental health. *School Psychology*

*Review*, 32 (2), 153-168.

Rogers, E. M. (2003). *Diffusion of Innovations (Fifth Edition)*. New York: Free Press.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, 32 (5), 963-975.

Schwartz, M. B., Novak, S. A., & Fiore, S. S. (2009). The impact of removing snacks of low nutritional value from middle schools. *Health Education & Behavior*, 36 (6), 999-1010. doi: 10.1177/1090198108329998

Shape of the Nation Report: Status of Physical Education in the USA (2012). National Association for Sport and Physical Education and American Heart Association. Retrieved from

<http://www.aahperd.org/naspe/publications/Shapeofthenation.cfm?cid=00007>

Shephard RJ. (1997). Curricular physical activity and academic performance. *Pediatric Exercise Science*, 9 (2), 113–126.

Spencer, T.D., Detrich, R., & Slocum, T.A. (2012). Evidence-based Practice: A framework for making effective decisions. *Education and Treatment of Children*, 35 (2), 127-151.

- Stewart, J. A., Dennison, D. A., Kohl, H. W., & Doyle, J. A. (2004). Exercise level and energy expenditure in the Take 10! in-class physical activity program. *Journal of School Health, 74*, 397–400.
- Strong, W. B., Malina, R. M., Blimkie, C. J. R., Daniels, S. R., Dishman, R. K., Gutin, B., Hergenroeder, A. C., et al. (2005). Evidence based physical activity for school age youth. *Journal of Pediatrics, 146*, 732-737.
- The Health Communication Unit. (2001). Introduction to health promotion program planning, Version 3.0. Retrieved from [www.thcu.ca](http://www.thcu.ca)
- Thibault, I., & Marquis, M. (2006). Nutrition education in schools. *Canadian Journal of Dietary Practice Research, 67* (4), 202-205.
- Thorpe, K. E., Florence, C. S., Howard, D. H., & Joski, P. (2004). The impact of obesity on rising medical spending. *Health Affairs, 4*, 480-485.
- Trost, S. (2007). *Active Education: Physical Education, Physical Activity and Academic Performance*. San Diego, CA: Active Living Research.
- USDA Food Nutrition Service (2013). Annual Survey of Food and Nutrition Service Programs. Retrieved from [www.fns.usda.gov/pd/annual.htm](http://www.fns.usda.gov/pd/annual.htm)
- USDA National School Lunch Program (2011). National School Lunch Program Fact Sheet. Retrieved from <http://www.fns.usda.gov/cnd/lunch/AboutLunch/NSLPFactSheet.pdf>
- USHHS, Healthy People 2020. (2010). Healthy People 2020 Framework. Retrieved from <http://www.healthypeople.gov/2020/about/default.aspx>
- US HHS Division of Adolescent and School Health (DASH), National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for

- Disease Control and Prevention (CDC). (2008). *Physical Activity and the Health of Young People*. Retrieved from [www.cdc.gov/HealthyYouth/physicalactivity/pdf/facts.pdf](http://www.cdc.gov/HealthyYouth/physicalactivity/pdf/facts.pdf)
- US HHS MMWR (2003). Physical Activity Levels Among Children Aged 9-13 Years, United States, 2002. Retrieved from [www.cdc.gov/mmwr/preview/mmwrhtml/mm5233a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5233a1.htm)
- Viner, R. M., & Cole, T. J. (2005). Adult socioeconomic, educational, social, and psychological outcomes of childhood obesity: A national birth cohort study. *British Medical Journal*, 330, 1354-1360. doi: <http://dx.doi.org/10.1136/bmj.38453.422049.E0>
- Westenhoefer, J. (2001). Establishing good dietary habits – capturing the minds of children. *Public Health Nutrition*, 4 (1A), 125-129.
- White, J. L., & Kratochwill, T. R. (2005). Practice guidelines in school psychology: Issues and directions for evidence-based interventions in practice and training. *Journal of School Psychology*, 43, 99-115. doi:10.1016/j.jsp.2005.01.001
- World Health Organization (2000). *Nutrition for health and development*, Geneva: World Health Organization.

## Appendix A

### Child Nutrition and WIC Reauthorization Act of 2004 Section 204 of Public Law 108-265 LOCAL WELLNESS POLICY

(a) IN GENERAL - Not later than the first day of the school year beginning after June 30, 2006, each local education agency participating in a program authorized by the Richard B. Russell National School Lunch Act (42 U.S.C.1751 et seq.) or the Child Nutrition Act of 1966 (42 U.S.C. 1771 et seq.) shall establish a local school wellness policy for schools under the local educational agency that, at a minimum—

1) Includes goals for nutrition education, physical activity and other school- based activities that are designed to promote student wellness in a manner that the local educational agency determines is appropriate; 2) Includes nutrition guidelines selected by the local educational agency for all foods available on each school campus under the local educational agency during the school day with the objectives of promoting student health and reducing childhood obesity; 3) Provides an assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture pursuant to subsections (a) and (b) of section 10 of the Child Nutrition Act (42 U.S.C. 1779) and section 9(f)(1) and 17(a) of the Richard B Russell National School Lunch Act (42 U.S.C. 1758(f)(1), 1766(a)0, as those regulations and guidance apply to schools; 4) Establishes a plan for measuring implementation of the local wellness policy, including designation of 1 or more persons within the local educational agency or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy; and 5) Involves parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the Development of the school wellness policy.

(b) TECHNICAL ASSISTANCE AND BEST PRACTICES. -

(1) IN GENERAL. - The Secretary, in coordination with the Secretary of Education and in consultation with the Secretary of Health and Human Services, acting through the Centers for Disease Control and Prevention, shall make available to local educational agencies, school food authorities, and State educational agencies, on request, information and technical assistance for use in—(A) Establishing healthy school nutrition environments; (B) Reducing childhood obesity; and (C) Preventing diet-related chronic diseases.

(2) CONTENT. - Technical assistance provided by the Secretary under this subsection shall—(A) Include relevant and applicable examples of schools and local educational agencies that have taken steps to offer healthy options for foods sold or served in schools; (B) Include such other technical assistance as is required to carry out the goals of promoting sound nutrition and establishing healthy school nutrition environments that are consistent with this section; (C) Be provided in such a manner as to be consistent with the specific needs and requirements of local educational agencies; and (D) Be for guidance purposes only and not be construed as binding or as

a mandate to schools, local educational agencies, school food authorities, or State educational agencies.

(3) FUNDING. – (A) IN GENERAL. – On July 1, 2006, out of any funds in the Treasury not otherwise appropriated, the Secretary of the Treasury shall transfer to the Secretary of Agriculture to carry out this subsection \$4,000,000, to remain available until September 30, 2009. (B) RECEIPT AND ACCEPTANCE. –

The Secretary shall be entitled to receive, shall accept, and shall use to carry out this subsection the funds transferred under subparagraph (A), without further appropriation.

## Appendix B

### Healthy, Hunger-Free Kids Act of 2010 Section 204 of Public Law 111-296 LOCAL WELLNESS POLICY

#### SEC. 204. LOCAL SCHOOL WELLNESS POLICY IMPLEMENTATION.

(a) IN GENERAL.—The Richard B. Russell National School Lunch Act is amended by inserting after section 9 (42 U.S.C. 1758) the following:

“SEC. 9A. LOCAL SCHOOL WELLNESS POLICY.

(a) IN GENERAL.—Each local educational agency participating in a program authorized by this Act or the Child Nutrition Act of 1966 (42 U.S.C. 1771 et seq.) shall establish a local school wellness policy for all schools under the jurisdiction of the local educational agency.

(b) GUIDELINES.—The Secretary shall promulgate regulations that provide the framework and guidelines for local educational agencies to establish local school wellness policies, including, at a minimum,— “(1) goals for nutrition promotion and education, physical activity, and other school-based activities that promote student wellness; “(2) for all foods available on each school campus under the jurisdiction of the local educational agency during the school day, nutrition guidelines that— “(A) are consistent with sections 9 and 17 of this Act, and sections 4 and 10 of the Child Nutrition Act of 1966 (42 U.S.C. 1773, 1779); and (B) promote student health and reduce childhood obesity; “(3) a requirement that the local educational agency permit parents, students, representatives of the school food authority, teachers of physical education, school health professionals, the school board, school administrators, and the general public to participate in the development, implementation, and periodic review and update of the local school wellness policy; “(4) a requirement that the local educational agency inform and update the public (including parents, students, and others in the community) about the content and implementation of the local school wellness policy; and “(5) a requirement that the local educational agency— “(A) periodically measure and make available to the public an assessment on the implementation of the local school wellness policy, including— “(i) the extent to which schools under the jurisdiction of the local educational agency are in compliance with the local school wellness policy; “(ii) the extent to which the local school wellness policy of the local educational agency compares to model local school wellness policies; and “(iii) a description of the progress made in attaining the goals of the local school wellness policy; and “(B) designate 1 or more local educational agency officials or school officials, as appropriate, to ensure that each school complies with the local school wellness policy. “

(c) LOCAL DISCRETION.—The local educational agency shall use the guidelines promulgated by the Secretary under subsection (b) to determine specific policies appropriate for the schools under the jurisdiction of the local educational agency.

(d) TECHNICAL ASSISTANCE AND BEST PRACTICES.— (1) IN GENERAL.—The Secretary, in consultation with the Secretary of Education and the Secretary of Health and Human Services, acting through the Centers for Disease Control and Prevention, shall provide information and technical assistance to local educational agencies, school food authorities, and State educational agencies for use in establishing

healthy school environments that are intended to promote student health and wellness.

“(2) CONTENT.—The Secretary shall provide technical assistance that— “(A) includes resources and training on designing, implementing, promoting, disseminating, and evaluating local school wellness policies and overcoming barriers to the adoption of local school wellness policies; “(B) includes model local school wellness policies and best practices recommended by Federal agencies, State agencies, and nongovernmental organizations; “(C) includes such other technical assistance as is required to promote sound nutrition and establish healthy school nutrition environments; and

“(D) is consistent with the specific needs and requirements of local educational agencies.

“(3) STUDY AND REPORT.— (A) IN GENERAL.—Subject to the availability of appropriations, the Secretary, in conjunction with the Director of the Centers for Disease Control and Prevention, shall prepare a report on the implementation, strength, and effectiveness of the local school wellness policies carried out in accordance with this section. “(B) STUDY OF LOCAL SCHOOL WELLNESS POLICIES.— The study described in subparagraph (A) shall include— “(i) an analysis of the strength and weaknesses of local school wellness policies and how the policies compare with model local wellness policies recommended under paragraph (2)(B); and “(ii) an assessment of the impact of the local school wellness policies in addressing the requirements of subsection (b). (C) REPORT.—Not later than January 1, 2014, the Secretary shall submit to the Committee on Education and Labor of the House of Representatives and the Committee on Agriculture, Nutrition, and Forestry of the Senate a report that describes the findings of the study. (D) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this paragraph \$3,000,000 for fiscal year 2011, to remain available until expended.”. (b) REPEAL.—Section 204 of the Child Nutrition and WIC Reauthorization Act of 2004 (42 U.S.C. 1751 note; Public Law 108–265) is repealed.



## Appendix C

### Recruitment Phone Call

Hi, my name is Brooke Zumas. I am a doctoral student in the Graduate School of Applied and Professional Psychology at Rutgers University. As part of my doctoral degree requirements, I am completing a dissertation that involves conducting a study related to schools. The purpose of this study is to examine the barriers to utilizing evidence-based programs and strategies to address the Federal Wellness Policy's nutrition education and physical activity components, as well as to understand what information contained in a resource guide about the Federal Wellness Policy would be most helpful to school decision-makers.

To participate in this study, you must currently hold, or have previously held, a position at a public school in an Administrator capacity. This study will involve talking on the phone with me and answering questions about your experiences for approximately 20 minutes. There is no financial compensation for your participation.

If you think you may be interested in participating, I can provide more information now, or we can arrange a more convenient time that I can reach you again by phone to provide you more information, or you may choose not to participate and I will not contact you further.

## Appendix D

## Oral Assent Script

You are invited to participate in a research study that is being conducted by Brooke Zumas, who is a Graduate Student in the School Psychology Doctoral Program in the Graduate School of Applied and Professional Psychology at Rutgers University. The purpose of this research is to determine the implementation barriers to addressing the Federal Wellness Policy's nutrition education and physical activity components, and the barriers to utilizing evidence-based programs and strategies in that approach, from the perspective of a public school administrator. Participation in this study will involve a direct phone interview with questions regarding your experience, opinions, and knowledge of the Federal Wellness Policy and evidence-based programs and strategies. The procedure will include a phone interview with 22 questions and last approximately 20 minutes.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth, etc. If you agree to take part in the study, you will be assigned a random code number that will be used on each record. Your name will appear only on a list of subjects, and will not be linked to the code number that is assigned to you. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for 3 years (March 1, 2017).

There are no foreseeable risks to participation in this study. In addition, you may receive no direct benefit from taking part in this study.

Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

If you have any questions about the study or study procedures, you may contact me at:

Rutgers, the State University of New Jersey  
Graduate School of Applied and Professional Psychology  
152 Frelinghuysen Road, Busch Campus  
Piscataway, NJ 08854  
Phone: (610) 657-5821  
Email: Brooke.Zumas@gmail.com

Or you can contact my advisor, Ken Schneider, at:

Rutgers, the State University of New Jersey  
Graduate School of Applied and Professional Psychology

152 Frelinghuysen Road, Busch Campus  
Piscataway, NJ 08854  
Phone: 848-445-3915x53915  
Email: [schneid@rci.rutgers.edu](mailto:schneid@rci.rutgers.edu)

If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University, the State University of New Jersey  
Institutional Review Board for the Protection of Human Subjects  
Office of Research and Sponsored Programs  
3 Rutgers Plaza  
New Brunswick, NJ 08901-8559  
Tel: 848-932-0150  
Email: [humansubjects@orsp.rutgers.edu](mailto:humansubjects@orsp.rutgers.edu)

You will be given a copy of this assent form for your records.

By participating in this study/these procedures, you agree to be a study subject.

## Appendix E

### Interview Questions

1. What is your position in the school? How long have you worked in education?  
What is the highest degree you have obtained?
2. Have you heard of the Federal Wellness Policy? You may have also heard it referred to as the Child Nutrition Act or the Healthy, Hunger-Free Kids Act.  
If answer “yes”: How have you learned about the Federal Wellness Policy?  
If answer “no”: Do not administer Items 9 and 15.
3. Have you heard the term “evidence-based program”?
4. Is your school currently implementing or have they recently implemented any evidence-based programs?  
If answer “yes”: If so, what program(s)?
5. Is your school currently implementing or have they recently implemented any evidence-based programs related to nutrition education?  
If answer “yes”: If so, what program(s)?
6. Is your school currently implementing or have they recently implemented any evidence-based programs related to physical activity?  
If answer “yes”: If so, what program(s)?
7. Is your school currently collecting or have they recently collected any data regarding students’ nutrition or eating behaviors?  
If answer “yes”: If so, what are the data variables?
8. Is your school currently collecting or have they recently collected any data regarding students’ physical activity?  
If answer “yes”: If so, what are the data variables?
9. Who has been the decision-maker in terms of deciding how the school will adhere to the Federal Wellness Policy?
10. How knowledgeable do you feel regarding evidence-based nutrition education and physical activity programs?
11. Have you ever received training on evidence-based programs?  
If answer “yes”: When were you trained? What were you trained in?
12. Have you ever received training on the implementation of evidence-based programs?  
If answer “yes”: When were you trained? What were you trained in?
13. What is your attitude regarding implementation of evidence-based nutrition education and physical activity programs?
14. Do you ever become frustrated from issues related to evidence-based programs or their implementation in the school?  
If answer “yes”: If so, what other feelings do you experience and why?
15. Did your school utilize resources to write their local wellness policy?  
If answer “yes”: If so, what resources did your school utilize to write their local wellness policy?
16. Where are you most likely to access wellness program information from?

17. What have been the major obstacles or hindrances encountered when introducing the program in schools? (Forman, Olin, Hoagwood, Crowe, & Saka, 2008)
18. What have been the major factors that have made implementation efforts related to the program successful? (Forman, Olin, Hoagwood, Crowe, & Saka, 2008)
19. What barriers keep you from implementing evidence-based nutrition education and physical activity programming?
20. If a resource guide could address those barriers, would you use it?
21. What components in a resource guide would make you more likely to use it?
22. What information contained in a resource guide could help make your experience with evidence-based implementation of nutrition education and physical activity programs easier?