2022

How Teachers Support Students' Nutrition and Healthy Choices to Reduce Childhood Obesity

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This is to certify that the doctoral study by

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Walden University
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Abstract

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Angela Denise Munns

MA, University of Arkansas, 1987

BS, Arkansas State University, 1977

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Educational Leadership

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Abstract

Obesity is an issue that negatively effects the health and wellbeing of children across the U.S. The problem addressed by this study was the increasing percentage of obesity among elementary students in a southeastern school district. Guided by Bandura's social learning theory, the purpose of this basic qualitative study was to explore the perceptions of elementary teachers about increasing student obesity and the challenges they faced in teaching students about health issues in the local school setting. Ten elementary teachers who had knowledge of nutrition and awareness of the student obesity and overweight issues at the study site participated in semistructured interviews. Data were analyzed using inductive, open coding to identify themes. Six themes emerged: (a) students are overweight and need nutrition instruction, (b) teachers are vital for modeling and empowering students to make healthy choices for lifelong impact, (c) teachers use various strategies to teach students health and nutrition, (d) school influence relates to providing free and healthy choices in the cafeteria, (e) schools need to involve and educate parents regarding nutrition, (f) teachers need resources, specifically for a garden. Findings suggest that teachers and school communities are an integral part of supporting student health and wellness aimed at overcoming childhood obesity. As a result, positive social change can occur by capitalizing on the critical role of the school community in educating students about nutrition through embedding health and wellness concepts into the school day, thereby empowering students with the knowledge and skills they need to lead a healthier lifestyle for a lifetime.

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Dedication

I dedicate this dissertation to my children, Malikah Munns and Jaala Smith; my sisters, Pearlean Traylor and Earlean Hay; and my brother-in-law, George Traylor, for their fantastic support throughout my doctorate program. I also dedicate this page to the memory of my parents, William and Lacenie Lockhart; my brother, James Lockhart; and my brother-in-law, Thomas Hay, who taught me to never give up on my dreams. Apostle Ruby Green encouraged me all the way. To God be the Glory.

Acknowledgments

I wish to thank my committee members who led and guided me through this process. They were generous with their precious time and expertise. Special appreciation goes to my committee chairs, Dr. Cathryn Walker and Dr. C. M. Jameson, for their support, prompt feedback, encouragement, patience, and countless hours of telephone conversations and e-mails. I also want to thank Dr. Andrea Wilson for agreeing to serve on my committee; her prompt feedback and flexible discussions were appreciated. My appreciation also goes to my URR committee member, Dr. Nicolae Nistor, and Mrs. S. Burgess. Finally, I would like to thank my cousin Dr. C. Jones, who gave me the idea for the research.

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Chapter 1: Introduction to the Study

Being overweight or obese affects people of different ages, backgrounds, and cultures. It is a leading health problem in the United States and throughout the world (Phillips et al 2012). In 2003, the General Assembly of Arkansas passed Act 1220, enacting the first state-level legislation in the country to address the alarming rate of childhood overweightness and obesity (Arkansas Act of 1220, 2003; Arkansas Center for Health Improvement [ACHI], 2018; Chaloupka, 2011; Ryan et al., 2006). The purpose of this study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. According to ACHI (2018), 22.2% of students in Arkansas were obese during the 2017-2018 school year and 17.2% of the students overweight.

Overweight and obesity in children can lead to a high probability of health-related issues, poor self-esteem, and poor school performance (Skogen & Hoydal, 2021). According to Skogen and Hoydal (2021), overweight or obese children not only have a higher chance of becoming overweight or obese adults, but also can develop life-threatening health problems. Increased knowledge of nutrition, exercising, and healthy eating may lead to healthier food choices, lifestyles, and adulthood.

In this study, I examined the perceptions of teachers about supporting student obesity and challenges they face in teaching students about health issues. I interviewed teachers about practices of teaching nutrition from an elementary school in a school district in a southeastern state where nutrition education activities have been implemented. I examined how these teachers presented nutrition and exercise information

to elementary school students to determine how they support reducing childhood obesity and making healthy choices. By making students aware of the health consequences associated with being overweight or obese through education, behaviors that result in obesity could be changed at an early age, leading to longer and healthier lives (Sanyaolu et al., 2019).

In Chapter 1, I discuss the background of the problem, describe the problem, and introduce the gap in practice that is supported by the scholarly literature. I describe the purpose, research questions, conceptual framework, nature of the study, assumptions, scope and delimitations, and limitations. I also describe the significance of the study and summarize the chapter.

Background of the Problem

Since the 1970s, childhood overweight and obesity have been reaching epidemic levels (Haegele et al., 2020). Haegele et al. (2020) reported National Survey of Children Health data provided current estimates of the prevalence of overweight among youth and reached high levels, leading to chronic conditions. According to Haegele et al., educators, parents, legislators, and health care providers have become alarmed by the high numbers of overweight and obese children. In the 2017-2018 school year, one third of adults and 22.2% of youth in Arkansas were obese (ACHI, 2018). In the 2020-2021 school year, 26% of Arkansas youth were obese (ACHI, 2022). Therefore, exploring perceptions of teachers about the increasing student obesity and challenge they face in teaching students about health issues was needed. Such research would yield data to fill a gap in practice

related to strategies used to address the challenges of childhood overweight and obesity. The gap in practice is supported by the literature (see Pastor & Tur, 2020).

Health care providers and educators have implemented many programs to promote exercise and diet in schools, hospitals, and institutions. Strategies include implementing education nutritional programs, making public service announcements, promoting lower consumption of sugar, advocating more fruit and vegetable consumption, and encouraging people to follow healthier diets (Cotton et al., 2020). Haegele et al. (2020) described efforts to communicate the connection of obesity to chronic illness and to pass new environmental support policies in the legislature at changing nutritional behaviors to improve the rate of obesity. King-Mark (2016) concluded that individuals must change their practices and attitudes regarding healthy nutrition and increase physical activity to reverse the problem of overweight and obesity.

Efforts to change the tide of childhood overweight problems are ongoing. For example, Backstrom (2020) highlighted the focus of former First Lady Michelle Obama to decrease rates of childhood overweight and obesity through teaching kids about making healthier choices and planting gardens. Arango (2017) added that science is a great subject to incorporate nutrition because of all chemical reactions that take place to grow food and to digest food. Also, Arango asserted that math is a great subject to incorporate nutrition because mathematical equations are necessary when calculating necessary calories and food group intake and measuring ingredients when cooking. Teachers may use self-efficacy to teach nutrition and health embedded into the curriculum, teaching such lessons as math through measurement; writing through

journals, essays, or poems about cultivating a garden; and learning about health through science and the nutritional values of a garden (Arango, 2017).

Some experts have suggested state legislatures need to pass laws to create a culture for learning healthy choices. Ryan et al. (2006) noted, "Drawing upon expertise from the arenas of public health, clinical science, and public policy, [Arkansas]implemented innovative legislation to combat childhood obesity by creating healthier public-school environments" (p. 992). Maybe, if laws were passed to improve on diets and healthier choices of foods in schools, then students would adopt a healthier lifestyle.

By looking at the results of these policies, legislators could determine if individual-level interventions are worth continuing. The Writing Group for the National Collaborative on Childhood Obesity Research (2018) asserted that the financial burdens connected with weight problems had stirred health policies. Arango (2017) stated that the Healthy Schools Act of 2010 established health education requirements, such as students in kindergarten through Grade 8 taking 75 minutes of health education per week, including nutrition education. With that information, public school personnel may be able to help combat childhood overweight and obesity and give students a brighter future.

Problem Statement

The problem addressed by this study was the increasing percentage of obesity among elementary students in a southeastern school district. In this study, I explored perceptions of teachers about increasing student obesity and challenges they face in teaching students about health issues. The problem is nationwide as well. In the United

States, children consume large portions of food, are often unfamiliar with the content of the food, may not read labels for content, and exercise inadequately. As a result, overweight and obesity are on the rise (Coccia et al., 2020). Childhood obesity not only harms children but also often leads to them becoming overweight and obese adults. In the 2017-2018 school year, 1,029 out of 1,047 schools in 256 of 263 southeastern school districts constituted valid measurements of the statewide body mass index (BMI) assessments. The risk factors for BMI assessments are the following: overweight ranges from 25 to 29.9, and obesity is a BMI of 30.0 and above (ACHI, 2018). Women's waist circumference considered overweight consists of 35 inches and above and for men 40 inches and higher. In the Arkansas sample population, 22.9% of males were obese as well as 21.5%of females (ACHI, 2018). The overweight category included 18% of females and 16% of males (ACHI,2018). Considering ethnicity as a potential risk factor, the highest obesity and overweight risk was found in Hispanic boys, with 51.6% overweight or obese, followed by Hispanic girls at 48.4% and African American girls at 46.9% (ACHI, 2018).

According to Sanyaolu et al. (2019), obesity increases the risk of some health conditions, including hypertension, adverse lipid concentrations, and Type 2 diabetes. By looking at the assessments from the ACHI (2018, 2019, 2020, 2022) in Table 1, students at the study school and district continued to show high rates of overweight and obesity. Along with these conditions, children are developing heart disease and high cholesterol. Although federal health agencies have declared a commitment to reducing overweight and obesity, much more needs to be done (Sanyaolu et al., 2019). The study elementary

school is in a southeastern school district. At the elementary study site, 35% through 53% of the student population were found to be obese and overweight between 2017 and 2022 (ACHI, 2017-2021). The percentage of obese and overweight students in the study district ranged from 37% to 44% of the school-age student population (ACHI, 2017-2022). For the last 4 years, the percentage of obese and overweight students at the study site has exceeded the percentage of obese and overweight students in the study district explored the how stakeholders describe the current situation with respect to teaching students about obesity and about the challenges they face with respect to teaching students about health and weight loss issues. Table 1 indicates the percentages of overweight and obese students in the school and district, according to the ACHI (2018, 2019, 2020, 2022). Annually, the school nurse measures students' BMI and monitors the BMI for the campus as part of a state mandate through Act 1220 (ACHI, 2022). The overweight student population and obesity among students are a focus of the study site health care practitioners, leaders and educators (Administrator, personal communication July 2022).

Table 1

Percentages of Overweight and Obese Students in the Study District and Elementary School for 4 School Years

School year	Overweight	Obese	Combined overweight & obese
Study elementary school			
2020-2021	25.4	27.9	53.3
2019-2020	12.8	25.5	38.3
2018-2019	19.8	21.6	41.4
2017-2018	12.8	22.6	35.4
Study school district			
2020-2021	18.0	25.5	43.5
2019-2020	15.6	19.8	35.4
2018-2019	18.0	19.6	37.6
2017-2018	17.5	19.3	36.8

Note. Data from annual report from the Arkansas Center for Health Improvement, Body Mass Index Program, https://bmi.achi.net/Pages/SchoolPersonnel/BMIProgram.aspx

Purpose of the Study

The purpose of the study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. The instruments used to collect data were semistructured interviews with teachers who support students who struggle with weight and healthy nutrition choices. By exploring teachers' knowledge, specific needs could be identified and addressed in future professional development to support teachers' understanding of nutrition and exercise as well as discourse practices to improve students' health and lifestyle.

In this study, the findings include teachers' self-perception as a role model for childhood overweight and obesity for improving health. Knowledge of nutrition and

exercise affects childhood overweight and obesity, as indicated by King-Mark (2016). The evidence has suggested that knowledge of nutrition and exercise can be taught and transferred in the schools through the self-efficacy theory of motivation, according to Cherry (2020). Cherry stated that the method of motivation includes experience, vicarious experience, social persuasion, and physiological feedback. Teachers can teach students real-life skills such as how to read labels, how to measure food portions, and when and how often to exercise. These tools help improve health for everyone. Results from this study may allow educators an opportunity to revisit, reinvent, recreate, and revitalize education. Through knowledge, self-efficacy, and social learning, teachers can show, tell, and model how important nutrition and exercise are to a healthier lifestyle.

An understanding of teachers' knowledge of nutrition and exercise may increase understanding of how public schools can reduce childhood overweight and obesity. The rationale for this study was to determine teachers' perceptions of their ability to teach nutrition as part of the curriculum to elementary school students. Information could inform future professional development or curriculum to help reduce the percentages of children categorized as overweight or obese.

Research Questions

Two research question guided this study:

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Conceptual Framework

The phenomenon I explored in this study is the increasing percentage of students who qualify as obese and overweight at an elementary school study site in a southeastern

state. I specifically investigated how elementary teachers describe their situation regarding obese and overweight students and how they perceive the challenges regarding teaching students about health and weight issues. From a social learning theory perspective, I explored the phenomenon of how teachers described their situation involving instructing obese and overweight students and also how they perceived the challenges of this providing instruction to this population.

The conceptual framework of this study was Bandura's (1969) social learning theory. Bandura social learning theory is often applied in studies of individual behavior to clarify interactions among personal factors, environmental factors and behavior (Bandura, 1977). Bandura's three concepts that form the basis for social learning theory are observation, imitation, and modeling. Bandura suggested that individuals learn behaviors by observing and imitating the behavior of others in social settings. Bandura considered that human behavior is learned through observation, modeling, observing others, and then developing thoughts related to how to engage in or how to mimic the new learning. The information acquired is coded and then later the coded information is used as a guide for action (see Bandura, 1977). According to Bandura, through the social learning theory, individuals engage in new behaviors that are acquired by observing and imitating others. Researchers have used social learning theory to explore nutrition (Utz et al., 2006).

Bandura (1986) viewed individuals as people who are driven to engage and interact with one another. Bandura believed that "individuals are social beings who thrive on social interactions through dialogue and observation," (Botes et al., 2022, p. 59).

Bandura (1986) contended that individuals learn through interaction with others and through observing others in social settings. In a qualitative case study by Botes et al. (2022), Bandura's social learning theory was used to examine the preservice teachers' perceptions related to lesson study development using a collaborative dialogue with the participants. The findings were that the use of collaborative dialogue increased engagement, supported teacher development and was reflective of Bandura's social learning theory attributes. Botes et al. concluded that Bandura's social learning theory supports "open dialogue, self-efficacy, team collaboration, and critical self-reflection" (p. 66). Other researchers have emphasized that teachers are central figures in promoting students understanding of nutrition and a healthy lifestyle and that they are qualified to do so (Cotton et al., 2020). By exploring teachers' descriptions and challenges of student obesity, health and weight issues in elementary school, stakeholders may identify means of positioning educators to support the delivery of nutrition and healthy lifestyle knowledge through the curriculum, modeling and engaging with students in experiences that could influence nutrition and lifestyle choices to address the obesity and overweight problems in this southeastern state. Gaziose et al. (2017) noted that schools are excellent environments to connect with students due to the public school structure promoting access and added that delivery of nutrition education was cost effective in schools.

The importance of teachers' modeling the selection of good food choices has been shown to influence students' behavior. The effectiveness of school-based programs focusing on nutrition was found to be related to the administrative support from leadership and policymakers, strategies incorporated to help families and caregivers make

adaptations to healthier lifestyles, and fidelity of nutritional programs and theories used to approach the implementation of the intervention program in the schools (Colley et al., 2018; Cotton et al., 2020; Murimi et al., 2018). Yen (2022) stated that people learn from each other. Bandura (1986) emphasized that learning involves a social process in that individuals derive learning from each other.

The social learning framework aligns with the investigation of how teachers imparted their information about nutrition knowledge to students in their classrooms. The modeling and influence of teachers, while embedding nutrition instruction in their curriculum, could improve childhood obesity. I structured interview questions to explore how teachers perceived students made nutrition choices and how teachers imparted nutrition knowledge, any nutrition programs used, and teachers' perceived influence of the role they played in supporting students to make good nutrition choices adopt a healthy lifestyle. I conducted open coding of the interviews and analyzed this information related to the participants' descriptions using the lens of social learning theory. The conceptual framework, Bandura's social learning theory grounded this basic qualitative study. This study is expected to support educational stakeholders in how teachers describe the status of obese and overweight students as well as how they describe the challenges of dealing with this phenomenon in the school. Therefore, the study findings could help fortify the role of the educator in imparting knowledge, modeling good nutrition and lifestyle choices for students to help combat student obesity.

Nature of the Study

In this basic qualitative study, I focused on the perceptions and descriptions of participants. The purpose of the study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. Thus, using one data collection tool, the interview protocol, I recruited participants from a purposefully sampled group who had knowledge of the phenomenon being studied (see Lodico et al., 2010; Merriam & Tisdell, 2016). The phenomenon was how teaching nutrition using the curriculum could improve childhood obesity.

I used a semistructured interview protocol to collect data from 10 elementary school teachers who support students who struggle with weight and healthy nutrition choices. The interview protocol was aligned with the research questions and thus was designed to explore participants' perceptions of student obesity and health and also participants' perceptions related to the challenges of teaching students about nutrition and exercise. Participants were from an elementary school in southeastern state. I analyzed the data using qualitative analysis and identified codes, categories, and themes (see Saldana, 2016). Coding of data progressed to combination of codes into categories and finally themes relevant to the research questions (see Miles et al., 2020; Yin, 2016).

Definitions

Body mass index (BMI): According to the ACHI (2022), "BMI is a constructed value that can be used to assign individuals into underweight, normal or healthy with, overweight, or obese weight status categories" (p. 5). This number is calculated using a person's weight and height. High BMI scores relate to health problems.

Nutrition knowledge: The term is describing the method by which organisms obtain and make use of food minerals and vitamins that are essential substances for health (Demirci et al., 2018). In this study, nutrition knowledge refers to the understanding of teachers, parents, and students about eating healthy foods.

Obesity: BMI for obesity is the category "at or above 30or above the 95th percentile for children of the same age and sex" (M. Jones et al., 2018, p. 890).

Overweight: This BMI category "ranges from 25 up to 29.9 or is at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex" (M. Jones et al., 2018, p. 890).

Physical activity: Physical movement of the body makes it strong and healthy (Erdogan et al., 2021).

Reciprocal determinism: According to Bandura, is the idea that behavior, the individual, and the environment all interact with and influence one another (1986).

Assumptions

For this study, I assumed that awareness, knowledge, healthy eating habits, and exercise habits could reduce overweight and obesity in children. Cotton et al. (2020) stated that schools can have a positive impact on nutritional outcomes and improve on childhood obesity in children. The assumption was that participants would answer the interview questions truthfully. Additionally, participants were assumed to be able to answer the interview questions with valuable data.

Scope and Delimitations

The study's scope involved 10 elementary teachers from one elementary school in a school district in a southeastern state. Perceptions of teachers were gathered to answer the research questions, so the study was limited to in-depth interviews of teachers. No student data were measured. Findings may transfer only to similar school districts. Every study has boundaries, and limitations of this study were created by the number of teacher participants and the use of only elementary school teachers.

Limitations

Regarding limitations, responses to interview questions only reflect the views of the elementary teachers at one school in one southeastern U.S. school district. Researcher bias could have been a limitation; this was mitigated through the use of an interview protocol as well as member checking, in which interviewees confirmed the draft findings of the study (see Ravitch & Carl, 2016).

Significance

In the study state, students' overall percentages of BMI are escalating. According to ACHI (2018, 2019, 2020, 2022), students in the study state are overweight and obese. Further, using BMI, the percentage of overweight and obese students in the study district was 35.3% in 2019-2020 and 37.6% in 2018-2019 (ACHI, 2019, 2020). Elementary students at the study school had high rates of obesity and overweight as well (ACHI, 2019, 2020). The knowledge of nutrition and the consequences of health issues can promote a dialogue worthy of dignity and social change to create a healthier lifestyle for students and teachers.

Results of this study showed teacher perceptions of student obesity and challenges in teaching elementary school students to make healthy choices to reduce childhood obesity. The results of this study provide a baseline information for the district to use in designing a curriculum tailored to teachers' knowledge and needs rather than buying a commercial program off the shelf that might not be appropriate for the local populations. The research provided information that could be used by school leaders to develop interventions and programs to meet the school's needs in this southeastern state. Also, teachers can use the information to improve the knowledge level of nutrition and exercise among students in their classes. With the information from this study educators may better realize possible strategies to use to help students make healthy nutrition and exercise choices.

Summary

Too many children in the study state schools are overweight or obese, putting them at risk for severe health conditions. Educators, legislatures, parents, and health care providers have realized this growing problem and are seeking ways to promote better health. This study focused on investigating teachers' perceptions of student obesity and challenges they face in teaching students about health issues. Schools are charged with teaching health and nutritional practices that affect students' physical and mental well-being. The ultimate goal is developing healthier lifestyles for students.

In Chapter 1, I provided an overview of the problem and described the conceptual framework, methodology, and approach. I also indicated the significance of the study and provided an overview of the research related to the problem that was the focus of this

study. In Chapter 2, I review the literature related to nutrition, health, and student obesity. I also describe the conceptual framework for the study.

Chapter 2: Literature Review

In this study, the perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues were explored. Understanding teacher challenges could lead to professional development to increase teacher self-efficacy in helping students make healthier choices. In Arkansas, overweight and obesity are persistent problems among the state's children and adolescents (ACHI, 2018, 2019, 2020, 2022). This chapter includes a review of the literature about childhood overweight and obesity. I begin the chapter by describing my literature search strategy and theoretical framework.

Literature Search Strategy

To obtain articles on overweight and obesity in young people, the causes, and the effects, I used databases from the Walden University Library, including ERIC, Education Research Complete, and Health and Medical Complete. Key words that I used to find articles in professional journals and research literature included *overweight, youth, young people and diet, parent influence on youth food choices, obesity and disease, peer influences on food choices, socioeconomic level,* and *eating.* Also, to find information on the factors that influence youth dietary choices, I searched for information on federal nutrition standards and school lunch requirements, physical education standards, and health curriculum requirements by state.

In the literature review, I compared the differences in the authors' points of view about childhood overweight and obesity as they relate to disease, interventions, and programs. The review also includes a discussion of the following topics: the prevalence

of childhood obesity; repercussions of poor health habits; efforts to combat obesity, including Arkansas Act 1220 (2003); the importance of education; key health influences; interventions and programs; and environmental factors.

Conceptual Framework

The phenomenon I explored in this study is the increasing percentage of students who qualify as obese and overweight at an elementary school study site in a southeastern state. I examined how elementary teachers describe their situation regarding obese and overweight students and how they perceive the challenges regarding teaching students about health and weight issues. I explored the phenomenon of how elementary teachers described instructing obese and overweight students and their described challenges of providing instruction to this population. The conceptual framework of this study was Bandura's (1969) social learning theory. Three concepts underlie social learning theory are observation, imitation, and modeling. As the author of social learning theory, Bandura (1986) established that there are five principles that influence learning: (a) observation, (b) attention, (c) retention, (d) reproduction, and (e) motivation (Bandura;1969). Social learning theory emphasizes that learning occurs through observing, engaging attending to, retaining, reproducing, and being motivated demonstrate acquired learning. In social learning theory, observation, as the first principle in the learning process, involves the individual observing specific occurrences or having experiences in a social setting. Other principles support the learning process following observation (Cherry, 2021). In the second principle, attention, the individual must attend to task, experience or interaction and must engage the individual or activity that is being observed. If the individual is not

engaged or is more interested in something else occurring in the environment then the distraction may affect the potential to acquire the knowledge from the observed event (Bandura;1969). Thus, attention helps the individual focus on the knowledge from the observation. Focusing on the event, interaction or knowledge, will aide in the next step of the social learning process. Retention is the third principle in the process and includes how well one recalls what they observed or experienced (Bandura;1969). Memory of the knowledge is important if the individual is going to be able to perform a task or apply the knowledge acquired. Reproduction, the fourth principle, involves being able to demonstrate or perform the task after having observed, attended to and retained the knowledge or learning to be acquired. These underlying processes support learning. Reciprocal determinism is a key concept that is also related to social learning theory (Bandura;1969).

Reciprocal determinism, according to Bandura (1986), is the idea that behavior, the individual, and the environment all interact with and influence one another . Bandura' stheory upholds the experiences of others and "affirms and acknowledges the diverse realities of others" (Beers et al, 2016). Bandura explained that reciprocal determinism is a key concept underlying social learning theory. For example, an individual's behavior may influence an environment and the environment an individual is in may also influence an individual's behavior. The behavior of an individual is influenced by the environmental context in which the individual is and the behavioral responses in terms of frequency and magnitude are influenced by the environment, hence the reciprocal relationship between behavior and environment as an interactive process. The individual

and how they behave and interact in an environment is based on prior learning, experiences in that and other environments, as well as previous rewards and consequences of the individual's behavior. Thus, individual's behavior can be influenced by their specific social learning from previous experiences across other environments (see Bandura, 1986).

Students' eating habits and lifestyle choices are major contributing factors to childhood obesity (Coccia et al., 2020). Elementary students have been found to select meat and grain over fruits, vegetables, and dairy (Cashman et al., 2010). These behaviors are learned in the early stages of life and continue as children grow to youth and adulthood resulting in the continued cycle of obesity (Reilly & Kelly, 2011). Hence, the identification of strategies to address these nutritional choices that students learn as young children need to be identified to change the behaviors of young children and reduce childhood obesity. Researchers have established that educators may have a key role in intervening with childhood obesity (Clark & Fox, 2009; United States Department of Agriculture Food and Nutrition Service, 2019). Nutritional deficiencies in school lunch programs have been a focus of the U. S. public school system, and wellness policies have addressed vending machine food options and snack options for students in public schools (Clark & Fox; United States Department of Agriculture Food and Nutrition Service). Researchers have concluded that nutrition education curriculum is cost-effective and in have resulted in "clinically significant and socially relevant" results (Graziose et al., 2016. p. 688). In a study involving fifth grade students who participated in an education curriculum for 1 year, the findings were that the .8% of the students who participated in

the program experienced a reduction in obesity that translated to "1,600 years of life and averts over $8 million in medical costs" (p. 688). Based on the results of this basic qualitative study, additional research is needed to consider possible nutrition curriculum, and approaches to integrate nutrition into the elementary curriculum.

In social learning, people learn through observing and modeling. Bandura discussed the social learning theory process and social behavior and proposed that new behaviors can be acquired by observing and imitating others. According to Bandura (1969), differences of opinion exist among personality theorists in what they consider to be the most suitable reference events for identification; it is generally agreed that identification refers to a process in which a person "patterns their thoughts, feelings, or actions after another person who serves as a model" (p. 214). Applying identification to this study then is related to the elementary students' identification with the teachers in terms of how the students perceive their own thoughts feelings or action as congruent or similar to the teacher who is serving as a potential model (see Bandura, 1969). As elementary schools are social institutions and are structurally designed to provide social learning opportunities for students, social learning theory formed the basis to analyze the teachers' descriptions of the current situation and challenges pertaining to dispensing knowledge, and modeling behavior related to nutrition and healthy choices to address obesity in the educational arena. Bandura's social learning theory would, therefore, support the process for how and why a teacher can possibly transfer nutritional knowledge through social learning in classroom environments. Students look to the teachers as the individuals who convey knowledge about a variety of curriculum areas

and using social learning theory, teachers may also convey knowledge and engage in modeling nutrition scenarios to benefit students' healthy lifestyle choices.

The link between knowledge and behavior is influenced by one's belief in their ability to create change or engage in behavior changes (see Bandura, 1977). Bandura (year) expanded social learning theory to social cognitive learning theory and examined the role of self- efficacy, or one's belief in their ability to engage in a behavior change. Bandura noted there are four approaches that are useful in influencing one's sense of self-efficacy that include: (a) verbal persuasion, (b) performance accomplishment, (c) vicarious performance, and (d) physiological arousal. While I focused on social learning theory and did not use Bandura's theory of self-efficacy, some of the premises of how knowledge is strengthened are applicable. These strategies can be used to strengthen learning and knowledge as well. For example, teachers may increase knowledge about health issues and nutritional choices for students through modeling and healthy food and lifestyle choices, recognizing and rewarding the healthy food and lifestyle choices of students, role playing healthy scenarios with students, and raising students' awareness towards acting on making healthy food choices and lifestyle choices (Rimal, 2000). Bandura described the reciprocal process of how knowledge and behavior interact. This study evolved from the literature on the effects of being overweight or obese on health, low self-esteem, and poor academic performance in students. I examined the teachers' descriptions of how they described the current situation of obesity and that of students being overweight and also how teachers conveyed knowledge of nutrition and healthy lifestyle choices and modeled these behaviors to elementary students. Researchers have

explored the influence of knowledge on behavior (Valente et al. 1998) and have also explored behaviors and they may underscore the development of attitudes and possible serve as possible predictors of knowledge (Rimal, 2020).

In this study, the key research questions focused on how elementary school teachers described their current situation with regard to teaching students about health and weight issues and also what challenges they perceived related to providing instruction pertaining to these issues. The modeling and influence of teachers, while teaching nutrition in their curriculum, could improve childhood obesity. I used the data collection by interviewing teachers in an elementary school. The nutritional knowledge of teachers was the phenomenon being studied (see Lodico et al., 2010; Merriam & Tisdell, 2016). The phenomenon was how teaching nutrition using the curriculum could improve obesity. Bandura stated that various sub processes occur before an individual is influenced by observational learning. According to Bandura (1986), through the social learning theory process and social behavior, new behaviors can be acquired by observing and imitating others.

The problem addressed by the study was the increasing percentage of obesity among elementary students in southeastern school district. The conceptual framework of Bandura's social learning theory was used to address research questions on how elementary teachers described the current situation their school with respect to student obesity and what challenges elementary school teachers identified with respect to teaching students to teaching students about health and weight issues. Social learning theory benefited the study of this phenomenon by providing a lens to consider the role of

the teacher in the social learning process, and to better understand how knowledge was being shared and behaviors were being modeled related to nutritional and lifestyle choices that could alter the path of obesity for children. Using social learning theory provided insight into possible pathways to address childhood obesity in elementary schools.

Literature Review Related to Key Concepts and Variable

Statistics on Childhood Overweight and Obesity

Childhood overweightness and obesity negatively affect children's physical and mental well-being, causing them to suffer from health problems such as diabetes, asthma, and depression. Grog (2018) revealed that 33% of United States children between the ages of 10 and 17 are overweight or obese. Experts are also concerned that overweightness and obesity rates have surged in recent decades, resulting in a higher percentage of the youth population with chronic health problems. Chatham and Mixer (2020) found, for instance, that the rates of childhood overweight and obesity in the United States leads to adult obesity. Ward et al. (2017) noted if current childhood obesity trends continue, more than half of U.S. children (57.3%) will be obese by age 35.

The problem of childhood overweightness and obesity in the United States continues. A national priority is curbing the growing epidemic for adolescents overweightness and obesity, which has been identified as among the 10 leading poor health indicators (Bejarano et al., 2021). Along with sedentary lifestyles, experiences and habits are a contributing factor to poor health in both children and adults. According to Bejarano et al. (2021), parental unemployment and lack of education are a few of the

barriers affecting children's healthy lifestyles. For the most part, overweightness and obesity seem to arise from a lack of nutritional knowledge and exercise. These problems are widespread across the United States. Therefore, states are looking into ways to improve this alarming problem.

Repercussions of Poor Health Habits

Research has revealed that a growing number of children in the United States are overweight or obese. According to the Centers for Disease Control and Prevention (CDC, 2020), 19.7% of children in the United States are obese. Children often become overweight at an early age, and if they are overweight when they are young, they are likely to be obese adults. According to King-Mark (2016), overweight and obese children often become obese adults. Childhood overweightness and obesity can lead to public health issues and costs. First childhood experiences, food preferences, and dietary habits are likely to persist into adulthood, so an unhealthy diet in childhood may well establish practices with implications for a person's health throughout their life. Indeed, many of those suffering from poor health as adults can link their problems back to being overweight or obese as children.

Chronic Health Conditions

Childhood obesity that persists into adulthood puts individuals at higher risk for chronic health care conditions and increases societal health care costs (Chatham & Mixer, 2020). Experts have pointed out that the risk of developing Type 2 diabetes, hyperlipidemia, and cardiovascular problems is higher among obese adults who were obese in childhood (Chatham & Mixer, 2020). Students are gaining weight rapidly, as

children who have two or more comorbidities are at a high risk of other health conditions occurring (Demirci et al., 2018). Demirci et al. (2018) explained that overweight and obesity increase a person's risk of developing coronary heart disease, Type 2 diabetes, hypertension (high blood pressure), stroke, and some types of cancer. Papa et al. (2017) affirmed that overweightness and obesity are complex health issues with severe consequences such as diabetes, heart disease, depression, stroke, some types of cancer, and mental illness. With these facts in mind, Chatham and Mixer (2020) suggested that increased obesity in the population requires increasing awareness of the problem and its connection to chronic illness. Therefore, education of the complex health issues and the severe consequences could improve the overall health of the population.

Medical Costs and Economic Consequences

High cholesterol and high blood pressure, which are risk factors for heart disease, and Type 2 diabetes are developing at an early age and continuing into adulthood, contributing to the rise in health care utilization and associated costs in the United States (Chatham & Mixer, 2020). According to Demirci et al. (2018), being overweight or obese increases the risk of a host of adverse medical conditions, leading to adverse economic consequences. Consequently, as some reported, the problem is becoming central to the focus of national health cost management systems (Long et al., 2019).

Obesity causes high medical costs. The CDC (2020) reported 19.7% of children and adolescents (ages 2–19 years) were obese during 2017–2020, representing 14.7 million individuals. Hammond and Levine (2010) stated more than two thirds of U.S. adults were obese. Along with this upward trend, the medical cost of obesity has

skyrocketed (Hammond & Levine, 2010). The number of students with childhood obesity has increased over the years.

Cost Effectiveness

Taxpayers inevitably pay the cost of an unhealthy society. Taxpayers are affected because they are not only paying for the result of the problems. The cost of health care has increased and maybe a burden for taxpayers in the future "Obesity prevention remains a high priority on the policy agenda for many state-level policy makers" (Long et al., 2019, p. 1). The prices of health care and the rising costs of paying for health care benefits increase the value of providing care for uninsured people, which leads to higher taxes (Coccia et.al). Because hospitals are required by law to care for anyone needing medical treatment, including the underinsured and uninsured, taxpayers bear the increased cost amid the rise of medical insurance and health care costs (Coccia et.al). The prevalence of children with weight issues plays a role in these rising costs. Taxpayer money not only pays for public education, but also supports the programs and healthcare costs that are associated with the problems of overweight and obesity. Teachers are one group who can improve children's lives and assist in the taxpayers' burden by transferring knowledge of nutrition and modeling healthy behaviors in their classrooms.

Efforts to Combat Overweight and Obesity

Even though being overweight or obese can have a severe effect on students and adults, people can change their diets if they so choose. Gosine et al. (2020) found, for instance, that between 40% and 77% of overweight children remain obese as adults. Ghaffar et al. (2019) added that the change agents who can make the most significant

difference in improving health behaviors are social and environmental conditions outside the health profession. Though excess body weight is related to increased health risks of numerous chronic health conditions, some researchers have reported that health improvements associated with higher levels of cardiorespiratory fitness and energy expenditure appear to be present even in adults classified as overweight or obese or with Type 1 or 2 diabetes (Ghaffar et al., 2019). Ongoing efforts across the country made to change the trajectory of children's health. Arkansas is one state whose schools have adopted programs to increase knowledge and have banned vending machines or cafeteria food that is bad for children (Arkansas Act 1220, 2003).

Improving Food Choices

Experts added that junk foods can be dangerous. Arango (2017) stated schools could plan infographics about the healthier food items served in school, such as a smart snack. De Marchi et al. (2016) examined the growing concern over availability of junk foods in schools and how they have contributed to childhood overweight and obesity. Also, school lunches are often inundated with fried foods and high fat content. Demirci et al. (2018) defined eating habits as including "diverse foods, regular meals, size of food, frequency of breakfast meals, eating and snacks, behavior during meals, unbalanced diet, and unfavorable food" (p. 1425). De Marchi et al. explained that food choices are not merely about what a person wants to eat, but rather a complex process that depends on the culture and can be influenced by a person's social, economic, and emotional environment. Therefore, breakfast and lunch programs are vital to improving the foods

served to students daily. For students to make better choices of foods to eat, knowledge of nutrition could help.

The precise evaluation of students' eating consumption can be measured by their energy level, according to De Marchi et al. (2016). If children eat foods that their bodies cannot metabolize efficiently, they may not be used for energy and stored in the body as fat or adipose tissue. For that reason, consumers are becoming more aware that their food choices potentially affect their health (De Marchi et al., 2016). In short, children's food choices affect their health later on in life.

Act 1220

In Arkansas, overweight and obesity among students in public schools exceeded 44% in 2020-2021, as indicated by the BMI assessment (ACHI, 2022). Among the districts in Arkansas reporting results of BMI, 259 of 261 school districts contributed BMI data (ACHI, 2022). To reverse the unsettling trend, Arkansas implemented Act 1220 to make educators, parents, legislatures, and the community aware of the childhood overweight and obesity epidemic in Arkansas. Bypassing Act 1220, Arkansas was empowered to improve the overweight and obesity epidemic.

Act 1220 enacted the requirement for Arkansas students to measure their BMI. Arkansas annual reports statistics based on children's BMI, both by school and district (ACHI, 2022). As part of the strategy, students are given annual BMI assessments, and parents receive the results of their child's BMI assessment. Teachers' knowledge of nutrition is measured voluntarily. According to M. Jones et al. (2018), Arkansas was

among the first states to pass comprehensive legislation to combat childhood overweight and obesity and to require statewide BMI assessments of children.

BMI

Other states are beginning to assess students for health reasons using the BMI and additional measurements. Among other states, Texas and Arkansas have developed school-coordinated health programs that cover activities, resources, and school health policies (M. Jones et al., 2018). For example, Texas uses BMI to identify overweight and obese children through a health prevention program called Choosing Health and Sensible Exercise (Nigg et al., 2016). According to the ACHI (2022), Arkansas students' BMI is calculated using the formula weight in pounds divided by height in inches times 703. Children ages 2–10 are assessed yearly in Arkansas. Texas and Arkansas both have policies and procedures designed to combat the conditions, and there has been a considerable decrease in overweight and obesity reported by state educational agencies. However, the assessment of the problem is only the first step.

Importance of Education

Changing eating habits and exercising behaviors may improve heart disease and other medical conditions. For example, though the risk to an overweight child for developing cardiovascular disease increased, studies have shown that improved cardiorespiratory fitness has the potential to decrease the incidence of morbidity. Pastor and Tur (2020) conducted a systematic review of interventions to increase healthy habits of low-income children. The researchers noted children of low-socioeconomic status tended to eat more sugary foods. Half of the interventions Pastor and Tur reviewed were

effective, suggesting more research is needed. Pastor and Tur reported more effective interventions involved long-term follow-up or the entire family.

Eating habits contribute to overweight and obesity, and knowledge of better eating habits can lead to a healthier lifestyle. S. R. Johnson (2016) added that educating students about the importance of making healthy food choices is a crucial weapon in the battle against overweight and obesity. Early interventions of healthier eating habits have been essential strategies to address and decrease childhood overweight and obesity; these strategies may improve cholesterol levels and hypertension.

Children need to be empowered to make the right food choices, understand nutrition, and maintain a healthy life. According to Ghaffar et al. (2019), schools are the places to teach young people the academic skills they need to succeed, but they are also an ideal environment for teaching healthy life skills. King-Mark (2016) added that school-based health initiatives are generally received well by students, which helps improve the likelihood of adapting health behaviors. Variables that can affect a child's health and well-being include education on nutrition and exercise King-Mark (2016). Teachers impart knowledge of diet and training to students. Therefore, students can be empowered to live a healthier lifestyle.

Moreover, teachers are often role models for students; they are ideal candidates to teach how necessary nutrition is to keep the body healthy. Ultimately, knowledge of nutrition and the essentials of a regular exercise routine will promote a healthier lifestyle, according to R. E. Jones et al. (2017). Teachers' grade level, subject taught, and gender

are considered a contributing factor in how nutritional knowledge is transferred to their students (R. E. Jones et al., 2017).

Even though health issues result from overweight and obesity, strategies exist to combat those issues. Knowledge of nutrition may change behavior and establish a healthier lifestyle. Demirci et al. (2018) stated exercise such as frequent walking or cycling can improve health-related outcomes. Demirci et al. added that nutrition education is a significant aspect of improving dietary habits and food choices. Arango (2017) added that another way to teach healthy nutritional behaviors to younger students is through creativity. Teaching nutrition and the side effects of consuming too many high-calorie and low-nutrition foods may reduce health problems. Although teachers can put forth the efforts to incorporate diet and exercise into the classroom, everybody must be involved, including parents, community leaders, business leaders, legislatures, and healthcare providers.

Key Health Influences

A multitude of factors can positively or adversely affect children's health. United in concern, medical professionals, educators, parents, sociologists, and some professional athletes and celebrities have joined together to raise awareness and reverse negative health trends. First Lady Michele Obama helped lead the challenge to reduce childhood overweight and obesity by starting the vegetable garden on the lawn of the White House and publishing a book on nutrition and health. Ludwig (2018) pointed out that President Barack Obama joined the effort by signing a Presidential Memorandum creating the first

task force on childhood obesity. If a child's nutritional needs are not addressed at an early age, the chances of developing chronic diseases may increase.

Other influences on childhood overweight and obesity are peers, parents, and the environment. Hall et al. (2016) stated students' nutrition education varies among children of various income levels and environments. Nevertheless, Demirci et al. (2018) as well as Berge et al. (2015) suggested that planned mealtimes with family eating together may encourage healthier eating habits. Even school cafeterias may be a strategic place to influence children's food choices and, ultimately, their weight. During the school day, the meal in the cafeteria is some students' last meal. Unfortunately, some parents either do not know or have the time to teach children about food, so, as in many areas, nutrition and health education become a part of the school curriculum. These influences are part of the environment affecting childhood overweight and obesity.

Although teachers may not be trained to teach health, they can teach real-life health skills. Arango (2017) stated that nutrition could be organized by strands such as health promotion, analyzing influences, accessing information, and communication. Even simple advice to read labels on items before buying products can lead to better selection of nutritious foods. Students who are sedentary during inclement weather learn about nutrition in their classrooms during the winter months. Information on healthier foods, dietary activities, and the importance of exercise can be shared with parents.

Physical Activity

Students need both a balanced diet and physical activity to maintain a healthier lifestyle. Research has indicated that exercise is essential to improve cardiorespiratory

fitness. King-Mark (2016) stated that the beneficial effects of physical activity and the detrimental consequences of a sedentary lifestyle for children and adolescents have been demonstrated in multiple research studies. S. R. Johnson (2016) stated the 2010 launch of the First Lady's "Let's Move" campaign was to create public awareness about the problems associated with childhood obesity by urging kids to be more physically active Demirci et al. (2018) also described the "effects of eating habits, physical activity, nutrition knowledge, and self-efficacy levels on obesity" (p. 1424). Being overweight contributes to reduced exercise or physical activity and unhealthy eating habits. A balanced diet and increase physical activity may improve and maintain a healthier lifestyle.

Physical education teachers have the skills to develop and present a coordinated health program; however, the knowledge needs to be universal among educators. King-Mark (2016) emphasized the importance of physical activity and decreasing the amount of sedentary time as a vital component of health programs implemented in the school setting. The knowledge of nutrition and exercise needs to be widespread among educators. With adequate knowledge of nutrition and effective teaching strategies, physical educators can help enforce healthy practices.

Students finding the right time of the day to exercise can be one solution to staying physically fit. Arango (2017) stated that students learn physical education concepts while engaging in physical activity. Bejarano et al. (2021) noted that nutrition information coming from a physical education teacher could be powerful in changing behaviors, because many students look up to their physical education teachers. Physical

education teachers can translate their knowledge of nutrition and exercises through their curriculum.

According to Chatham and Mixer (2020), cultural or safety conditions or lack of funds can impede schools from providing movement-focused extracurricular activities for students, leaving one less avenue for young people to build healthier bodies and stay fit. Therefore, physical fitness is as significant as eating a balanced diet. Even though emphasis is placed on instruction, students need time for physical education or recess.

One obstacle in engaging children in more physical activity is the time they spend on screens, whether those screens are on televisions, computers, smart phones, or other handheld devices. One group of researchers commented on the decades-long relationship between TV and lack of activity, saying, “Youth continue to exceed recommendations for screen-based sedentary behaviors, especially watching television” (Bejarano et al., 2021, p. 1). Children are often left to self-regulate their television viewing and computer use at home. Excessive television viewing or computer use leads to overweight or obesity. Sometimes children or teenagers are left to watch television for periods without regulation of food consumption or activity; therefore, their chances of becoming overweight or obese increase. Sedentary practices often influence other lifestyle behaviors; moreover, they reduce the available time for physical activity. If high-fat and low-nutrition snack foods are readily available in the home, and children to continue to be less physically active than earlier generations, their lack of physical activity will increase childhood overweight and obesity.

Nutritional Knowledge

The nutritional knowledge of teachers can impact students' behavior if that information is taught during classroom activities. Eriksson et al. (2018) asserted that assessing schoolteachers' knowledge and feedback of nutrition can be particularly relevant given the current emphasis on asking schoolteachers to provide nutrition education to their students to impact childhood overweight and obesity. Even when teachers' experience of teaching and certification is not in nutrition, their self-efficacy can give them the ability to transfer knowledge of nutrition, a start to promoting a healthier lifestyle among students.

In Arkansas, current dietary guidelines and nutritional standards required of school lunch offerings are the following: 1% or fat-free milk, fruits and vegetables at all points of service, limited fried potatoes (once a week in elementary schools and one cup in middle and high school), and no extra dessert in middle and high school. Additionally, students have health and nutrition standards built into the curriculum (Arkansas Department of Education, 2011). Arango (2017) stated that for schools to reach their goals, they must incorporate nutrition education into other subjects. Teachers can teach students using their content curriculum and self-efficacy about good dietary habits. Even though teachers are not mandated to teach nutrition through their curriculum, they can make students aware of good nutritional habits through modeling, supporting social learning theory. Giving students knowledge to make their own healthy choices related to foods increases student self-efficacy. This knowledge may improve students' lifestyles as they become adults.

Teacher Knowledge and Self-Efficacy

Knowledge of nutrition among educators, according to many reports, could positively affect children's eating habits, health, self-esteem, and academic performance. As Eriksson et al. (2018) asserted, teachers in all subject areas are being called upon to teach nutrition education to reinforce nutritional concepts learned in the classroom. Day et al. (2019) stated that teachers must convey accurate nutrition information with their students to promote better health. According to Eriksson et al., schools need useful tools to educate children and families about obesity, food choices, and exercise. Hall et al. (2016) observed a gap in teachers' knowledge regarding nutrition and exercise and effective ways to implement health-related programs. Teachers' knowledge of nutrition and exercise plays a vital role here. Although many teachers have a basic understanding of proper diet and exercise, schools need to provide strategies for teachers to incorporate health into their subjects.

Research has indicated incorporating exercise and healthy eating habits into a school curriculum may reduce the childhood overweight and obesity epidemic. Ghaffar et al. (2019). According to Ghaffar et al. (2019) insisted education curriculum lessons in the knowledge of nutrition and exercise could result in lifestyle changes that may improve diet of future generations. Because of these possible positive outcomes, schools need to merge their curriculum standards with best practices for healthier ways to live. Understanding teachers' perceptions about students' nutritional state and challenges in teaching health in the curriculum may provide insight into how changes in food choices may occur for students that lead to a healthier weight.

Interventions and Programs

The literature on childhood overweight and obesity not only provides the reasons for overweight but also offers interventions and programs that teachers can consider in the classroom. Researchers have indicated that worksite obesity prevention programs are effective supplements to improve the overweight and obesity epidemic. Zajacova and Lawrence (2018) asserted studies documented that more schooling is linked with better health and longer life. Therefore, obesity prevention programs are valuable to the improvement of a healthier lifestyle.

In another example, Papa et al.(2017) discussed the Arizona Empower Program, which implemented five standards related to overweight obesity prevention through physical activity, fruit juice, family-style meals, and training standards for staff. Teachers could use interventions and programs like this in schools to teach lessons on making healthier choices in foods. By developing partnerships with community outreach programs, schools can influence students' behavior for good.

One example of a program implemented to train younger children about nutrition in schools is the Child Adolescent Trial for Cardiovascular Health (CATCH). According to Chuang et al. (2018), the 3-year intervention program promoted for 5,106 ethnically diverse children drawn from 96 schools in California, Louisiana, Minnesota, and Texas observed fitness from a teacher-led based nutrition program. The program targeted children from third through fifth grades by modifying school food service and increasing physical activity in a health-education curriculum. The research indicated a comparison of nutrition using the CATCH interventions; moreover, the program showed students'

knowledge of food. The CATCH intervention was used to determine whether awareness of food among educators and students affected students' behavior when making food choices. Ghaffar et al. (2019) concluded that an ideal setting for community interventions would make health education available for all community children.

Factors of the Environment

Researchers and health care providers have explored the causes of poor health and its association with the environment. Research has indicated the effect of the environment begins at an early stage in life (Chatham & Mixer, 2020). Chatham and Mixer (2020) noted that lifestyles become more ingrained over time. Environmental factors, like school cafeterias, vending machines, peer influences, and parental habits, affect childhood obesity. S. R. Johnson (2016) stated that one of the most significant and controversial actions was improving the quality of food served in schools, which included a lobbying effort to update nutritional standards for meals in the school lunch program. Coccia et al. (2020) stated that a major health concern related to childhood overweight and obesity is a physical and social environment that promotes foods high in fat and calories and minimizes the opportunities for physical activities. Children's environments and the culture that exists in their environment are critical to childhood obesity.

The selections of items sold in vending machines located in schools are a significant contributor to childhood overweight and obesity. Students are regularly exposed to vending machines with high sugar, high salt, and moderately high cholesterol selections like soft drinks, soda pop, candy bars, and potato chips. Gangemi et al. (2020) stated in the last 30 years, adolescent obesity rates have quadrupled in the United States

and, in Philadelphia alone, over 40%of children and adolescents are overweight or obese. Arkansas legislatures have passed laws to combat this unhealthy temptation, restricting vending carbonated beverages to students (Bai et al., 2021). Vending machines are part of the physical and social environment that promotes foods high in fat and calories. As a result of the profit schools have made from the vending machines, unhealthy food choice remain the biggest attraction in vending machines. Some of the readily available junk foods include sodas, candy bars, and chips. Arkansas Act 1220 (2003) resulted in more healthy options in Arkansas public schools and fewer vending machines (Phillips et al., 2010).

Although schools use the profits from vending machines to support various school activities, the easy availability of these unhealthy food options contributes to overweight and obesity. The Kaiser Family Foundation (2004) added that the growth in the number of fast-food outlets along with vending machines in the United States and the rest of the world and the trend toward “super-sizing” (p. 1) food portions in restaurant chains frequented by youth have led to an increase in unhealthy eating habits. However, simply eliminating vending machines is not necessarily enough to ensure that students make healthy food choices. Students learning how to make the right food choices should be part of the curriculum.

Although peers and parents are essential players in intervening in the epidemic of overweight and obesity, the social, cultural, and physical environments work together to make an impression on children. According to Ghaffar et al. (2019), evidence indicated that food environmental factors affecting health behaviors fall into three broad categories:

individual, social/cultural, and the physical. Family, friends, peers, parents, teachers, and associates are included in the background and should support a healthier lifestyle for a living. Peers, parents, and teachers should have common interests and goals for better eating habits and exercise rituals. If healthier habits and rituals become routine, positive behaviors may result and contribute toward lower overweight and obesity statistics.

Summary and Conclusions

The literature has shown that more children than ever in the United States are overweight or obese. Hall et al. (2016) argued that it was becoming almost impossible not to be aware of the growing crisis of child obesity in the United States. Experts agreed that the rise in diseases related to obesity in children in the United States has led to a growing need for appropriate weight-management strategies in schools (Eriksson et al., 2018). Therefore, weight problems can cause a host of life-threatening diseases and rising health care costs.

Healthier school environments are the topic of conversations from health care providers, parents, educators, and legislatures. Arkansas and other states have passed laws to provide healthier school environments and educate children and families on better health. The focus is to improve school nutrition and physical activity during the school day and educate children on making smarter food choices. Creating healthier public school environments with more health-savvy students may lead to healthier lifestyles for children and more extended fuller lives for them as adults.

In Chapter 1, I provided an overview of the problem, conceptual framework, methodology, and significance of the study. I also provided a brief review of the research

related to the problem. In Chapter 2, I reviewed the literature related to nutrition, health education, and student obesity. I also described the conceptual framework for the study. In Chapter 3, I review the methodology, including the research design and rationale, the role of the researcher, participant selection and the sample, the setting, data collection including the interview protocol, and the interview process. I explain the plan for data analysis. I also describe the issues of trustworthiness regarding data collected, ethical considerations for conducting this study, and protection of the human participants.

Chapter 3: Research Method

The number of overweight and obese students in the study state have increased since 2012 (ACHI, 2020). Their weight issues contribute to many other serious health problems, including heart disease, diabetes, and musculoskeletal disorders and can contribute to low self-esteem and poor school performance in children(ACHI,2020). The purpose of the study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. In Chapter 1, I provided an overview of the problem, conceptual framework, methodology, and significance of the study. I also provided a brief review of the research related to the problem. In Chapter 2, I reviewed the literature related to nutrition, health, and student obesity. I also described the conceptual framework for the study.

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Research Design and Rationale

Two research questions guided this basic qualitative study:

RQ1: How do elementary teachers describe the current situation at their school with respect to student obesity?

RQ2: What challenges do elementary school teachers identify with respect to teaching students about health and weight issues?

The purpose of the basic qualitative study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. According to Ravitch and Carl (2016), methodologies are the strategies for "understanding the ways that people see, view, approach, and experience the world and make meaning of their experiences as well as specific phenomena" (p. 6). Miles et al. (2020) added, "Qualitative data are a source of well-grounded, rich descriptions of social processes. With qualitative data, one can preserve chronological flow to derive plausible explanations for outcomes" (p. 3). I considered other methodological approaches for this study.

In this study I was not seeking to examine the relationship between the variables of obesity and instruction, and therefore I did not choose a quantitative approach. Various qualitative designs are used to explore perceptions, experiences, and behaviors in relation to an explored phenomenon (Merriam & Tisdell, 2016). Qualitative designs are selected to explore how perspectives, experiences and to support gaining meaning and understanding of a phenomenon being studied (Merriam & Tisdell, 2016). This study focused on exploring the perceptions and descriptions of participants at the study site related to increasing student obesity and challenges they face in teaching students about health issues. Phenomenological research studies are used to understand participants' lived experiences (Normann, 2017). Ethnographic research is focused on understanding patterns of human behavior and the interaction of culture with those behavior patterns over time (Eisenhart, 2017). In this basic qualitative study, I focused on the perceptions and descriptions of participants rather than understanding the influence of culture on

specific human behavior. In this basic qualitative study, I was not seeking to generate a new theory to explain the phenomenon studied, and thus I did not select the grounded theory approach. I chose a basic qualitative design (see Lodico et al., 2010). The focus of this basic qualitative study was to explore participants' descriptions, perceptions and experiences, and sense of self-efficacy related to the phenomenon of student obesity and the challenges faced in teaching student about health issue. Thus, using one data collection tool, the interview protocol, I recruited participants from a purposefully sampled participant group who had knowledge of the phenomenon being studied (see Lodico et al., 2010; Merriam & Tisdell, 2016).

Using the basic qualitative study, I wanted to understand the teachers' perceptions about student obesity as well as teachers' descriptions of how they transferred knowledge to their students about health, nutrition, and weight and challenges they faced. In this study, I sought to understand how teachers could play a role in helping to address childhood obesity

Role of the Researcher

In this study, I focused on the perceptions of teachers about the problem of increasing student obesity and the challenges they face in teaching students about health and weight issues. As a researcher in this study, I was the primary instrument for data collection. In qualitative research, the researcher plays a key role in collecting data and maintaining the integrity of the data collection process (Ravitch & Carl, 2016). In the role of researcher, I developed the instrument and interviewed the participants for this study. I

collected the data by recording participant interviews, completing transcriptions of the interviews, and coding and analyzing these data.

I currently serve as literacy intervention instructional specialist in another district. In previous roles, I have served as a principal, assistant principal, and teacher in another district that did not include the study site. I have never worked at the study school site. Therefore, I have not supervised any participant interviewed. I did serve in the role of substitute teacher in the study district; I have substituted at the study site and have no supervisory authority with any participants. Thus, my role as the researcher did not affect the data collection. I clearly established my role as researcher with the participants, as separate and distinct from the role that they might have known me in as substitute teacher. I confirmed that the participants understood that their participation was voluntary and that they could choose to not answer a question and could leave the study at any time.

As a researcher, I addressed bias during the interview process by not making personal comments and by following the interview protocol. I also focused on using the probes with each participant as appropriate. Before the interview, I followed a specific script that involved the interview protocol and after the interview a specific script was used with each participant to maintain consistent data collection. In this study, I sought to formulate meaning regarding the phenomenon of student obesity, how teachers described their situation regarding this problem, and their perceived challenges of teaching students about health and weight issues. To eliminate any bias or any possible skewing, I used journaling for collecting thoughts and reflections of the responses of the interviewees.

I maintained integrity by jotting down notes and consistently using nonverbal gestures and nods along with a smile during the interview. I used field notes during the interviews. Creamer et al. (2012) stated a number of aspects of developing the field notes may prove challenging. For example, it was a struggle initially to know how much detail to include in the field notes. As I come from a family of diabetes, I had a brother and cousins who died from the effects of diabetes. I refrained from any influence or suggestions of health issues during the interview. I followed Creamer et al.'s advice to set aside my personal beliefs and biases about what constitutes professional practice. Creamer et al. concluded that cultural baggage sometimes interferes with having effective bracketing, making controlling bias difficult although vital.

Bracketing of preconceptions, or beliefs held prior to the interview process or data collection, is important so that the data collection and responses during the interview process are not influenced by the researcher's experiences or preconceptions (Creamer et al., 2012; Ravitch & Carl, 2016). The researcher's responses during the interview process should be bracketed so as to not reveal the researcher's thoughts or experiences pertaining to the phenomenon. Bracketing is intended to support the integrity of the data collection and analysis process (Creamer et al., 2012; Ravitch & Carl, 2016). I used semistructured, open-ended questions to explore the phenomenon of teachers' perceptions that also supported the role of researcher as the questions allowed participants' free responses related to the phenomenon being studied.

I used a reflective journal to remember, reflect, and monitor the responses from the interview. I also triangulated data by listening actively, asking questions, monitoring

time, distinguishing evidence, and triangulating evidence (see Yin, 2016). Miles et al. (2020) added that data quality involves triangulating across data sources and methods. I used publicly available state, school, and district data on student BMI to support the existence of student obesity at the study site. I interviewed 10 participants from various grade levels. I also conducted member checking with all participants to gain feedback on my interpretation the participants' response (see Ravitch & Carl, 2016).

Methodology

Participant Selection

Participants were from an elementary school in southeastern state. In the study, participants answered questions that were recorded and transcribed. Researchers use purposeful sampling by setting the criteria for the participant population who may be best able to inform the researcher about the problem being studied, thereby fulfilling the purpose of the study (Lodico et al., 2010; Merriam & Tisdell, 2016). Hence, I conducted a sampling of participants who were aware of the childhood obesity issues and had knowledge of the phenomenon being studied based on their life experiences (see Lodico et al., 2010; Merriam & Tisdell, 2016). The study elementary site staff monitor BMI of students annually and the school leaders and health care practitioners focus on healthy nutrition choices as part of Act 1220 (ACHI, 2022). Thus, the teachers were aware of the issue of overweight students and obesity. The inclusion criterion for the participants was that they were certified elementary teachers at the study site and had knowledge of the obesity and overweight issues of students.

To recruit participants, I obtained Walden Institutional Review Board (IRB) approval (no. 12-28-18-0112862). I obtained the names and email addresses of potential participants from a campus gatekeeper. I established that the teachers met the criterion of being teachers at the study site as I obtained potential recruitment names only from the study site. In December 2021, I emailed the letter of invitation to 42 potential participants who were in the recruitment pool. At the end of the first week of sending the electronic invitation to potential participants, 10 participants volunteered for the study. Therefore, I had met the recruitment goal of 10–12 participants.

According to Lune and Berg (2017), a small sample is essential to the qualitative researchers' ability to provide in-depth understanding of the phenomenon being studied. The sample size may be adjusted during the course of the investigation as analysis of data determines saturation and acceptable coverage of the phenomenon (Creswell & Poth, 2018; Merriam & Tisdell, 2016). Based on the population, the sample size of participants should be adequate to explore the phenomenon and obtain in-depth information. The sample population consisted of 10 participants who volunteered to participate out of 42 teachers in the building.

Participants were given the option of interviewing via a virtual platform using audio-only recording. Lune and Berg (2017) suggested that a small number of cases are needed in qualitative research design when selecting participants, as fewer participants allow for deeper inquiry with each participant. However, participants volunteered to participate in face-to-face, one-on-one interviews despite the continuing Coronavirus 2019 (COVID-19) pandemic. The participants and I took all safety precautions. Each

interview was conducted in a conference room in the school building individually and with a schedule.

Instrumentation

The interview questions for this qualitative study were designed to investigate the specific participant population's perceptions about student obesity and the challenges of teaching students about health issues. I created an interview protocol with input from the dissertation committee. Gaining feedback on the self-designed protocol helped support the content validity (see Ravitch & Carl, 2016).The interview questions were aligned to the research questions. I invited feedback on the interview protocol from my committee and made the suggested revisions. I conducted mock interviews to confirm the responses from participants pertained to the phenomenon of student obesity and overweight issues and how teachers described their situation and challenges related to instructing students related to nutrition. I used the interview protocol refinement phases to refine the interview protocol. Castillo-Montoya (2016) suggested that the following phases are followed to refine and develop a well-developed interview protocol: (a) ensuring interview questions align with research question, (b) constructing inquiry-based conversation, (c) receiving feedback on interview protocol, and (d) piloting the interview protocol. Hence, following the interview protocol refinement framework phases, I established content validity and that the interview protocol was well-developed to address the research questions, and purpose of the study (see Castillo-Montoya, 2016). In piloting the interview, I simulated the interview process on individuals to confirm the questions yielded the information desired and to solidify the process and approach for the

interviews. By obtaining the participants' responses through one-on-one interviews, I gathered information about the problem that was the focus of this study, the increasing percentage of obesity in the study school and district

Each interview was recorded, transcribed, and coded. Data on gender, grade level, and years of experience were documented from the interview recording and the interview protocol sheet. I used an interview protocol with eight questions to answer the two research questions and to address the purpose of the study. The interview protocol was aligned with the research questions and thus was designed explore participants' perceptions of student obesity and health and also participants' perceptions related to the challenges of teaching students about nutrition and exercise. Questions and probes were designed to support the purpose of the study. Therefore, the interview protocol was designed to explore participants' descriptions of student obesity, including nutrition, health, exercise and also participants' perceptions related to the challenges of teaching students about weight, nutrition, and exercise. The interview protocol with the accompanying probes were sufficient to obtain the information from the participants to answer the research questions and address the purpose of the study.

The data collection instruments were the interview protocol, audio tape, and the Otter.ai program. Also, I used field notes and a journal for reflective thinking along with codling and categories to develop themes. I developed the interview protocol with assistance from my committee.

I conducted the participant interviews using a self-developed interview protocol. I used the conceptual framework of Bandura's (1969) theory of social learning to guide the

development of the interview protocol. Bandura contended that people learn through observing and modeling. Bandura also emphasized the role of self-regulation of behavior. Therefore, I aligned the interview questions with the social learning theory and the research questions. The interview protocol contained eight questions. The interview questions explored the perception of teachers about the increasing student obesity and challenges they face in teaching students about health issues. See Table 2, which shows the alignment of interview questions to research questions.

Table 2

Alignment of Research Questions and Interview Questions

Research question	Interview questions
1. How do elementary teachers describe the current situation at their school with respect to student obesity?	. Describe your teaching background (e.g., years as a teacher, at this school, working with students who may be overweight). How would you describe your current role in nutrition education? How influential do you believe YOU, specifically are in changing students' nutrition knowledge? How do perceive the nutrition choices students make? How do you believe nutrition choices influence their weight and health? Tell me about any other nutritional program used in your classroom.
2. What challenges do elementary school teachers identify with respect to teaching students about health and weight issues?	Tell me how you feel about teaching students about nutrition as part of the school curriculum? How do you view the subject of nutrition compared to other subjects you teach (such as math, English, etc.)?

The interview protocol was representative of the body of research literature related to the subject and knowledgeable participants (see McKenzie et al., 1999). I used content validity by trusting the veracity of their own emerging analytical insights, while

being skeptical of interpretations and conventional assumptions (see Creamer et al., 2012). The interview questions were sufficient for gathering the necessary information for this study. The open-ended questions allowed participants to express themselves fully in response to the interview questions. O'Reilly and Parker (2012) concluded that qualitative research is concerned with the richness of the information rather than quantity of participants.

Procedures for Recruitment, Participation, and Data Collection

Once I obtained IRB approval, I emailed potential participants at the elementary study site, sending the approved letter of invitation, using my Walden University email account. I conducted individual face-to-face semistructured interviews with probes to collect information from 10 elementary teacher participants at the elementary study site. Interviews did not exceed 40 minutes and were scheduled during noninstructional time. Within 3 days, I recruited 10 participants. Thus, a follow-up letter of invitation to the participant recruitment pool was unnecessary. The 10 participants from the elementary study site met the inclusion as certified elementary teachers and self-selected into the study. The consent form was sent to the participants via email. Interview times and dates varied based on participant request. I used a systematic process before and after the interview. Before the interview began, the informed consent was read and explained. I reviewed the consent, reminded participants that they had received a copy via email, and also was offered a copy of the consent to the participants. I reviewed the purpose of the interview, the confidentiality of the study, and described to them that they could leave the study at any time. I also described the member-checking process, described that I would

send a draft summary of the findings and that the purpose was to obtain their feedback on my interpretation of the information shared by them during the interviews. After confirming that the participants had no further questions, I proceeded with the interview protocol. Participants exited the interview in a systematic fashion. I reminded the participant of the member-checking process, asked them if they had any questions, thanked them for their time and gave them a token of my appreciation for their time in the form of a gift card.

The data collection was appropriate for the research on teachers' perceptions of how nutrition affects childhood obesity and challenges in teaching students health. I interviewed teachers from one elementary school in a southeastern state. The interview questions concentrated on nutrition, curriculum, eating habits, and parental involvement. Interview questions were appropriate to the type of basic qualitative study. I developed the interview protocol with support from the dissertation committee.

Before the interview began, the informed consent was read and explained. A copy of the consent was offered to the participants. The interviews were audio recorded using the cell phone and tape recorder. Also, I used the same interview protocol sheet for each participant. After each interview, I used Otter.ai program to transcribe the interview.

I used the data collection guidelines from Miles et al. (2020). The interview protocol was a sufficient tool to explore the phenomenon of how participants described their current situation at school with respect to student obesity and the challenges teachers identified with respect to teaching students about health and weight issues. Using the interview protocol with the eight open-ended questions and probes supported

the sufficiency of the data collection. The sufficiency of the data collection was also supported with interview protocols that provided a thorough and systematic approach to the interview process.

The data were gathered and recorded from December 2021 through January 2022. The data were gathered in a conference room in the school. I conducted the interviews at the study site after dismissal of the students. The teachers were interviewed in a conference room individually according to their requested interview day. When each participant arrived, I reviewed the consent form and procedures for the interview process. I reviewed the participant rights and confidentiality. Before conducting each interview, I reminded the participants that the interview questions were voluntary and that they could stop participating in the study at any point. I asked each participant if they wanted a copy of the informed consent form. Every opportunity was given to make all participants feel comfortable. Interviews were audio recorded and transcribed. During the process, the interview protocol sheet was used to make field notes of any behaviors and concerns. Interviews lasted an average of 24 minutes, ranging from 18–29 minutes.

The participants were asked eight interview questions. Before they left, they were thanked and given a $5.00 gift card. The systems for keeping track of data and emerging understanding involved the use of a reflective journal and the protocol sheet. Data on gender, grade level, and years of experience were documented from the interview recording. I conducted each interview with professionalism.

Data Analysis Plan

I transcribed the interview using Otter.ai and listened to each interview several times to ensure each transcription was correct. I sanitized each transcript, making sure no identifiable information remained related to the participant or study site. I read and reread each transcript multiple times. Table 2 reflects the interview questions used to answer each RQ. I analyzed these data using Saldana's (2015, 2018) three-step model of data analysis. Saldana recommends coding the data, identifying the categories and then determining the themes that emerge from the categories. Saldana also describes that more than one cycle of coding may be conducted. Other qualitative researchers have recommended similar steps in the data analysis to Saldana, however, additional steps are noted and considered (see Miles et al., 2020).

In reviewing interview transcripts qualitative researchers assign codes to words, phrases, and paragraphs (Saldana, 2015, 2018). More than one cycle or round of coding may be conducted according to Saldana (2015, 2018). Coding is a way of summarizing and segmenting data (Miles et al., 2020). According to Miles et al. (2020), codes should "relate to one another in coherent, study-important ways; they should be part of a unified structure" (p. 75). I started with open coding of the interview responses. The interview responses were reviewed repeated times to clarify the data. During the first phase, I became familiar with the codes. I read and reread the transcripts and expanded the open coding. As coding proceeded, I developed ideas and reactions to the meanings in the coding (see Miles et al., 2020). Some of the codes developed from the responses were similar and thus were combined into a single code. Coding took multiple rounds. After

generating the codes and transferring the codes onto an Excel spreadsheet, I began examining the codes for possible categories and themes.

In the categorizing phase of analysis, I examined the interview transcripts for patterns, commonalities and differences (see Miles et al., 2020). Miles et al. (2020) stated that pattern codes have four interrelated summarizers: "categories or themes, causes or explanations, relationships among people, and concepts or theoretical constructs" (p. 80). After identifying the categories, I interpreted the data. I used the categories to develop themes. I utilized a Microsoft Excel spreadsheet and Word tables to help organize and codes and categories generated from analysis of the transcripts. Miles et al. (2020) stated interpretation is what the experience means to the people involved. Themes are identified by the researcher and are intended to assist in understanding the participants' communication and to help derive meaning (see Yin, 2016).

Issues of Trustworthiness

To be trustworthy, a basic qualitative study must be framed with mitigated researcher bias through detailed explanation of all processes and awareness of bias (Miles et al., 2020). After the analysis of data, participants received a copy of the draft findings for approval or input. I emailed each participant a copy of the draft findings. Member checking consisted of emailing participants the direct quotes merged into categories and themes. Two participants out of the 10 responded. There were two participants who responded by email confirming their review and the draft findings. I followed up with each participant by phone regarding any input or feedback regarding the draft findings. I

followed up with a phone call to the remaining participants to ensure validity of the responses.

The interpretation of the data accuracy and consistency are trustworthy sources (Yin, 2018). In this study, consideration of credibility, dependability, and confirmability demonstrated trustworthiness of this research.

Credibility

The proper collection of the data promotes credibility. Miles et al. (2020) added that the process of credibility includes consistency over time and across researchers and methods. I used the same interview protocol with each participant to increase credibility (see Denzin & Lincoln, 2017). A further approach, member checking, was used to validate the accuracy of the analysis of the interview data, as recommended by Lincoln and Guba (1985) and Creswell and Poth (2018). The participants were e-mailed and given a week to respond with any changes. I followed up with a phone call.

Transferability

Transferability is the ability to transfer the data with consistency and with integrity. Miles et.al. (2020) stated that some methodologies support transferability to other populations and contexts better than others and is the responsibility of the reader to determine transferability. By giving thick description (see Lincoln & Guba, 1985) of the data and research setting, I allow the reader to determine whether findings might transfer to other populations or settings.

Dependability

Dependability is reliance on the quality of work. Miles et al. (2020) stated that in a dependable study, “the findings are clear, coherent, and systematical” (p. 306). It was a challenge to review and understand some of the transcripts. The program Otter.ai allowed me to listen as many times that was needed. To promote dependability, I kept careful records of the data collection and analysis processes, as recommended by Ravitch and Carl (2016).

Confirmability

Confirmability means another researcher could replicate the findings (Ravitch & Carl, 2016). To enhance confirmability, researchers must be aware of and mitigate their personal biases during the research process (Miles et al., 2020). The trustworthiness of the study relies on transparency regarding the values and expectations of the researcher. Prior to and during the study, I used bracketing and a reflective journal to understand my biases. According to Creamer et al. (2012), it is a challenge to set aside bias and personal beliefs. By using bracketing, I could focus on the participants’ responses rather than my own beliefs.

Ethical Procedures

Participation was completely voluntary. All participants’ rights and confidentiality were protected using coded identities and consent forms. All answers will remain locked in a secure place until 5 years after the study is completed, at which time these data will be destroyed. While gathering, analyzing, and reporting results, the following steps were followed:

1. Participants' names were disassociated with the form of responses.

2. An accounting of all data was made.

In disseminating research results, I will not include any identifying characteristics such as a teacher's name or the study school. Because identities are confidential, the participants' names are protected, and no names have been used. All information was always kept confidential.

Summary

I conducted this basic qualitative study at an elementary school in a southeastern state. In this chapter I explained the research design and rationale, role of the research, participants, instrumentation, data collection, data analysis, trustworthiness of the study, and ethical procedures. I recorded, transcribed, and coded the interview responses. The consent form was read before the interview started, and participants were offered a copy of the consent form. Interviews were completed then transcribed and coded. Categories and then themes were developed to answer the research questions. The participants responded on how teachers support students' nutrition and healthy choices to reduce childhood obesity. In Chapter 4, I will present the results.

Chapter 4: Results

The purpose of the basic qualitative study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. Qualitative research accounts are lacking regarding elementary teachers' descriptions of student obesity and how they perceive the problem of increasing student obesity and the challenges teaching students about health and weight issues. The results of this study will hopefully lead to a deeper understanding of teachers' perceptions of nutrition in relation to student obesity and the challenges they face teaching students about health and weight issues. Furthermore, these study findings may be used to inform stakeholders' decision making related to elementary student obesity and possible approaches that could be considered in teaching students about health issues or offering teachers professional development or support.

Using semistructured one-on-one interviews, I collected data from 10 elementary teachers in one school in a southeastern state. I analyzed these data using open coding to identify codes, categories and three emerging themes. The conceptual framework for this study was based on Bandura's (1969) social learning theory. Bandura contended people learn through observing and modeling human behavior. Bandura emphasized the role of self-regulation of behaviors in the learning process. In this basic qualitative study, the research focus was on the teachers' perceptions of student obesity and how they teach students about nutrition and health. The research questions for this study were as follows:

RQ1: How do elementary teachers describe the current situation at their school with respect to student obesity?

RQ2: What challenges do elementary school teachers identify with respect to teaching students about health and weight issues?

In Chapter 4, I present the research data and findings. I first describe the setting and sample. Then, I detail data collection, followed by the themes developed through data analysis. After reiterating evidence of trustworthiness, I provide a summary of the chapter.

Setting

I conducted the study in an elementary school in a southeastern state. During the 2020-2021 school year, the study school district had an overall enrollment of 11,742 students and employed the full-time equivalent of 876 teachers (National Center for Education Statistics, 2022). The district includes 16 elementary schools, four middle schools, and four high schools. The student demographics of public schools in the district for 2015–2019 averaged at 57.7% White, 42.4% Black, 5.8% Hispanic, 3.3% Asian, and 7.1% of multiple races (National Center for Education Statistics, 2022). In the 2020-2021 school year, 41 teachers were employed at the elementary study site, and 530 students were enrolled in kindergarten through fifth grade. The student population at the study elementary school reflected the following percentages by student ethnicity: 59% Black, 24% White, 10% Hispanic, and 6% multiracial (National Center for Education Statistics, 2022).

Demographics

With permission from the district and the principal, I emailed 42 teachers at the study site inviting them to consider participating in the study. Ten participants

volunteered for this study. All participants were certified teachers in the district. I interviewed 10 participants, of whom seven had 5 or more years of teaching experience. I assigned each participant a numeric pseudonym to maintain confidentiality. I conducted one-on-one, face-to-face, semi structured interviews. I conducted participant interviews after school in a private conference room at the study site. All participants indicated that they had worked at the school for at least 2 years. The participants' years of experience teaching varied, ranging from 2–28 years. The participants' grade levels ranged from first grade to fifth grade. The participants included educators and reflected the participants' years of experience, years in current role, grade level taught, gender, and ethnicity.

Data Collection

Interview Process

Prior to the interview process, I reviewed researchers' suggestions for best practices in the literature and I also reviewed electronic links that I received from my committee. I rehearsed using the interview protocol with nonparticipants who had no connection to this research study or with the study site. Thus, I conducted two practice interviews, sharing the audio files and one transcribed interview with my committee. I scheduled each interview during noninstructional time and at the participant's requested time.

I followed a specific procedure before and after each interview. I conducted the interviews at the study site after dismissal of the students. The teachers were individually interviewed in a conference room according to their requested interview day. Each teacher was interviewed once. Interviews lasted between 18 and 29 minutes (see Table

3). The duration of the interview varied based the participant's knowledge of nutrition and the activities they conducted in their classrooms pertaining to nutrition and health. In qualitative research, the researcher is considered the primary instrument for data collection (see Creswell & Poth, 2018; Yin, 2016).Therefore, the interview protocol and practices that I used were critical to support the quality of the data collected (see Creswell & Poth, 2018; Yin, 2016).

Table 3

Length of Interviews

Participant code	Duration (min)
P1	28.49
P2	25.50
P3	22.06
P4	24.17
P5	21.38
P6	27.18
P7	29.25
P8	18.38
P9	21.10
P10	22.41

I conducted the 10 participant interviews in person, after school hours. The interviews lasted an average of 24 minutes. I recorded all 10 interviews using a digital device. I recorded field notes during the interviews. Yin (2018) recommended recording reflections, insights, and observations during the interview process to support recall of the interview. The field notes helped me to remember the interviews and to make associations between the interview information obtained and the problem I was studying

(see Lincoln & Guba, 1985). Field notes are important in qualitative research and recording field notes is considered a standard practice in qualitative research (O'Brien et al., 2014; Patton, 2002). Field notes provide important information in qualitative research and help provide a context for the study. Field notes can be used to document observations, researcher reflections and impressions, sights, and sounds and can provide meaningful information to conduct the data analysis when combined with other data collection tools (Elo & Kyngas, 2008). Field notes can be taken during the interview, using a technique to capture short words while also staying engaged with the participant (Phillippi & Lauderdale, 2018). More information may be added later, such as reflections and connections (Phillippi & Lauderdale, 2018).

I digitally recorded each interview and used a software program for transcribing the interviews. I focused on maintaining a consistent interview process, asking each interview question and using the probes to deepen the participant's response. I conducted to the introduction to the interview which included rapport building. I explained the purpose of the interview, reminded the participant about the confidentiality of the study, reminded them they had received the notice of consent through email, and shared that they could leave the study at any time and choose to not answer any question. I also described the member-checking process, sharing that I would send a draft summary of the results for their review to obtain their feedback on my interpretation of the information they shared. I asked the participant if they had any further questions.

I responded to any questions and then began the interview process. I asked all questions in the order listed on the protocol. Consistency in the interview process is

important in qualitative research (Ravitch & Carl, 2016). I used prompts to obtain more information from the participants. I listed the prompts on my interview protocol so they were visible to me during the interview.

I concluded the interview protocol by using the before and after procedures. I asked the participant if they had any questions. I thanked the participant for their time and provided them with their gift card as a token of appreciation for their time and participation. I summarized the member-checking process and described how they would receive an emailed draft of the findings, once completed, to provide any feedback or comments. I gave contact information should they have any questions.

I emailed each participant a summary of the draft findings after completing the data analysis. Member-checking responses were simply, “It looks good.” Participants offered no changes in the data analysis findings. I followed up with the participants who did not respond and left a voice mail regarding any input they had regarding the draft findings.

Methods to Record Interview Data

I recorded the interviews using a digital device. After the interview, I saved the audio recording on a USB drive. I transcribed the audio file using Otter.ai, a program designed for transcription. I manually cleaned the transcriptions to ensure accuracy. Data will remain in a locked file cabinet in my home office. I will store the information collected for 5 years according to the Walden University IRB requirements. After 5 years, I will delete and destroy and all electronic recordings and paper copies of these data.

There were no variations from the planned protocol and no unplanned or unusual events that occurred during data collection. The COVID-19 pandemic continued to be a concern for participants, however the participants felt comfortable to participate in a face-to-face interview rather than on a virtual platform. CDC (2021) recommends the following: Get vaccinated, protect yourself, wear a mask, wash your hands, stay 6 ft. apart in crowds and cleaning and disinfecting your facility routinely. In the next section, I describe the data analysis, including the open-coding process and themes that emerged. I also discuss discrepant cases.

Data Analysis

In qualitative research, researchers analyze data by reviewing, coding, recoding, synthesizing, categorizing, and identifying emerging themes and making meaning of data that is gathered to study human experiences (Saldaña & Omasta, 2018). Saldaña and Omasta (2018) stated, “Qualitative analysis is an active process with one’s mind and body to find patterns in the data and to articulate their interrelationships” (p. 4). Overall, there are different approaches to qualitive analysis, and the researcher must select the coding and analysis process that represents meaning of the data collected (Miles et al., 2020; Saldaña, 2015). Miles et al. (2020) indicated that qualitative data analysis “moves from one inductive inference to another by selectively collecting data, comparing and contrasting this material in the quest for patterns or regularities” (p.4). I transcribed and cleaned up the transcripts so they were free of any identifiable information and so that the transcriptions were accurate representations of the interviews. Next, I pasted all of the

transcripts together in one word document and reflected the beginning and end of each participant by the assign numeric pseudonym that was used to protect confidentiality.

I reviewed the transcripts of the participants multiple times to internalize the participants' statements. I reviewed my field notes that reflected my thoughts and reflections during each interview process. In the first cycle of open coding, I focused on coding words and phrases that conveyed a specific meaning related to the research questions and purpose of the study (see Saldaña, 2015). Saldaña (2015) contended that the qualitative researcher creates a conceptual code that represents some a construct that also connects to the researcher's interpreted meaning of the coded data. Each code is used later to detect patterns, categories, differences and to further combine codes into categories (Saldaña, 2015). I assigned open codes to the participants' responses from the interview questions. Table 4 reflects a sample of open codes and transcript excerpts.

Some codes were combined over a few rounds. I also sorted codes by research question. The codes for Research Question 1 are listed in Table 5. Codes for Research Question 2 are presented in Table 6.

Table 4

Sample of Transcript Excerpts for Codes

Participant	Excerpt	Code
P10	"If you're malnourished, your brain is not going to grow and develop and work as it should. . . . The academic aspect becomes tainted."	Negative outcomes of poor nutrition: academics
P9	"They'll be able to really learn throughout the school day, if they have a good diet."	Negative outcomes of poor nutrition: academics
P2	Students "may have a juice and a bag of hot chips. And they've got three or four difference pieces of candy in there, and they consider that as a lunch."	Junk food from home
P1	"I feel that my role is vital."	Teachers play a vital role
P1	"We must model"	Role model
P3	"I try to be a role model"	Role model
P2	"Students are basically wanting to take ownership for their healthy eating"	Empower students to make healthy choices
P3	"It's not hard to make healthy choices. . . . They can take that power in themselves"	Empower students to make healthy choices
P4	"You talk to them about their lunch"	Discussion about lunches
P9	"It seems liked sometimes the parents don 't have maybe training, uncertainty	Involve/educate parents
P 9	"Maybe try to figure out to connect parents to getting stuff"	Family Income/environment
P10	"A teammate teacher talked about it would be fun to take the little space that over there to make a garden as part of science"	Resources: external/grants (inc. for garden)

Table 5

Open Coding for Research Question 1: Current Situation

Code	No. times mentioned
Students overweight	9
Empower students to make healthy choices	19
Junk food from home	11
Embedded: math	12
Encourage exercise	10
Embedded: science	8
Role model	10
Need to learn about portion size	7
Importance in curriculum; aren't going to learn nutrition at home	7
Cafeteria food healthier than food from home	6
Cafeteria food: students opt not to eat healthy foods	6
Embedded in curriculum	5
Physical education	5
Negative outcomes of poor nutrition: academics	7
Discussions about lunches	7
Kids share info with parents	7
Learn early for lifelong impact	6
Do not exercise or play	5
Food pyramid	5
Negative outcomes of poor nutrition: lack of energy	4
Embedded: reading/writing	4
Cooking: in class	4
Embedded: cultural foods/social studies	5
Encourage kids to try new things	4
My Plate	4
Cooking: external	4
Teachers play a vital role	3
Separate class/presentation on nutrition	3
Student peers	6
Negative outcomes of poor nutrition: poor sleep	3
Eat what they are used to	3

Table 6

Open Coding for Research Question 2: Challenges

Code	No. participants mentioning code	No. times mentioned
Involve/educate parents	7	10
Family income/environment	6	11
Resources: external/grants (inc. for garden)	5	6
Embedded in curriculum	5	5
Challenge of lack of time	4	5
Resources: community	4	4
Resources: unaware of any programs	2	2
Resources: school PTA	1	1

Following the coding, which involved the compiling and disassembling steps described by Yin (2016), I reassembled the data in the form of categories and interpreted into themes. I sorted codes into categories and then developed themes. Pattern coding is a way of grouping codes into a smaller number of sets (Miles et al., 2020). Examining the coding of the first few cycles helped with determining patterns and grouping the data into categories. Tables 7 and 8 show the development of the codes to categories and then corresponding themes for each research question. The codes for Research Question 1 were grouped into nine categories to form four themes (see Table 7). The codes for Research Question 2 were grouped into three categories to form two themes (see Table 8).

Table 7

Themes and Categories for Research Question 1: Current Situation

Theme	Category	Code
Theme 1: Students are overweight & need nutrition instruction.	Students are overweight	Students overweight
		Outlier: does not discuss overweight to avoid bullying
	Negative outcomes of poor nutrition	Negative outcomes: academics
		Negative outcomes: lack of energy
		Negative outcomes: poor sleep
	Students have unhealthy habits	Unhealthy habits: need to learn about portion size
		Unhealthy habits: do not exercise/play
		Unhealthy habits: junk food from home: sugar, soda
		Unhealthy habits: eat what they arere used to
Theme 2: Teachers are vital for modeling and empowering students to make healthy choices for lifelong impact.	Vital role model	Vital role
		Role model
	Empower students to make healthy choices	Empower students to make healthy choices
		Learn early for lifelong impact
Theme 3: Teachers use various strategies to teach students health & nutrition.	Informal strategies	Discussions about lunches
		Student peers
		Encourage exercise
		Encourage kids to try new things
		Kids share info with parents
		Food pyramid
		My Plate
	Formal strategies embedding nutrition into the curriculum	Importance in curriculum/Are not going to learn nutrition at home
		Embedded in curriculum
		Outlier: doesn't teach about nutrition, used to in science class
		Embedded: math
		Embedded: science
		Embedded: cultural foods/social studies
		Embedded: reading/writing
		Cooking: external
		Cooking: in class
	Separate classes	Physical education
		Separate class/presentation on nutrition
Theme 4: School influence relates to providing free and healthy choices in the cafeteria.	Cafeteria food and free meals	Cafeteria food healthier than food from home
		Cafeteria food: students opt not to eat healthy foods

Table 8

Themes and Categories for Research Question 2: Challenges

Theme	Category	Code
Theme 5: Schools need to involve & educate parents regarding nutrition.	Parents	Involve/educate parents Family income/environment
Theme 6: Teachers need resources, specifically for a garden.	Garden	Garden
	Need resources	Resources: Community Resources: external/grants (inc. for garden) Resources: School PTA Resources: unaware of any programs
	Resource of time	Lack of time as challenge

Discrepant Data

A few discrepant instances arose in the data. Miles et al. (2020) referred to discrepant cases as possible rival explanations regarding the phenomenon studied and interview responses provided by participants. Yin (2016) described discrepant data as rival thinking and stated that when reassembling the data, researchers should make constant comparisons, looking for negative situations during interviews. Participant 7 was reluctant to admit that any students were overweight or obese, citing different metabolisms or circumstances for each student. Participant 7 stated they did not teach much about nutrition, instead emphasizing teaching the students not to bully others for their size. Participant 7 also stated they did not model healthy eating for students. Participant 9 noted students were not all the same size but did not know how to determine whether students were overweight. Another outlier was Participant 8, who did not feel she played a vital role in helping students learn to make healthy choices, describing her role as “just a little bit” influential. Additionally, I noticed that some participants did not have as much experience related to nutrition or knowledge as other participants, and thus

the depth of responses varied by participant. For example, one participant could not remember all five food groups.

Evidence of Trustworthiness

This information that was recorded is confidential. The information obtained from the interviews was transcribed, de-identified, and stored on an USB drive and placed in a locked file cabinet along with paper copies in the researcher's home. The research questions were clear and congruent with the study. The researchers' role and status with the site have been explicitly described. Additionally, the findings showed meaningful parallelism across participants (see Miles et al., 2020).

Credibility

The process of credibility includes consistency over time and across researchers and methods (Miles et al., 2020). I used the same interview protocol with each participant to increase credibility (see Denzin & Lincoln, 2017). I used participants from different grade levels, experiences, and ethnicities. I used member checking to validate the accuracy of the analysis of the interview data, as recommended by Lincoln and Guba (1985) and Creswell and Poth (2018).

Transferability

Findings in this study may be transferable to similar contexts or populations. By giving thick description (Lincoln & Guba, 1985) of the data and research setting, I allow the reader to determine whether findings might transfer to other populations or settings. Findings are particularly salient to the study site in terms of potential for professional development or classroom practice.

Dependability

Dependability means the process of the study is consistent and reasonably stable. This study's general methods and procedures are described explicitly and in detail. I used an interview protocol and kept careful records of the research process. Giving detailed description provides a complete picture of the process (Miles et al., 2020).

Confirmability

To enhance confirmability, I was aware of and mitigated my personal biases during the research process (see Miles et al., 2020). Throughout the study, I used bracketing and a reflective journal to understand my biases, as described by Creamer et al. (2012) and Creswell and Poth (2018). By using bracketing, I could focus on the participants' responses rather than my own beliefs.

Results

The purpose of the study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. I collected data from elementary teachers relating to the phenomenon of increasing student obesity and the challenges they face in teaching elementary students about health issues at the study site. The participants' responses to the interview questions addressed the research questions (see Table 2 for alignment of interview questions and the research questions). The conceptual framework for this study was Bandura's (1969) social learning theory. Bandura contended people learn through observing and modeling. Bandura emphasized the role of self-regulation of behavior and teachers. This conceptual framework informed the research findings.

Research Question 1 Results: Current Situation

How do elementary teachers describe the current situation at their school with respect to student obesity? Interview results developed into four themes to answer Research Question 1: (a) Students are overweight and need nutrition instruction, (b) teachers are vital for modeling and empowering students to make healthy choices for lifelong impact, (c) teachers use various strategies to teach students health and nutrition, and (d) school influence relates to providing free and healthy choices in the cafeteria. Each theme is discussed with excerpts from the interviews.

Theme 1: Students Are Overweight and Need Nutrition Instruction

Students Are Overweight. Results indicated all participants had students who were overweight or obese in their classrooms. Even the participant who was hesitant to discuss student weight other than to remind children to treat each other with respect stated that she had overweight students. Participants observed the negative outcomes of poor nutrition and described students' unhealthy habits.

Negative Outcomes of Poor Nutrition. Four interviewees noted the effect of nutrition on academics. Two participants noted poor nutrition affected sleep. Teachers observed that students with inadequate nutrition lacked focus. P10 explained, "If you're malnourished, your brain is not going to grow and develop and work as it should. If you're hungry, period, you're not going to focus on any academic content." P3 agreed that student "brains can't fully function if they're lacking nutrition." The converse is true, as P9 pointed out: "If they eat healthy food, . . . they'll be able to really learn throughout the school day, if they have a good diet."

Four interviewees described the lack of energy displayed by overweight students who eat unhealthy foods. P1 said,

> I'm at the school, working with students who are obese. Those kids tend not to have as much energy or stamina. A lot of times they're not as active even in the classroom setting. They're not as active as other students.

P2 and P5 described the "sugar crash" students experienced. P5 explained, "You see kids are overweight, it's hard for them to exercise, don't want to do anything. . . .They come to school, they're dragging."

Students Have Unhealthy Habits. Seven interviewees described the junk food students brought from home. Participants described student lunches with chips, soda, and candy. P9 said, "It's kind of hard to be like, oh, you need to be healthy, but all your parents buy you is junk food. So, it's kind of hard sometimes, but maybe they'll remember as they get older." P10 pointed out, "They just haven't been exposed to a variety of food." P9 stated students eat "what they're familiar with," like chicken nuggets. Five interviewees noted students did not know about portion sizes. Four teachers noted students do not play or exercise. P1 said, "They don't play outside like they used to," opting for screen time.

Theme 2: Teachers Are Vital for Modeling and Empowering Students to Make Healthy Choices for Lifelong Impact

Vital Role Model. Three interviewees stated they play a vital role in teaching students to make healthy choices. Two noted that as teachers, they spend 8 hours a day with students, making their role "influential." P1 stated, "I feel that my role is vital. They look at what we do, what we say what we eat. They're always watching us. So, I feel that

I can have a large impact on them." P2 concurred, "We have the influence to do it. Because they watch us. For example, my students, they always ask, 'What are you eating today? What do you have?'" P3 said, "I can show them through what I do and model for them that I'm making healthy choices, so you can make healthy choices." P5 described "leading by example." P3 said, "I try to be a role model. I try to show them that there are easy ways to make healthy choices." Showing that eating healthy is not difficult empowered students.

Empower Students to Make Healthy Choices. Seven teachers described empowering students to make healthy choices. P2 said, "Students are basically wanting to take ownership for their healthy eating." Participants described teaching students to choose fruit over a can of soda, for example. P5 said, "A lot of times the students don't have any control over really what they eat, depending on what their parents bought, right? So, I'm giving them the opportunity to make those choices and, you know, be held accountable." P3 said, "It's not hard to make healthy choices. ... They can take that that power in themselves. Yeah. Right. And do it themselves."

Learn Early for Lifelong Impact. Students must learn at a young age to develop lifelong healthy practices. P3 stated,

> I think that teaching them about their choices, and their nutrition, and not just giving them just not just meeting the needs, but also teaching about that so that they can like and modeling that for them, then those can lead to lifelong decisions.

P1 emphasized teaching elementary school students about excess sugar, which leads to diabetes, a disease student likely have observed in family members. P10 stated, "Their

choices . . . now become habits, and we want to make sure that these habits are good habits." P3 said, "At a young age, we can help them set themselves up for success for the rest of their life."

Theme 3: Teachers Use Various Strategies to Teach Students Health and Nutrition

Informal Strategies. Teachers used informal strategies to teach students about nutrition. Six interviewees mentioned encouraging exercise during recess. P3 stated, "We try to do a lot of movement in my class." Participants were not consistent with their exercise recommendations, however, with P9 recommending 30 minutes a day or even every other day, and P4, the physical education teacher, citing 80 minutes per week.

Four interviewees described having informal discussions about their lunches or their students' lunches, involving student peers in the process.P2 said,

> For example, my students, they always ask, "What are you eating today? What do you have?" I bring in fruit, and so they see me eating apples and oranges. So, they want to know what I'm eating compared to what they're eating. ... It kind of sparks the conversation.

P2 pointed out that such conversations are influential as students share information with their peers. P2 recommended teaching nutrition "through peer interaction." P2 elaborated that students "have those conversations with their friends" comparing the cafeteria choices, such as a ham and cheese sandwich versus tacos, and of change their choice as a result. P7 reiterated, "Some of the kids started to take an active interest in their own, you know, I can hear conversations, . . . 'I'm not going to eat that, that's not good,' or 'Oh, I

had enough of that.'" Informal discussions with teachers led students to retain nutrition knowledge and share knowledge with each other.

Further, as a result of these discussions, students would share their new preferences or nutrition knowledge with their families. P2 explained, "Some of them will come back when they bring their lunch again, and they'll say, "This time I have a sandwich, I have this." When they added in some things, they may still have the chips and the candy, but they've added some other things to that lunchbox." The discussions about teacher and student lunches led students to share the information at home and bring somewhat healthier lunches to school.

Teachers encouraged students to try new foods and found that students shared their new preferences and knowledge with parents. P9 said,

> So, I just always encourage them, maybe try something different and just see if you like it, and if you don't, then you know. So, and then maybe if you do like it, tell your mom, "Hey, can we try to get this?" or something like that.

P1 said, "We have access to bring those things into our schools, to bring those fresh vegetables, those experiences, so our kids can taste, touch" new foods. P3 said,

> Maybe they're not getting that education at home on, you know, healthy eating habits. Because, you know, sometimes parents are just doing the best they can. So maybe they don't know, you know, better, but and then also, if they learn that information here at school, then they can take that information home and share with their families.

P2 agreed:

> So, if we provide those first few steps to healthy eating, they're going to run with it, they will take that information back home to the parents, and then the parents will—some of them will—be willing to get on board, because they see that their kids are passionate about eating healthy. ... Students are basically wanting to take ownership for their healthy eating. Right. And so, they're asking their parents for help by providing the healthy food.

Through informal discussions, the knowledge of nutrition spread to peers and to student families.

Finally, four participants referred to the food pyramid, and three mentioned My Plate (n.d.), a program through the U.S. Department of Agriculture. P9 mentioned showing students the food pyramid and explaining the importance of fruits and vegetables rather than carbohydrates. P4 said, "We use My Plate. . . . They have a whole curriculum for it." P2 described My Plate: "Students got a chance to go in and play some of the games where they put food on the plate to see if it was going to go in the right spot. So, there are a few activities that you can do."P2 described resources available for use in the classroom as well as to send home to parents.

Formal Strategies Embedded in the Curriculum. Five participants emphasized the importance of including nutrition in the curriculum. P1 said, "I think it's important because where else are they going to learn it?" P3 reiterated the importance of nutrition in how students learn. P1 described adding nutrition into the curriculum as "crucial" to prevent childhood obesity and diabetes. Five participants stated health, exercise, and nutrition should be included in the physical education curriculum. Additionally, most

participants described ways to embed nutrition into the elementary school curriculum. Teachers taught nutrition in combination with math, science, reading, writing, social studies, and cooking. P3 said, “You can just incorporate in and make every part of the lessons, no matter what you’re teaching.” P3 described making the effort to not be “rigid with our curriculum” and described portion sizes, vegetables, and recipes in terms of math and science.P7 also described using portion size, nutrition, and metabolism when teaching math and science, stating, “I don’t think it [nutrition] should be taught in isolation. I don’t think the kids should learn anything in isolation.”

P1 described teaching nutrition with math and science but also social studies: “We can learn about where things are grown, because a lot of times kids don’t know where food comes from.” Participants described learning what other cultures eat, often in combination with a cooking class. P3 said, “There are a lot of different cultures in our classrooms, so we can incorporate the nutrition had the differences in the cultures, and so that’s going to make a connection to the students.” P7 described cooking in class as teaching students how to prepare healthy meals for themselves and their siblings. Such formal strategies engaged diverse classrooms and also led students to take their knowledge home for practical use.

Theme 4: School Influence Relates to Providing Free and Healthy Choices in the Cafeteria

The influence of the school environment included healthy and often free food from the cafeteria. Five interviewees emphasized that school cafeteria food was much healthier than the junk food students brought from home. P4 said, “I think the kids that eat in the cafeteria, they’re probably getting the best deal as far as getting everything you

need for nutrition." P3 emphasized the need for free breakfast and lunch, currently provided at school with help from a grant; without the program, many students would not eat breakfast. Additionally, P7 noted the importance of giving students healthy choices, "like something as simple as sometimes they give them a choice between apple or orange."

Teachers also noted students opt not to eat healthy foods at times, preferring unhealthy foods they are accustomed to. P5 said, "A lot of the times the choices that students make is that they want that carb load. . . . They just don't make the right choices when it comes to their nutrition and their health." P8 described seeing a lot of fruits and vegetables going to waste in the cafeteria. P1 said,

> We have access to bring those things into our schools, to bring those fresh vegetables, those experiences, so our kids can taste, touch.... When it's offered in the cafeteria, sometimes they take it and eat it. Sometimes they don't.

The opportunity to eat healthy foods and a breakfast was a positive influence of the school on children's nutrition. Convincing children to choose healthy options remained a challenge.

Research Question 2: Challenges

What challenges do elementary school teachers identify with respect to teaching students about health and weight issues? Teachers indicated parent lack of knowledge or financial limitations as a challenge. Additional challenges were lack of resources, including time, to implement a garden.

Theme 5: Schools Need to Involve and Educate Parents Regarding Nutrition

Six participants referred repeatedly to the limitations of family income. Teachers stated fresh fruits and vegetables were not as affordable as foods with corn syrup. Additionally, some parents lacked cars, and the community was a "food desert" (P3). As a result, students brought gas station food to school. Teachers stated junk food was cheaper and more accessible to families in the area.

Teachers stressed the need to involve and educate parents on healthy foods and exercise. P2 said parents needed to learn to "balance it out and still make it affordable, so that you could do that, and your child can still have a healthy meal." As noted in the discussion for Theme 3, students took knowledge home with them. However, more can be done. P2 said,

> We could reach out to the parents maybe send you know, sent home a brochure with some information, oh, this is a website where you can go and see this. Even if we just gave the kids just a little poster for My Plate, they could take that home, they could put it up, they can talk to their parents about it. There are tons of resources available that we could use to help the parents and try and communicate with them.

P5 said, "Educate the parents, like we have parent nights talking about it." P10 said, "They families don't know how [to provide nutrition], and we must find a way to reach out to them and teach them." P9 noted the need for parent training, stressing that healthy food influences how children learn. Such training could include information related to family history and diabetes.

Theme 6: Schools Need Resources, Specifically a Garden

In addition to the need for parent education, teachers described the need for more resources. The prime resource mentioned was a school garden the school used to have, supported through a grant. P1 said the garden included a butterfly garden and involved parents in a club. Teachers enthusiastically embraced how they could use a garden to teach nutrition, expose students to new foods, empower students, teach science, and involve parents. Teachers described teaching students about lifecycles, caterpillars, water, and plant processes. P3 explained,

> They used to have a garden here. I could implement that into my science curriculum, you know, the planting and the lifecycle, but then also we could harvest whatever we grow, and then that would give that would give the children an opportunity to try things that they may not get to try, things that that they may not get exposed to. . . . I can show them that it's not as complicated to have healthier food choices. You know, you can have like just a small pot at home, even if you live in apartment, on your porch.

P7 said, "I would love for us to do have another garden. . . . I would love for the kids to get back into growing some things and wash it up and put it on a plate."

The obstacle was the grant to get the garden up and running. P8 said the teachers had never written a grant before. P1 described the need for community resources:

> I think we need more community gardens. I think we need more commitment from our communities. It must be like a wraparound service. We have our community, our churches, we have community gardens in some areas, I think if

> we had the land and the resources available—and resources is also the manpower, the fertilizer, the seeds, I mean, it takes all of it, the time—I think our kids would be better off. ... A lot of our kids live in apartments.

P2 suggested involving the Parent-Teacher Association to garner community partners. P9 cited programs offering discounted foods, such as slightly damaged fruit, but was not sure how to connect with parents. Another participant mentioned the county extension program as a resource for teaching students nutrition in a physical education class.

A related challenge was one familiar to teachers: lack of time. P1 described an external resource but also did not have the time to use it:

> Economics, Arkansas is the name of the group. Teachers have classes available to them. They are taught throughout their school year, especially in the summer, you get books, they will provide books for free, they do grants. ... I think it's a wonderful resource. I've gotten all kinds of good things from them. I just don't really have the time to, you know, to teach it.

Time was needed to find resources and implement them, including writing grants to develop the school garden.

Summary

In summary, students in the district and the elementary school in this southeastern state have a high rate of overweight and obesity, so I interviewed 10 teachers from the study site to gain their perceptions on student obesity and challenges in teaching students about health and weight. Most of the teachers acknowledged that they have worked with

students who were overweight or obese. Looking at the BMI results for the study school in the 2020-2021 school year, 25.4% of students were overweight, 27.9% obese, and 53.3% combined (ACHI, 2022). The framework was Bandura's (1969) social learning theory that people learn through observing and modeling behavior and teacher transferring knowledge.

The responses from the participants were supportive of nutrition content being integrated into the curriculum at the study site. Additionally, teachers described modeling healthy eating habits for their students, who in turn shared that information with peers and families. Results were not clear, however, regarding whether teachers have the tools or programs to teach students about nutrition and exercise. One potential resource teachers were excited about, a former school garden, would require a grant or community resources to operate.

Researchers have indicated knowledge of nutrition affects childhood overweight and obesity (Eriksson et al., 2018). In Chapter 5, I reiterate the purpose of this study, the reason the research study was conducted, review key findings, and interpret the findings in the light of existing literature. I look at confirming, disconfirming, or extending knowledge of nutrition and exercise. I also discuss recommendations and describe the potential effects of changing educational practices and incorporating nutrition content into the elementary curriculum may have in terms of positive social change for families and the community.

Chapter 5: Discussion, Conclusions, and Recommendations

Childhood overweightness and obesity have caused alarming health issues for children and adults throughout the United States. Legislators, community leaders, medical professionals, and educators are making laws and policies to improve the nation's health. Research findings have shown that a growing number of children are overweight or obese (Bryant, 2020; CDC, 2020).

The purpose of the study was to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health issues. Examining teachers' knowledge and specific needs may support future professional development to support teachers' understanding of nutrition and exercise and discourse practices to improve students' health and lifestyle. To accomplish this, I conducted a qualitative research case study with 10 teachers at one elementary school in a southeastern state. The research questions were aligned with the conceptual framework of Bandura's (1969) social learning theory, in which people learn through observing and modeling. Bandura also emphasized the role of self-regulation of behavior and teacher transferring knowledge.

In this chapter, I connect the findings of this study and those of previous research reviewed in Chapter 2. Results from the interview questions yielded six themes. Themes 1–4 answered Research Question 1 about the current situation of student obesity at the school, and Themes 5 and 6 answered Research Question 2 about challenges teachers face teaching students about nutrition and health. The six themes are the following:

- Students are overweight and need nutrition instruction.

- Teachers are vital for modeling and empowering students to make healthy choices for lifelong impact.
- Teachers use various strategies to teach students health and nutrition.
- School influence relates to providing free and healthy choices in the cafeteria.
- Schools need to involve and educate parents regarding nutrition.
- Teachers need resources, specifically for a garden.

Interpretation of the Findings

Comparing Findings to the Literature

In Arkansas, childhood and adolescent overweightness and obesity are health concerns for legislators, health professionals, community leaders, and educators (ACHI, 2018, 2022). In the literature review, I discussed the effects of health, habits and conditions, food choices, eating habits, Arkansas Act 1220 (2003), and vending machines. Researchers have emphasized the importance of education, environment, and cultures and highlighted processes and programs that have or have not worked in the past (Eriksson et al., 2018; Ghaffar et al., 2019; Pastor & Tur, 2020; Sanyaolu et al., 2019). With obesity among 19.7% of U.S. children (CDC, 2020), it is necessary to discover whether the knowledge of nutrition transfers from teachers to students through classroom strategies or activities. Students remain at school for at least 8 hours a day; some of this time can used to teach nutritional activities. According to Ghaffar et al. (2019), schools are an ideal environment for teaching healthy life skills. According to Sanyaolu et al. (2019), as the combination of diet, exercise, and physiological and psychological factors are all important factors in the control and prevention of childhood obesity, primary

preventive methods should be aimed at educating the child and family and encouraging appropriate diet and exercise from a young age through adulthood.

Teachers in this study reported encouraging students to exercise more, although teachers were not certain how much exercise was recommended. Demirci et al. (2018) stated exercise such as frequent walking can improve health-related outcomes. Coccia et al. (2020) stated that a major health concern related to childhood overweight and obesity is a physical and social environment that promotes foods high in fat and calories and minimizes the opportunities for physical activities. Teachers expressed the need to encourage students to move more, including during recess, supporting previous research(Chatham & Mixer, 2020). Students tend to live sedentary lives, teachers noted, with too much screen time, an observation also supported by the literature (see Bejarano et al., 2021). Some teachers emphasized the importance of nutrition being incorporated into physical education. Bejarano et al. (2021) suggested that nutrition information coming from a physical education teacher could be powerful in changing behaviors, because many students look up to their physical education teachers.

Teachers in this study confirmed the prevalence of junk food in student diets, with lunches from home containing sugary sodas, chips, and candy. They noted children also needed to learn about portion control. Sanyaolu et al. (2019) confirmed children with obesity consume more calories more than what is necessary. Teachers observed poor nutrition affected student learning ability, alertness, and level of energy. De Marchi et al. (2016) confirmed that student nutrition could be evaluated by their energy level.

Some participants considered parent income a substantial contributor to students' unhealthy practices and diet. Students bought food from a local gas station, as a grocery was not nearby. Teachers' perceptions are supported by research literature. Hall et al. (2016) stated students' nutrition education varies among children of various income levels and environments. Pastor and Tur (2020) noted children of low-socioeconomic status tended to eat more sugary foods. Demirci et al. (2018) as well as Berge et al. (2015) suggested that planned mealtimes with family eating together may encourage healthier eating habits—a luxury that many low-income families with working parents may not be able to provide.

Conversely, the CDC (2020) showed income was not as much a factor as parent education. Studying data from 2011–2014 among youth ages 2–19 years, obesity decreased as parent education level increased. Whereas rate of obesity was lowest among the highest income group (10.9%), the prevalence was similar among low-income (18.9%) and middle-income (19.9%) groups. Regardless of income, nutritious foods are likely cheaper than medical bills. According to Demirci et al. (2018), overweight and obesity increase the risk of a host of medical conditions, leading to adverse economic consequences.

Teachers recommended reaching out to parents to educate them on nutrition and the lifelong impact, as well as the impact on student cognition. Researchers have reported the need to educate the public on the connection between obesity and chronic illness (Chatham & Mixer, 2020; Haegele et al., 2020). Overweight and obese children develop complex health issues with potentially serious consequences such as diabetes, heart

disease, depression, stroke, some type of cancers, and mental illness. Pastor and Tur (2020) reported more effective interventions to teach nutrition to youth involved educating the entire family. Sanyaolu et al. (2019) stated the primary methods to prevent obesity are aimed at educating the child and family, as well as encouraging appropriate diet and exercise from a young age through adulthood. Also, according to Sanyaolu et al., school personnel must educate parents on proper nutritional requirements for their children. Ludwig (2018) pointed out the lack of effective strategies to combat the obesity epidemic, as even receiving healthy meals at school does not make up for a diet of junk food at home.

Teachers advocated for embedding nutrition in the elementary school curriculum. Their perceptions are supported by the literature espousing incorporating nutrition education into other subjects (Arango, 2017; Eriksson et al., 2018). Like the teachers in this study, Arango (2017) described embedding nutrition in science and math subject areas. Teachers considered this instruction vital, a view shared by Ghaffar et al. (2019), who insisted education curriculum lessons in the knowledge of nutrition and exercise could result in lifestyle changes that may improve the diet of future generations.

Interpreting Findings in the Context of the Conceptual Framework

I conducted the basic qualitative study to explore perceptions of teachers about the increasing student obesity and challenges they face in teaching students about health. The literature review for this student included an explanation of social learning theory by Bandura (1969) that people learn through observing and modeling. The teachers are role models in the school, and teachers' role in nutritional education is important. Data from

the interview responses indicated teachers are important and, if given the opportunity, can model and transfer nutritional knowledge to their students. The evidence has suggested that knowledge of nutrition and exercise can be taught and transferred in the schools through the self-efficacy theory of motivation, according to Cherry (2020). Cherry stated that the method of motivation includes experience, vicarious experience, social persuasion, and physiological feedback. Teachers can teach students real-life skills such as how to read labels, how to measure food portions, and when and how often to exercise. Participants' descriptions of acting as role models support social learning theory. In addition, teachers described students sharing knowledge with peers and families.

Teachers also described showing students how to make healthy choices. Many elements of students' lives are out of their control, but these elementary school teachers tried to show students how simple healthy choices can be. Some demonstrated recipes and cooking; some shared their choices for lunch. By doing so, they empowered students to take ownership of their nutrition and lives. P5 said, "A lot of times the students don't have any control over really what they eat, depending on what their parents bought, right? So, I'm giving them the opportunity to make those choices and, you know, be held accountable." P3 said, "It's not hard to make healthy choices. ... They can take that that power in themselves." Students empowered by knowledge and the existence of choices develop self-efficacy and can persevere (see Bandura, 1969).

Limitations of the Study

Responses to interview questions only reflect the views of the elementary teachers at one school in one southeastern U.S. school district. Researcher bias could have been a

limitation; this was mitigated through the use of an interview protocol as well as member checking, in which interviewees confirmed the draft findings of the study (see Ravitch & Carl, 2016). In qualitative research, some researchers recommend a sample size ranging from eight to 12 participants to reach saturation (Creswell & Poth, 2018; Denzin & Lincoln, 2017; J. L. Johnson et al., 2020; Ravitch & Carl, 2016). However, saturation is also viewed as an indicator of obtaining an adequate sample (Creswell & Poth, 2018; Denzin & Lincoln, 2017; J. L. Johnson et al., 2020). This study involved 10 participants. Therefore, the sample size might be a limitation of the study. An interview protocol was used as the data collection instrument for this basic qualitative study. A limitation of this study could be the use of one instrument to collect data. Qualitative research involves the use of triangulation as a recommendation in future studies (Creswell & Poth, 2018; Denzin & Lincoln, 2017; J. L. Johnson et al., 2020). and with the collected field notes, the use of only one data collection instrument could be viewed as a limitation of the study (J. L. Johnson et al., 2020).

Another limitation the many low socio-economic families their extreme disruption of food security and food patterns during the pandemic. At the same time, health and wellness was a major topic in the news and at home as everyone sought to lead safer and healthier lives. Obesity was directly linked to COVID risk for poor outcomes and death.

Recommendations

Research has indicated a growing number of children are overweight or obese. This complex health issue can lead to the severe consequences of diabetes, heart disease,

depression; stroke some types of cancer, and mental illness. According to Sanyaolu et al. (2019), increased obesity in the population requires an escalating awareness of the problem and its connection to chronic disease. Research strongly supports the need for health professionals, educators, legislators, and the community to enforce rules, laws, and guidelines to improve students' health (ACHI, 2018). Yet, interventions are not clear. Demirci et al. (2018) insisted a disparity exists between knowledge regarding nutrition and exercise and a useful way to implement this knowledge. Half of the interventions Pastor and Tur (2020) reviewed in their systematic review were effective, suggesting more research is needed. Further, Hall et al. (2016) observed a gap in teachers' knowledge regarding nutrition and exercise and effective ways to implement health-related programs. Teachers' knowledge of nutrition and exercise plays a vital role here. Although many teachers have a basic understanding of proper diet and exercise, school leaders need to provide strategies for teachers to incorporate health and nutrition into their subjects.

As noted, this study was limited to teachers at a single elementary school. Continued research with different sample populations is important. Research regarding the use of professional development for educators as well as parent and other resources to implement health education for students in schools is also necessary.

Implications

Implications for Social Change

Findings can be used to rethink the curriculum by adding information on nutrition and exercise to the curriculum. Also, the syllabi can be revisited using the standards for

nutrition and exercise to enhance and improve upon learning. Perhaps most importantly, schools with high numbers of at-risk students should prioritize training and educating teachers on how to teach students about nutrition and exercise through professional development, regardless of their subject. Teachers need support to be able to give their students the help they need.

Implications and Recommendations for Practice and Action

The proportion of students in Arkansas schools with overweight or obesity is alarming (ACHI, 2022). Potential health problems arising from poor nutrition and a little exercise will not only negatively affect their health, energy, occupations, social life, and life expectancy, but also have the potential to be transferred to future generations, perpetuating and even expanding the destructive cycle.

The study focused on the perceptions of teachers on the current state of student obesity at one school and their challenges to teach students about health and weight issues. According to Sanyaolu et al. (2019), schools have the perfect opportunity to combat childhood overweight and obesity, as students spend most of their days in school. Educators in this study described using formal and informal strategies to empower students to make healthy choices. Even though elementary teachers have not been trained in nutrition and exercise, it is time to embed nutrition into the curriculum and equip teachers with professional development. School can be used to transfer a healthier lifestyle to students.

Further, teachers in this study stressed the need to involve and educate parents about nutrition, a need supported by research (Chatham & Mixer, 2020; Pastor & Tur,

2020). Arango (2017) stated schools could plan infographics about the healthier food items served in school, such as a smart snack. One teacher in this study described posters and other resources from the My Plate website. A more focused plan to educate parents could be implemented through a district or school task force.

The elementary school in the southeastern state in Arkansas, teachers also supported efforts to secure funds to start a school garden again. They described use of the garden to teach science, math, and nutrition as well as to involve parents and the community. Funds would be from grants or community resources, and teachers were not sure where to start. Backstrom (2020) highlighted the focus of Former First Lady Michelle Obama to decrease rates of childhood overweight and obesity through teaching kids about making healthier choices and planting gardens. Papa et al. (2017) supported the benefits of community outreach programs and partnerships to influence student health. Arango (2017) described using a garden to teach students science, math, nutrition, health, and writing. Administrators at the study school and district should address these concerns and make efforts to open the garden.

Conclusion

It is never too early or too late to promote exercise and proper nutrition in school. According to Skogen and Hoydal (2021), overweight or obese children not only have a higher chance of becoming overweight or obese adults, but also can develop life-threatening health problems. Increased knowledge of nutrition, exercising, and healthy eating may lead to healthier food choices, lifestyles, and adulthood.

How teachers support students' nutrition and healthy choices to reduce childhood obesity was evident from the responses during the interviews. Knowledge of nutrition and exercise affects childhood weight and health. In this study, the findings in the interviews indicated teachers supported embedding nutrition education into the curriculum. All of them would like to implement nutrition in their classroom if given the time and resources. The evidence indicates knowledge of nutrition and exercise can be taught in the schools. Teachers can teach students real-life skills such as how to read labels, how to measure food portions, and when and how often to exercise. These tools help improve health for everyone. Challenges included the need to educate parents and to obtain resources through external grants and the community. Results from this study allow educators an opportunity to revisit, reinvent, revolve, and revitalize education. Through knowledge, social learning, and self-efficacy, teachers can show, tell, and model how important nutrition and exercise are to a healthier lifestyle. If schools start promoting good health while children are young, students have a better opportunity to thrive as healthy adults.

References

Arango, C. (2017). *Integrating nutrition education into the school curriculum.* Division of Health and Wellness, Office of the State Superintendent of Education, DC. https://osse.dc.gov/sites/default/files/dc/sites/osse/documents/Integrating%20Nutrition%20Education%20into%20School%20Curricula.pdf

Arkansas Center for Health Improvement. (2018). *Assessment of childhood and adolescent obesity in Arkansas: Year 15 (Fall 2017–Spring 2018).*https://bmi.achi.net/Pages/School Personnel/BMIProgram.aspx

Arkansas Center for Health Improvement. (2019). *Assessment of childhood and adolescent obesity in Arkansas: Year 16 (Fall 2018–Spring 2019).*https://bmi.achi.net/Pages/School Personnel/BMIProgram.aspx

Arkansas Center for Health Improvement. (2020). *Assessment of childhood and adolescent obesity in Arkansas: Year 17 (Fall 2018–Spring 2020).*https://bmi.achi.net/Pages/School Personnel/BMIProgram.aspx

Arkansas Center for Health Improvement. (2022). *Assessment of childhood and adolescent obesity in Arkansas: Year 18 (Fall 2020–Spring 2021).*https://bmi.achi.net/Pages/School Personnel/BMIProgram.aspx

Arkansas Department of Education. (2011). *Health & safety and physical education standards.*https://dese.ade.arkansas.gov/Files/20201209134403_ADE_0119-001.HealthDocument.J.pdf

Backstrom, L. (2020). Shifting the blame-frame: Agency and the parent–child relationship in an anti-obesity campaign. *Childhood, 27*(2), 203–219/ https://doi.org/10.1177/0907568220902513

Bai, S., Goudie, A., Borsheim, E., & Weber, J. L. (2021). The Arkansas Active Kids Study: Identifying contributing factors to metabolic health and obesity status in prepubertal school-age children. *Nutrition and Health, 27*(2), 273–281. https://doi.org/10.1177/0260106020975571

Bandura, A. (1969). Social foundation of thought and action: A social cognitive theory. In D. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 213–262). Rand McNally & Company.

Bandura, A. (1977). *Social learning theory*. Prentice-Hall.

Bandura, A. (1986). *Social foundations of thought and action*: *A social cognitive theory*. Prentice Hall.

Bejarano, C. M., Carlson, J. A., Conway, T. L., Saelens, B. E., Glanz, K., Couch, S. C., Cain, K. L., & Sallis, J. F. (2021). Physical activity, sedentary time, and diet as mediators of the association between TV time and BMI in youth. *American Journal of Health Promotion*, *35*(5), 613–623. https://doi.org/10.1177/0890117120984943

Beers, P. J., van Mierlo, B. & Hoes, A.-C. (2016). Toward an integrative perspective on social learning in system innovation initiatives. *Ecology and Society*, *21*(1), 33-45. https://www.jstor.org/stable/26270338

Botes, W., Moreeng, B., & Mosia M. (2022). Pre-service teachers' experiences of a

lesson study approach as a form of student support. *Issues in Education Research, 32*(1). http://www.iier.org.au/iier32/botes.pdf

Berge, J. M., Wall, M., Hsueh, T.-F., Fulkerson, J. A., Larson, N., & Neumark-Sztainer, D. (2015). The protective role of family meals for youth obesity: 10-year longitudinal associations. *Journal of Pediatrics, 166*(2), 296–301. https://doi.org/10.1016/j.jpeds.2014.08.030

Bryant, E. (2020, April 7). *Diets improve but remain poor for most U.S. children.* National Institutes of Health. https://www.nih.gov/news-events/nih-research-matters/diets-improve-remain-poor-most-us-children

Centers for Disease Control and Prevention. (2020).*Childhood obesity facts.* https://www.cdc.gov/obesity/data/childhood.html#Prevalence

Centers for Disease Control and Prevention. (2021). Operational guidance K-12 schools and early grades and educational programs for support safe in-person learning. www.cdc.gov/coronornis/get vaccinated/index /html

Chaloupka, F. J. (2011). Public policy versus individual rights and responsibility: An economist's perspective. *Preventing Chronic Disease, 8*(5), Article A100. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181174/

Chatham, R. E., & Mixer, S. J. (2020). Cultural influences on childhood obesity in ethnic minorities: A qualitative systematic review. *Journal of Transcultural Nursing, 31*(1) 87–99. https://doi.org/10.1177/1043659619869428

Cherry, K. (2020, July 22). *Self-efficacy and why believing in yourself matters*. Verywell Mind. https://www.verywellmind.com/what-is-self-efficacy-2795954

Cherry, K. (2021, July 28). How social learning theory works. Verywell Mind. https://www.verywellmind.com/social-learning-theory-2795074#a-few-applications-for-social-learning-theory

Chuang, R.-J., Sharma, S. V., Perry, C., & Diamond, P. (2018). Does the CATCH early childhood program increase physical activity among low-income preschoolers? Result from a pilot study. *American Journal of Health Promotion, 32*(2). https://doi.org/10.1177/10890117117700952

Clark, M. A. &Fox, M. K. (2009) Nutritional quality of the diets of US public school children and the role of the school meal programs. *Journal of the Academy of Nutrition and Dietetics, 109*(2), S44–S56.

Coccia, C. C., Tamargo, J., & Macchi, A. K. (2020). Effects of nutrition knowledge, personal health and self-efficacy on food-related teaching practices of elementary school pre-service teachers. *Health Education Journal, 79*(8), 974–986. https://doi.org/10.1177/0017896920946061

Colley, P., Myer, B., Seabrook, J., & Gilliland, J. (2018). The impact of Canadian school food programs on children's nutrition and health: A systematic review. *Canadian Journal of Dietetic Practice and Research, 80*(2), 79–86. https://doi.org/10.3148/cjdpr-2018-037

Cotton, W., Dudley, D., Peralta, L., & Workhoren, T. (2020). The effect of teacher-delivered nutrition education programs an elementary-aged students: An updated

systematic review and meta-analysis. *Preventive Medicine Reports*, *20*, Article 101178. https://doi.org/10.1016/j.pmedr.2020.101178

Creamer, E. G., Ghoston, M. R., Drape, T., Ruff, C., & Mukuni, J. (2012). Using popular media and a collaborative approach to teaching grounded theory research methods. *International Journal of Teaching and Learning in Higher Education*, *24*(3), 415–420.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative research and inquiry design: Choosing among five traditions* (4th ed.). SAGE.

Day, R. E., Sahota, P., & Christian, M. S. (2019). Effective implementation of primary school-based healthy lifestyle programmes: A qualitative study of views of school staff. *BMC Public Health*, *19*, Article 1239. https://doi.org/10.1186.s12889-018-7550-2

De Marchi, E., Caputo, V., Nayga, R. M., Jr., & Banterle, A. (2016). Time preferences and food choices: Evidence from a choice experiment. *Food Policy*, *62*, 99–109. https://doi.org/10.1016/j.foodpol.2016.05.004

Demirci, N., Demirci, P. T., & Demirci, E. (2018). The effects of eating habits, physical activity, nutrition knowledge and self-efficacy levels on obesity. *University Journal of Educational Research*, *6*(7), 1424–1430. https://doi.org/10.13189/ujer.2018.060702

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2017). *The SAGE handbook of qualitative research* (5th ed.). SAGE.

Eisenhart, M. (2017). A matter of scale: Multi-scale ethnographic research on education in the United States. *Ethnography and Education, 12*(2), 134–147. https://doi.org/10.1080/17457823.2016.1257947

Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Erdogan, R., Yilmaz, M., & Aydemir, I. (2021). Determination of physical education and sports teachers' nutrition habits and physical activity levels in the global epidemic (COVID-19) process. *Asian Journal of Education and Training, 7*(1), 51–59. https://doi.org/10.20448/journal.522.2021.71.51.59

Eriksson, E., Boistrup, L. B., & Thronberg, R. (2018). A qualitative study of primary teachers' classroom feedback rationales. *Educational Research, 60*(2), 189–205. https://doi.org/10/1080/00131881.2018.1451759

Gangemi, K., Dupuis, R., & FitzGerald, E. (2020).Youth speak out on school food environments. *Journal of School Nursing, 36*(3), 193–202. https://doi.org/10.1177/1059840518800777

Ghaffar, S. A., Talib, R. A., & Karim, N. A. (2019). Food choices and diet quality in the school food environment: A qualitative insight from the perspective of adolescent. *Malaysian Journal of Medicine and Health Sciences, 15*, 16–24. https://medic.upm.edu.my/upload/dokumen/2019041008170103_MJMHS_Vol_15_SP1.pdf

Gosine, L., Kean, B., Parson, C., & McSweeney, M. B. (2020). Using a 3D food printer as a teaching tool: Focus groups with dietitians, teachers, and nutrition students. *Research in Food Science Education, 20*(1), 18–25. https://doi.org/10.0000/154-4329.122.16

Graziose, M. M., Koch, P. A., Wang, Y. C., Lee Gray, H., & Contento, I. R. (2017). Cost-effectiveness of a nutrition education curriculum intervention in elementary schools. *Journal of nutrition education and behavior*, *49*(8), 684–691.e1. https://doi.org/10.1016/j.jneb.2016.10.006

Grog, G. (2018, August). Building a culture of health: Progress report, Year One. Robert Wood Johnson Foundation. https://www.rwjf.org/content/dam/farm/reports/evaluations/2018/rwjf446112

Haegele, J. A., Foley, J. T., Healy, S., & Paller, A. (2020). Prevalence of overweight among youth with chronic conditions in the United States: An update from the 2016 National Survey of Children's Health. *Pediatric Obesity*, *15*(4), Article e12595. https://doi.org/10.1111/ijpo.12595

Hall, E., Chai, W., & Albrecht, J. A. (2016). Relationships between nutrition-related knowledge, self-efficacy, and behavior for fifth grade students attending Title I and non-Title I schools. *Appetite*, *96*, 245–253. https://doi.org/10.1016/j.appet.2015.09.033

Hammond, R. A., & Levine, R. (2010). The economic impact of obesity in the United States. *Diabetes Metabolic Syndrome and Obesity: Targets and Therapy*, *3*, 285–295. https://doi.org/10.2147/DMSOTTT.S7384

Johnson, J. L., Adkins, D., & Chauvin, S. (2020). Qualitative research in pharmacy education: A review of the quality indicators of rigor in qualitative research, *American Journal of Pharmaceutical Education*, *84*(1), 138–146. https://doi.org/10.5688/ajpe7120

Johnson, S. R. (2016, August 23). Gauging the public health value of Michelle Obama's 'Let's Move' campaign. *Modern Healthcare.* https://www.modernhealthcare.com/article/20160823/NEWS/160829986/gauging-the-public-health-value-of-michelle-obama-s-let-s-move-campaign

Jones, M., Huffer, C., Adams, T., Jones, L., & Church, B. (2018). BMI health report cards: Parents' perceptions and reactions. *Health Promotion Practice*, *19*(6), 896–904. https://doi.org/10.1177/1524839917749489

Jones, R. E., Jewell, J., Saksena, R., Salas, X. R., & Breda, J. (2017). Overweight and obesity in children under 5 years: Surveillance opportunities and challenges for the WHO European region. *Frontiers in Public Health, 5,* Article 58. https://doi.org/10.3389/fpubh.2017.00058

Kaiser Family Foundation. (2004, February). *The role of media in childhood obesity: Issue brief.*https://www.kff.org/wp-content/uploads/2013/01/the-role-of-media-in-childhood-obesity.pdf

King-Mark, J. L. (2016). *Combating childhood obesity through nurse practitioner-led school wellness program* [Doctoral dissertation, Georgia College]. https://kb.gcsu.edu/dnp/20

Lincoln, Y. G., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice* (2nd ed.). John Wiley & Sons.

Long, M. W., Polacsek, M., Bruno, P., Giles, C. M., Ward, Z. J., Cradock, A. L., & Gortmaker, S. L. (2019). Cost-effectiveness analysis and stakeholder evaluation of 2 obesity prevention policies in Maine, US. *Journal of Nutrition Education and Behavior*, *51*(10), 1178–1187. https://doi.org/10.1016/j.jneb.2019.07.005

Ludwig, D. S. (2018). Epidemic childhood obesity: Not yet the end of the beginning. *American Academic of Pediatrics*, *141*(3), Article e20174078. https://doi.org/10.1542/peds.2017-4078

Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences* (9th ed.). Pearson.

McKenzie, J. F., Wood, M. L., Kotecki, J. E., Clark, J. K., & Brey, R. A. (1999). Establishing content validity: Using qualitative and quantitative steps. *American Journal of Health Behavior, 23*(4), 311–318. https://doi.org/10.5993/AJHB.23.4.9

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis*: *A methods sourcebook* (4th ed.). SAGE.

Murimi, M. W., Moyeda-Carabaza, A. F., Nguyen, B., Saha, S., Amin, R., & Njike, V. (2018). Factors that contribute to effective nutrition education interventions in children: a systematic review. *Nutrition reviews*, *76*(8), 553–580. https://doi.org/10.1093/nutrit/nuy020

My Plate. (n.d.). *Resources.* https://www.myplate.gov/resources

National Center for Education Statistics. (2022). *Search for public school districts: Common Core of Data* [Database]. https://nces.ed.gov/ccd/districtsearch/

Nigg, J. T., Johnstone, J. M., Musser, E. D., Long, H. G., Willoughby, M. T., & Shannon, J. (2016). Attention-deficit/hyperactivity disorder (ADHD) and being overweight/obesity: New data and meta-analysis. *Clinical Psychology Review, 43,* 67–79. https://doi.org10.1016/j.cpr.2015.11.005

Normann, A. (2017). Becoming a phenomenologically skilled researcher—An account of a journey started. *International and Multidisciplinary Perspectives, 18*(5), 613–626. https://doi.org/10.1080/14623943.2017.1307720

O'Brien, B. C., Harris, I. B., Beckman, T. J., Reed, D. A., & Cook, D. A. (2014). Standards for reporting qualitative research: A synthesis of recommendations. *Academic Medicine, 89*(9), 1245–1251. https://doi.org/10.1097/ACM.0000000000000388

O'Reilly, M., & Parker, N. (2012). "Unsatisfactory saturation": A critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research, 13,* 190–197. https://doi.org/10.1177/1468794112446106

Papa. J., Agostinelli, J. Rodriguez, G., & Robinson, D. (2017), Implementation of best practices in obesity prevention in childcare facilities: The Arizona Empower Program, 2013–2015. *Preventing Chronic Disease, 14,* Article 1604521. https://doi.org/10.5888/pcd14.160451

Pastor, R.L., & Tur, J. A. (2020 Effectiveness of interventions to promote healthy eating

habits in children and adolescents at risk of poverty: Systematic review and meta-analysis. *Nutrients, 12*(6), Article 1891. https://doi.org/10.3390/nu12061891

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). SAGE.

Phillippi, J., & Lauderdale, J. (2018). A guide to field notes for qualitative research: Context and conversation. *Qualitative Health Research, 28*(3), 381–388. https://doi.org/10.1177/1049732317697102

Phillips, M. M., Raczynski, J. M., West, D. S., Pulley, L., Bursac, Z., Gauss, C. H., & Walker, J. F. (2010). Changes in school environments with implementation of Arkansas Act 1220 of 2003. *Obesity*, *18*(1), 54–61. https://doi.org/10.1038/oby.2009.432

Ravitch, S. M., & Carl, N. M. (2016). *Qualitative research: Bridging the conceptual, theoretical, and methodological*. SAGE.

Rimal, R. N. (2000) Closing the knowledge-behavior gap in health promotion: The mediating role of self-efficacy, *Health Communication*, *12*(30), 219-237, https://doi.org:10.1207/S15327027HC1203_01

Rumjaun, A., & Narod, F. (2020). Social Learning Theory - Albert Bandura. In B. Akpan & T. J. Kennedy (Eds), *Science education in theory and practice* (pp. 85-99). Springer, Cham. https://doi.org/10.1007/978-3-030-43620-9_7

Ryan, K. W., Card-Higginson, P., McCarthy, S. G., Justus, M., & Thompson, J. (2006). Arkansas fights fat: Translating research into policy to combat childhood and adolescent obesity. *Health Affairs, 25*(4), 992–1004. https://doi.org/10.1377/hlthaff.25.4.992

Saldaña, J. (2015). *The coding manual for qualitative researchers*(3rd ed.). SAGE.

Saldaña, J., & Omasta, M. (2018). *Qualitative analysis: Analyzing life.* SAGE.

Sanyaolu, A., Okorie, C., Qi, X., Locke, J., & Rehman, S. (2019). Childhood and adolescent obesity in the United States: A public health concern. *Global Pediatric Health, 6*. https://doi.org/10.1177/2333794X19891305

Skogen, I. B., & Hoydal, K. L. (2021). Adolescents who are overweight or obese—The relevance of a social network to engaging in physical activity: A qualitative study. *BMC Public Health, 21*, Article 701. https://doi.org/10.1186/s12889-021-10727-7

United States Department of Agriculture Food and Nutrition Service (2019) Local school wellness policy. https://www.fns.usda.gov/tn/local-school-wellness-policy

Utz, S. W., Steeves, R. H., Wenzel, J., Hinton, I., Jones, R. A., Andrews, D., Muphy, A., & Oliver, M. N. (2006). "Working Hard With It" self-management of Type 2 diabetes by rural African Americans. *Family and Community Health, 29*(3), 195–205. http://www.jstor.org/stable/44954509

Ward, Z. J., Long, M. W., Resch, S. C., Giles, C. M., Cradock, A. L., & Gortmaker, S. L. (2017, November). Simulation of growth trajectories of childhood obesity into adulthood. *New England Journal of Medicine.* https://doi.org/10.1056/nejmoa1703860

Writing Group for the National Collaborative on Childhood Obesity Research. (2018). Developing a partnership for change: The National Collaborative on Childhood Obesity Research. *American Journal of Preventive Medicine, 54*(3), 465–474. https://doi.org/10.1016/j.amepre.2017.12.001

Yin, R. K. (2016). *Qualitative research from start to finish* (2nd ed.). Guilford Press.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE.

Zajacova, A., & Lawrence, E. M. (2018).The relationship between education and health: Reducing disparities through a contextual approach. *Annual Review of Public Health, 39*, 273–289. https://doi.org/10.1146/annurev-publhealth-031816-044628