12-2023

Implications of California State Standards in Relation to Disordered Eating for School Aged Children

Jessica de Mott

Implications of California State Standards in Relation to Disordered Eating for School Aged Children

Jessie de Mott

Liberal Studies Department, College of Education

California State University Monterey Bay

Abstract

Food is a part of people's lives, even when it is not acknowledged. It is distinctly tied to various cultures, ethnicities, and religions; with elements of restriction and gluttony abundant. Then, there is the complication of modern nutrition and health education that is taught in American, and more specifically in Californian schools. But, the education received on this issue has failed some students. Many school aged children reported that they experienced disordered eating, and learning content has further exacerbated this issue. This senior capstone research will examine the implications of California State Standards in relation to disordered eating for school aged children by exploring the current literature available on this topic, and discussing the findings of this research in order to better understand a possible way forward.

Implications of California State Standards in Relation to Disordered Eating for School Aged Children

The literature involving the implications of California State Standards in relation to disordered eating for school aged children is relatively limited due to the constraint regarding geographical location. There is a fair amount of data relating to eating disorders as a whole, and their connection to kindergarten through twelfth grade education.

The following senior capstone research project examines the primary research question: What are the implications of California State Standards in relation to disordered eating for school aged children? Why are these standards producing this response? Other secondary research questions include:

1. What is disordered eating? And how does it manifest in school aged children? What do the California state standards say about the consumption of food for school-aged children?
2. What does research say about the implications of California state standards on the rate of disordered eating among school-aged children?
3. Do California state standards cause more harm or benefit to school aged-children in relation to feeding and eating? If so, how?
4. Should California state standards for school-aged children change in regards to feeding and eating?
5. What can be done at the classroom level for school-aged children who experience disordered eating?

The synthesis of the literature available has been broken up into the following sections: general information regarding the classification, symptomatology, and repercussions of eating disorders, discussion of Orthorexia, a review of the arguments surrounding obesity in relation to disordered eating, discourse surrounding school health assessments, exploration into the use of MyPlate in nutrition education, analysis of the actual California State Standards regarding nutrition and curriculum used, and finally an examination of the execution of current school standards that do involve the prevention disordered eating. After processing analysis of this data, This project will review the methods, procedures, results, and discussion; closing with a conclusion on the data reviewed and collected, as well as recommendations for possible steps forward in relation to the topic.

Literature Review

Eating disorders are a part of the human experience and the world we live in. There is a large body of modern, peer reviewed research that makes this apparent. There are six diagnostic categories according to the DSM V: Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Avoidant Restrictive Food Eating Disorder (ARFID), Pica, and Rumination Disorder, as well as Other Specified Feeding or Eating Disorders (OSFED) (Garner & Garfinkel, n.d.). All categories have a unique set of qualifications, but they all involve the restriction of food and eating (Horberger, n.d.). The National Eating Disorder Association is one of the primary organizations in the United States that focuses on feeding and eating disorders. They conduct research and raise global awareness for the cause. In 2021, the association prepared a resource that reviewed the most recent data on the subject and combined it into a literature review. This resource is entitled, "Statistics & Research on Eating Disorders*"* (Statistics & Research on Eating Disorder*s,* 2021). Some of the notable statistics include: "Among female high school athletes in aesthetic

sports, 41.5% reported disordered eating", "40-60% of elementary school girls (ages 6-12) are concerned about their weight or about becoming too fat","35-57% of adolescent girls engage in crash dieting, fasting, self-induced vomiting, diet pills, or laxatives", and "Eating disorders have the second highest mortality rate of all mental health disorders, surpassed only by opioid addiction" (Statistics & Research on Eating Disorder*s,* 2021). Another resource can be found in Change Creates Change, a treatment center and advocacy group. Change Creates Change is based in Canada, but the information and resources it provides are still valid to populations in the United States. One article of note is "Disordered Eating Vs. Eating Disorders". It states that disordered eating is an umbrella term that includes eating disorders, as well as subclinical presentations of disordered behaviors. This means that disordered eating applies to a much larger population, and though less extreme, these behaviors can still be just as dangerous. Some of the traits cited as being a part of disordered eating are strict nutritional and exercise rules, weight control behaviors, unpredictable eating, and feelings of guilt and overwhelm around food ("Disordered Eating Vs. Eating Disorders", 2022). This paper will focus more generally around disordered eating as a whole, as opposed to any one eating disorder or behavior. The third resource I will mention is an article entitled, "From Fitness Tests to PE: What Every Parent, Educator, and Coach Needs to Know About Eating Disorders", and it was produced by Equip in 2022. Equip is an American organization that provides accessible information and treatment to the masses. This specific article is pertinent to this research because it provides an expert opinion on the connection between disordered eating and education. Konstantinovsky (2002), states that Teachers and Coaches need to know the signs and symptoms of eating disorders, and be sure to be mindful of the fact that students may already hold unhealthy ideas about their bodies, nutrition and exercise. This article will be referenced later in regards to fitness testing. After pulling from

a variety of resources regarding the signs and symptoms of disordered eating, it is important to reflect on the fact that all of these resources are conclusive. Eating disorders are affecting and killing people, particularly young, female children and adolescents. This is the reality America is facing.

An eating disorder not specified in the Diagnostic and Statistical Manual of Mental Disorders – V (DSM V) that is of note for the purpose of this paper is Orthorexia. According to The National Eating Disorder Association (NEDA), Orthorexia is the disordered need to adhere to strict food rules that dictate food as being "healthy", "right", or "pure". This goes beyond "normal" dieting and causes extreme restriction that can be at or above the same level as Anorexia or Bulimia (Statistics & Research on Eating Disorder*s,* 2021). One expert source on this topic is Steven Bratman. Bratman practices alternative medicine in California and was the first to draft the term "Orthorexia". This practitioner was able to recognize this disorder of the mind first in his own behaviors, and then in the issues of his own colleagues and patients. In an editorial published in 2017, entitled, Orthorexia vs. theories of healthy eating - eating and weight disorders - studies on anorexia, bulimia and obesity, Bratman (2017) delves into the creation of this term, while also parsing through current consensus, attempting to make sense of the pathologization of so called "healthy" eating. He makes it clear that theories of healthy eating are not disordered in their own right, but it is when moralization takes hold that unhealthy, restrictive behaviors set in (Bratman, 2017). Food does not, and should not have inherent moral value. This must first be recognized in order to understand the core issue around the way educators teach healthy practices in school. Sophie Smith, an Australian mental health advocate, has shared her lived experience with this topic in an article for the Butterfly Foundation, entitled "Orthorexia: How My Pursuit of "Health" Resulted In An Eating Disorder". Smith had a normative

experience with food, until she was introduced to the fact she had gained weight and that her Body Mass Index (BMI) was rising; this happened after being weighed in a school setting (Bradbury, 2021). Because of the way she was introduced to this information, she decided to only eat foods society and her school deemed healthy. This spiraled passed the point of "healthy" and normal and she developed orthorexia. Smith has since recovered from disordered eating, and now advocates for children and adults experiencing similar patterns (Bradbury, 2021). Smith's experience is not isolated. There are countless chronicles of children developing disordered eating due to their experiences around food and exercise in school.

Another example of this experience with orthorexia exists in Lara Ceroni (2019), author of the article, "Demonizing Food? It's a Sign of Orthorexia". Ceroni (2019) writes about her own experiences with food, and cites the work of expert Kyla Fox Centre. Centre states, "We've become obsessed with diets, food fads and restrictions. Plant-based! Gluten-free! Paleo! Keto! (Which actually has many dangers associated with it.) No alcohol! No sugar! No fun! Is it any wonder we sift through our plates – and choices – with a fine-toothed comb?" (Ceroni, 2019). These behaviors harm individuals, and are taught young. When these ideals and behaviors are inhabited by educators and those writing curriculum, the destruction implemented is further compounded. This disastrous combination of policy and health is outlined in an article in The *New York Times* and is written by Virginia Sole-Smith (2020). This article, titled "Are Schools Teaching Kids to Diet?", presents the stories of children who experienced health education that presented damaging information through the form of implicit curriculum, as well as explicit instruction on the topics of food and exercise (Sole-Smith, 2020). One child's teacher told her students that she would no longer be eating "carbs" or bread, because carbohydrates are bad. This student was six years old. If this was not caught and remedied by the child's parents, this

could cause extremely detrimental behaviors to be developed over time. This parent was lucky, but what of all the other parents in this child's class? What of other teachers who are not aware of the damage comments like this can cause? Another incident that raised alarm was the experience of a group of highschoolers tasked with tracking their calorie intake and exercise over time, in order to make goals and determine their level of "healthiness". This lesson is relatively standard, and can be found in classrooms across California, but that does not negate the trauma inflicted on this student. She writes of the response of a fellow student, "'It is important for you to know that forcing us to share our weight and the exact amount of food we eat can be triggering and nerve-wracking for certain people'"(Sole-Smith, 2020). No parent or child should have to advocate for education that reduces physical and mental harm to children. The current data dictates that weight based and moralized nutrition education is harmful, yet the standards and curriculum being used in California classrooms continues to perpetuate these ideals. The specific California state standards will be explored in further detail in a later section. One final aspect of the conversation around orthorexia and schools can be found in an article for Reuters by Kerry Grens, entitled "California Teens Eat Fewer Calories in School". Not only are California children receiving an unhealthy nutritional education, California children are eating fewer calories across the board in school. It cites a study that showed that students ate over a hundred fifty calories less than students in other states, due to a high level of nutritional regulation around meals and snacks in schools. The article heralds this as a positive win in the fight against obesity (Grens, 2012). But, it is not all positive. Children in California also have higher rates of food insecurity and malnutrition (Horberger, n.d.), and other sources state that children leave school hungry after receiving school lunch, let alone the implications of disordered eating and calorie counting. With all of this in mind, "clean" disordered eating is a real issue affecting California children and

adolescents in and outside of the classroom, and the contents that are being taught play a role in the issue's development.

As referenced in the last section, the United States and California do have a high rate of obesity, with eighteen percent of adolescents presenting as obese (Bradner Jasik, 2014). From an educational standpoint, obesity and disordered eating were historically treated as very different issues. Obese children were seen as having an issue concerning willpower, or the lack thereof. The treatment for this was seen to be the demonization of food and intense embrace of calorie and macronutrient tracking, along with exercise to the point of exhaustion (Neumark-Sztainer, 2007). This same protocol for a child living in a smaller body would be recognized as unhealthy, disordered eating (Horberger, n.d.). Modern obesity prevention looks very different. This is due to the fact that research supports the idea that disordered eating and obesity exist on a continuum of weight based problems. The article, “Addressing the Spectrum of Adolescent Weight-Related Problems: Engaging Parents and Communities”, by Neumark-Sztainer, published in *The Prevention Researcher*, focuses on this concept. This can be best explained by an image within the article. See table 1. It has a sliding scale ranking weight control practices, physical activity behaviors, body image, eating behaviors, and weight status from healthy to problematic. Some examples of problematic outcomes are Anorexia, Bulimia, Anorexia Athletica, Severe Body Dissatisfaction, Binge Eating Disorder, and being Severely Underweight or Overweight (Neumark-Sztainer, 2007). This illustrates the inherent connection between obesity and disordered eating. If children and adolescents learn and sustain unhealthy food and exercise behaviors, then they will likely fall into one of these two categories. The data also supports the conclusion that many children and adolescents fall into both categories concomitantly, meaning it is possible to have disordered behaviors, even having bulimia, orthorexia, or BED while

experiencing obesity (Neumark-Sztainer, 2007). Furthermore, the rates of obesity do represent 18% of the population, but this must be viewed with the knowledge that the rate of disordered behaviors represents 57% of girls and 33% of boys (Neumark-Sztainer, 2007). This knowledge is crucial to the treatment and education surrounding obesity. With this in mind, if you treat obesity with dieting, restriction, and an extreme deficit; it will almost lead to the worsening of disordered traits. So, how can educators and medical practitioners prevent obesity? This question is best answered by the article, “Does Obesity Prevention Cause Eating Disorders?”, by Schwartz and Henderson (2009). The article, published by *The Journal of the American Academy of Child and Adolescent Psychiatry* in 2009, outlines the answers to common questions surrounding nutrition and obesity. Diets, as a whole, are not the answer. Nor is cutting out entire food groups or expressly limiting calories (Schwartz & Henderson, 2009). The best treatment for obesity and disordered eating is providing and presenting children with a wide variety of different foods that provide them with the necessary nutrients for normal growth and development, and increasing the amount of joyful exercise experienced on a daily basis (Schwartz and Henderson, 2009). This means inhabiting the doctrine that “all foods fit” and that things should be added and not taken out of a child's diet. The tracking of a child’s weight and BMI should be between the child and his or her doctor, and should not be used to apply different treatment to children who are seen as being underweight or overweight, as the damage has been proven to be far greater than its intended purpose (Neumark-Sztainer, 2007).

As an extension of the fear caused by the obesity epidemic, the education system jumped to react. One way this has been mandated is through compulsory Body Mass Index (BMI) calculations (Nihiser, 2007). One source of research on this topic is entitled, “Body Mass Index Measurement in Schools” and was published in the Journal of School Health. The author,

Nihiser, believes that BMI evaluation can play a role in understanding the demographic population of a school, with the caveat that major safeguards need to be enforced in order to limit harm to at-risk students. Some of the safeguards recommended included: comprehensive health education for school staff, keeping data private between school/family, not using any information collected for grading purposes, and providing nutritional and exercise recommendations to all students– regardless of size. With this in mind, the article also states that there is limited research showing real benefit of BMI evaluation. This is an under researched aspect, so it may be proven to be beneficial in the effort to reduce obesity, but as of now it simply provides another data point for schools and families (Nihiser, 2007). Though, if done incorrectly or without proper use of these aforementioned safeguards, it may cause harm to students who are either underweight or overweight due to biased or unfounded stigma around body, food, and exercise ideals. The other major presence in school health assessments can be found in the now defunct Presidential Fitness Test which was reworked and rebranded in 2008 into the FitnessGram Pacer Test. The Presidential Fitness test debuted in 1966, over 56 years ago. It incorporated pull ups, sit ups, a softball throw, and a mile run (Nadworny, 2014). Students were ranked and compared against each other; rewarding a proficient few, and punishing those who could not meet the standard. Effort and personal growth were not taken into account, as it was originally created to prepare students for war, according to student accounts and experts at the time of the test (Nadworny, 2014). More recently the FitnessGram Pacer Test has been implemented since 2008. It took the standards of the Presidential Fitness Test and shifted them to be more holistically minded. Students still run and do (modified) sit ups, but the test is less of an assessment of the child's physical aptitude, and more of a general examination of the students as a population (Nadworny, 2014). The only part of the test that has raised controversy is the shuttle run. Students must run

from one side of the court to the other before the beep sounds, in faster and faster intervals of time, getting "out" when they do not beat the beep. From a student viewpoint this test is seen as degrading and frustrating with the possibility of triggering aforementioned unhealthy compensatory behaviors. From a teacher perspective, it is hard for many to watch, because it is often already known which students will do well and which will not (Konstantinovsky, 2022). Both of these sets of assessments are covered in the article mentioned in the first section. The resource, "From Fitness Tests to PE: What Every Parent, Educator, and Coach Needs to Know About Eating Disorders", provides an expert view on the harm health education can perpetrate, with a specific addendum for school health evaluations. The author clearly states that school health assessments can be damaging to students, making them feel not good enough, not fast enough, not strong enough– when physical education has the opportunity to communicate the opposite of this message, ultimately instilling a lifelong love of physical activity (Konstantinovsky, 2022). Since a child's interpretation of these messages could be life altering in relation to food and exercise, the article encourages pulling students out of fitness testing until assessments are accommodated to make all children feel safe in school (Konstantinovsky, 2022). To summarize, school health assessments have been in use for over half a century, but their ability to collect data is less important than the protection of students' relationships with their bodies, food, and exercise.

Another tool used by schools to regulate student "health" practices can be found in MyPlate. MyPlate is the most recent iteration of food guidance produced to inform the United States populace. First, starting in the late 1910s, a circular food guide was produced with seven groups. These seven groups were then worked into four categories: Milk, Meat, Fruits and Vegetables, and finally Bread and Carbohydrates ("*A visual history of food guides",* 2014). This

then became the food pyramid in the nineteen nineties. Up until 2011 this stayed the same. The MyPlate format was introduced to show a set amount of servings per food group– with Fruits, Vegetables, Grains, Proteins, and Dairy being included; it also included all of this information in a child friendly format of a plate and a cup (Myplate Plan, n.d.) . This can be viewed in Figure 1. All of this information seems good. Children need all of these foods to be healthy and grow, and nutritious meals often include protein, fat, fiber, sugar, and carbohydrates– which is depicted on the plate diagram. Issues only arise when calorie suggestions and servings are introduced. Children need enough calories to not only survive, but thrive. It is widely known that the recommended amount of energy needed by the average person is 2000 calories a day, but the average teen or young adult might need as little as 1500 calories, or as high as 3200 on average (MyPlate, n.d.). MyPlate provides approximate calorie plans for people of every age, but typically, the number ends up on the lower end of what may be needed for proper nutrition. A graph of calorie needs can be found in graph 3 (MyPlate, n.d.). A 1600 calorie plan for a female teen might include 1.5 cups of fruit, 2 cups of vegetables, 3 cups of dairy, 5 ounces of meat, and 5 oz of grains (MyPlate, n.d.). These numbers can be helpful, but they do not show the incredible amount of nuance involved when fueling a teenage body. Whether they exercised, how much they ate before, if they are sick, if they are sleeping properly, or growing, or if there is a cultural reason for eating food– a child's calorie needs will fluctuate greatly from day to day. If there is not a magic amount of energy a person needs, how should that person know what to eat? Ideally children (and adults) should eat the amount of food that they intuitively think they should eat, and this amount will vary from week to week and year to year (Konstantinovsky, 2022). This healthy behavior is learned over time, with integration of the foods that make that person's body feel energized and satiated. Another facet of the issue with MyPlate and school nutrition is the

relationship between economic hardship and food insecurity. A credible resource on this topic as it relates to the subject at hand is *Free For All* by Janet Poppendieck (2010). This book explores the politics of school food in relation to economics, nutrition, policy, satiation, and more by incorporating the voices of experts and stakeholders in the field. After studying American students in schools, the authors found that children are hungry, and whether this is because of self imposed restriction or an economic lacking or a combination thereof, it is affecting their physical, mental, and emotional wellbeing as well as their ability to learn and grow (Poppendieck, 2010). In Chapter Six: "Hunger in the Classroom" Poppendieck (2010) quotes researcher Brown,

> When faced with insufficient dietary intake, the human body engages in a form of triage by directing limited energy to be used for its most important functions. Chief among these is maintaining critical organ function. If enough dietary energy remains after allocation to key bodily organs, the second priority is body health, which in children means normal height and weight gain. The final priority, depending on the availability of energy, is the individual's interaction with the social environment--playing with peers, interacting with parents and siblings, and awareness and participation in school. Hungry children haven't the capacity for normal learning and play; while their bodies are in the classroom they lack the dietary fuel required to engage meaningfully with those around them (Poppendieck, 2010).

This is where the core issue with MyPlate and school diet plans lies. If students do not receive enough calories in their daily life, there are severe repercussions. The current system does not provide Californian children with enough calories to thrive in school and in life (Poppendieck, 2010). This is echoed by the way educators are teaching. The assumption is that students are

receiving enough food to be able to learn, work, and create– so educators operate with that fallacy. This is then further cemented by the problematic curriculum and school standards surrounding disordered eating, as students are being shamed for the foods they do or do not choose to put in their body, whether the educator is aware of this or not.

The content California students are taught is decided by the Health Education Content Standards For California Public Schools. These guidelines are grade specific, and there are six core themes that are broken down into eight broadscale standards. The six core themes are: 1) Nutrition and Physical Activity, 2) Growth, Development, and Sexual Health, 3) Injury Prevention and Safety, 4) Alcohol, Tobacco, and Other Drugs, 5) Mental, Emotional, and Social Health, and 6) Personal and Community Health. As for the standards, they consist of 1) Essential Health Concepts, 2) Analyzing Health Influences, 3) Accessing Valid Health Information, 4) Interpersonal Communication, 5) Decision Making, 6) Goal Setting, 7) Practicing Health-Enhancing Behaviors, and 8) Health Promotion (Health Education Content Standards for California Public Schools, (2009). These standards are set forth by the State of California, determining what content is taught in all public classrooms across the state. Though the standards are decided by members of the California Health Education Standards Advisory Panel, there are controversies relating to the expectations of standards as well as the language used (Health Education Content Standards for California Public Schools, 2009). This section will only review the standards within Nutrition and Physical Activity, and examples of specific standards deemed problematic can be found in Appendix A. There are two main problems that can be seen within the Nutrition and Physical Activity standards that can be broken up into two categories– vague/moralized language and age inappropriate content. The standards that include vague and moralized language often use words like “good”, “bad”, “healthy”, “refuse”, and “fault”. For

example, a standard for kindergarteners states, “K.2.1.N Recognize that not all products advertised or sold are good for them (Health Education Content Standards for California Public Schools, 2009)”. This may cause confusion or guilt in students, as food has no inherent moral value, making good, bad, or in between. An informational article for Boston Children’s Hospital, written by Rizzitano (2023), states the importance of this distinction. She includes advice from Nurse Practitioner Sarah Zombek, suggesting that parents opt for nutrition forward language, and explaining what different foods can do for our bodies. This might involve explaining that apples or cake (sugar) might give you a lot of energy fast, while peanut butter or ham (protein and fat) might keep you full for longer (Rizzitano, 2023). This standard and others would be less likely to harm students if it was rephrased to include an “all foods fit” approach, especially for children as young as kindergarten. Another standard that includes vague/moralized language applies to highschool students, “9-12.1.5.N describe the relationship between poor eating habits and chronic diseases such as heart disease, obesity, cancer, diabetes, hypertension, and osteoporosis (Health Education Content Standards for California Public Schools, 2009).” On the surface, this statement is innocent. Students should learn about chronic diseases like “heart disease, obesity, cancer, diabetes, hypertension, and osteoporosis” (Health Education Content Standards for California Public Schools, 2009). The issue lies with the “poor eating habits”. What are “poor eating habits”? What are the extenuating circumstances that might cause “poor eating habits”? The connection between eating habits and general health is complicated and has an incredible amount of nuance that is not addressed in this standard or others within the section. The other category of note contains issues involving age inappropriate content. The first of two is discussion of BMI, occurring in seventh and eighth grade, “7-8.1.13.N Explain how to use a Body Mass Index (BMI) score as a tool for measuring general health (Health Education Content

Standards for California Public Schools, 2009). BMI measurement itself is controversial due to the unscientific nature of its creation, in 1850 by mathematician Adolphe Quetelet (1850). Its efficacy and usage were more thoroughly addressed earlier, but its use as a health tool is extremely limited due to these factors. Throughout the grade levels, the second type of age inappropriate standard dictates that students track their calorie intake and physical activity. These goals extend from fourth grade to highschool (Health Education Content Standards for California Public Schools, 2009). An example of this at the highschool level is, "9-12.6.3.N Create a personal nutrition and physical activity plan based on current guidelines (Health Education Content Standards for California Public Schools, 2009)." This standard was covered in, "From Fitness Tests to PE: What Every Parent, Educator, and Coach Needs to Know About Eating Disorders", by Konstantinovsky, as well as, "Are Schools Teaching Kids to Diet?" by Sole-Smith; though the majority of eating disorder experts and specialists overwhelmingly agree that school aged children should not be tracking calories or macronutrients at any level, due to the intense harm this practice has already incurred. With this in mind, the standard would benefit from adaptation or outright removal. But the California State Standards are only one part of the equation. If California State Standards are the "what" children are being taught, the curriculum is the "how" children are being taught by educators. If there are flaws in the content itself, educators' ability to convey the standards in a healthy way will be lacking. It is very difficult to out teach bad standards, even if the intention is to do no harm. Many teachers are searching for "fun" ways to teach nutrition curriculum, but this often means interpreting the standards. In a resource produced by Grattan (2022), entitled "20 Teacher-Approved Nutrition Activities For Middle School", She writes about twenty lessons that meet curriculum standards regarding food and physical activity (Grattan, 2022). The majority are helpful, and encourage normative

nutrition practices, but a few have the potential to harm at risk groups. Lesson four, “Food Diary Apps”, encourages students to track their calorie intake in a calorie tracking app, where the results would be submitted (Grattan, 2022). This practice is common, but has the potential to act as a catalyst for obsessive or disordered behavior. Calorie tracking apps are not made for middle school students, and most require the user to set a certain weight loss goal paired with a calorie deficit. With that in mind, this lesson could be damaging for a variety of reasons. Another lesson that is cause for concern is lesson eight, “Snack Attack!”. Students are asked to bring in their favorite snacks to compare nutrition facts and rank from worst to best, based on nutritional content; with the child who brought the healthiest snack winning a prize (Grattan, 2022). Though it might seem fun to compare nutrition facts for some, this activity operates on the assumption that there are “good” snacks and “bad” snacks, it also demonizes food with lower nutritional value. In addition, some students may not have much choice over the snacks they bring in, and if their snack is not adequate should they simply go without eating? This leads to a variety of questions that the teacher may not be able to answer. The final lesson that may not be appropriate is lesson nine, “The Potato Chip Experiment”. Students crush potato chips in plastic sandwich bags to find which brand of chip has the most fat in it (Grattan, 2022). This alone can teach as a fantastic learning moment, but it is quickly paired with a judgment of the nutritional content of potato chips. Grattan writes, “Many students will be grossed out by the grease and learn to eat less of these processed foods (Grattan, 2022)”. Fat serves a purpose. Fat is necessary for human development, but this is not mentioned in regards to the lesson, Grattan only suggests deterring the consumption of an entire macronutrient. Whether it is blatantly stated in the curriculum or more subtly communicated through actions, the way educators teach curriculum matters. This starts with teachers' own beliefs and behaviors surrounding food. An article entitled, “Where is

All the Pressure Coming From? Messages From Mothers and Teachers About Preschool Children's Appearance, Diet and Exercise", touches on this topic (Mccabe, Ricciardelli, & Stanford, 2006). The study discusses mothers and teachers' ideas about their female and male children's bodies, as well as ideas about their own bodies. In a statement regarding teachers views on their own body, food, and physical activity, the researchers Mccabe et al (2006) asserted,

> However, when they were questioned about what they liked about themselves, they focused on liking their personality, and were quite critical of their physical appearance. There was a high level of dissatisfaction with their bodies. It is unclear if this level of dissatisfaction was transmitted to children in an indirect manner, through their comments about the children's food, appearance or levels of activity.

This negative attitude about educators' own bodies is difficult. It is often hard for educators to put a name to their own ideas, or see them in action within their own life. Teachers are educated and majority female as a populace. With that in mind, this group is at risk of developing a spectrum of weight related disorders, as previously mentioned in discussion of the relationship between eating disorder behaviors and female populations (Neumark-Sztainer, 2007). As stated by Mccabe et al (2006),"Where is All the Pressure Coming From? Messages From Mothers and Teachers About Preschool Children's Appearance, Diet and Exercise", Mccabe et al (2006) indicated that it is unknown whether this body image dissatisfaction and negative experiences with food impacts educators ability to administer nutrition education and instill positive attitudes towards food and exercise; but it would be difficult to not make this connection in light of the other information discussed. With all of the information explored regarding California State Standards– from the standards themselves, to possible curriculum, to educators' individual food

philosophies, there is a great deal of subjectability and nuance. Understanding this, it is still undeniable that these aspects are harmful to some students, and because of this something within the system itself needs to change.

One of the California State Health Standards for highschool students is," 9-12.1.11.N Identify the causes, symptoms, and harmful effects of eating disorders (Health Education Content Standards for California Public Schools, 2009)". Other than this standard, there is little mention of disordered eating. This is oppositional to the rate of children experiencing disordered eating, as school based prevention and management are key in counteracting disordered behaviors. In 2009, a study was produced that exposed fourth through sixth grade children to an eleven lesson disordered eating prevention initiative. The article, entitled, "Evaluation of an Upper Elementary School Program to Prevent Body Image, Eating, and Weight Concerns", Knightsmith, Treasure, and Shmidt (2013) chronicles the topics of the lessons as well as the results of a pretest and posttest administered to the subjects. Of the eleven lessons, the first four taught about body shape, size and composition, The second four discussed positive influences on the body, and the final three enforced "sociocultural life skills". There is a breakdown of these topics provided in chart four, taken from the text. As for the pretest and posttest, the students who did not receive the intervention had a minimal increase in knowledge, which may have been due to cross discussion between classes. The students who received the intervention had an increase in knowledge relating to media influence, body acceptance, and positive health interventions, as well as a decrease in body size prejudice (Knightsmith, Treasure, and Shmidt, 2013). Because of the gap in California State Standards, interventions like this may be an effective way to remedy the lack of knowledge and education received by students regarding disordered eating. In 2000, a countrywide initiative was launched by The National Eating

Disorders Screening Program. The results of this study were released in an article entitled, “Screening High School Students for Eating Disorders: Results of a National Initiative” (Austin et al, 2008). This program was the first of its kind to screen such a large population of American students, with 35,000 students filling out the survey, though only 5,740 of the surveys were randomly selected and analyzed due to economic and time constraints of the research team (Austin et al, 2008). The results were alarming. For girls, twenty five percent reported disordered eating behaviors severe enough to merit clinical evaluation. For boys, eleven percent met that threshold (Austin et al, 2008). Of the 35,000 highschool students who completed the survey, it is estimated that over 7,000 participate in disordered behavior. The symptoms and effects of eating disorders are well documented. Those who participate in associated behaviors are at high risk of developing comorbid disorders such as “osteoporosis and complications of the gastrointestinal, cardiovascular, and endocrine systems (Austin et al, 2008)”, as well as a host of other consequences previously mentioned. Of the students surveyed who presented with behaviors, between eighty three and ninety five percent of boys had never received treatment, and eighty three to eighty six percent of girls had never received treatment (Austin et al, 2008). If more broadscale surveys and educational programs had been administered it is speculated that the rates of students presenting with behaviors would be lower and the rates of treatment and clinical analysis would be higher. A UK study titled, “Spotting and Supporting Eating Disorders in School: Recommendations From School Staff ", addressed the presence of eating disorders for highschool students as well as the stigma for educators concerned with the topic (Knightsmith, Treasure, and Shmidt, 2003). Through semi-structured focus groups, the researchers collected qualitative data from a collection of educators (sixty three staff from 29 different schools across the United Kingdom), and constructed five major outcomes from the discussion. They included,

“(1) Many staff do not have a basic understanding of eating disorders, (2) Eating disorders and other mental health issues are taboo in the staffroom, (3) Staff do not feel comfortable talking to students about eating disorders, (4) Parents are key to eating disorder recovery but sometimes the relationship gets off on the wrong foot, and (5) Staff would welcome ideas for practical support during the recovery period (Knightsmith, Treasure, and Shmidt, 2003)”. All of these findings are vital to the discussion of disordered eating and education, but outcomes one, two, and five are most relevant to this discussion. Information and Knowledge surrounding this topic is crucial to identifying the signs, symptoms, and behaviors that accompany it. When educators have this knowledge, students are far more likely to receive help and less likely to develop issues in the first place because of identification measures. As for outcome two, regarding taboo and stigma, this is another issue that must be addressed for the sake of students' wellbeing. When educators have the necessary information, this issue will likely be remedied. Outcome five, “Staff would welcome ideas for practical support during the recovery period (Knightsmith, Treasure, & Shmidt, 2003)”, is the final piece of the puzzle. Educators and stakeholders ultimately want what is best for their students, and with access to this information, students' quality of life could be improved in the long run. Education for teachers and students is paramount to disordered eating prevention, as well as wide scale screening, which has been demonstrated by the sources cited in this section. California State Standards do not reflect this sentiment at this present time, damaging at risk students relationships with food, body, and exercise; until the standards are corrected there will be consequences regarding the physical, mental, and emotional health of students affected.

Method and Procedures

This capstone research study project was conducted in three sections: a survey of educators (See Appendix C~ Response to Research Questions For Current Teachers), a survey of now graduated students (See Appendix B ~ Research Questions for Past Students), and the analysis of the results of a multistep nutrition lesson (See Appendix E ~ Synthesis of Nutrition Lesson Examples). This procedure will be conducted in order to answer the question, What are the implications of California State Standards in relation to disordered eating for school aged children? As well as, How do the California state standards affect student relationships with feeding and eating? Do California state standards cause more harm or benefit to school aged-children in relation to feeding and eating? And what can be done at the classroom level for school-aged children who experience disordered eating? The surveys were conducted from September twenty seventh, 2023 till November twelfth, 2023, and the lessons we conducted the week of October fifteenth, 2023.

Participants

The survey involving past student experiences with nutrition education received one hundred responses over six weeks. The participants that filled out the survey were asked to select their graduation year from six options, including: before 2005, 2006-2010, 2011-2015, 2016-2020, 2021-2025, and 2026-2030. Of the participants, twelve graduated before 2005, three graduated between 2006 and 2010, six graduated between 2011 and 2015, forty six graduated between 2016 and 2020, twenty nine graduated between 2021 and 2025, and three plan to graduate between 2026 and 2030. The other major data point for these participants is the location where they completed the majority of their kindergarten through twelfth education. Forty Three of the participants completed their education in Northern California, Thirty Six of the

participants completed their education in Southern California, and the rest completed their education in another state or country. No data was gathered regarding race, sex, or age of population. The participants for this portion were gathered through personal connections through my own schooling experience and work in the classroom, as well as through randomized interactions with the population reflected in the survey. The respondents were not compensated in any way, and the survey was anonymous.

The results of the survey regarding educator experiences with nutrition received twenty five responses over the course of two weeks. Of these twenty five responses, a majority came from educators in California, with a few from other states. The California educators surveyed included representatives from a variety of districts, with some from southern, central, and northern California. These representatives teach a variety of grades, with thirty six percent teaching kindergarten through second grade, thirty two percent teaching third through fifth grade, eight percent teaching sixth through eighth grade, twelve percent teaching eighth through twelfth grade, and another twelve percent teaching another population other than kindergarten through twelfth grade education. No data was gathered regarding race, sex, or age of population. The participants for this portion were gathered through personal connections with educators, who were reached via social media and other messaging formats. No composition of any kind was provided, and the results were anonymous.

The final research portion received responses from approximately fifty participants in third grade from Southern California. The school serves a population that is ninety six point six percent Latino, one point one percent caucasian, one point one percent African American, one point one percent Asian, and point two percent Pacific Islander. As for those learning English, thirty percent of third graders are classified as English language learners, with all thirty percent

transitioning from Spanish to English. The educators who demonstrated the lesson are past mentors of mine, and they were not compensated for their participation in the study.

Materials and Measures

For the survey regarding educator experiences with nutrition, an anonymized virtual form was used. It included six questions that are all included along with the unfiltered results in Appendix C ~ Response to Research Questions for Current Teachers. The questions include: What grade level do you teach? What school district do you teach in? As a person, what experiences do you have around food and eating? Do you feel that you would be able to recognize the signs of disordered eating in a student? How do you teach "healthy" nutrition? Anything else to add? Two questions were multiple choice, Three were multiple choice, two were short response questions, and the last question had a long response format.

For the survey regarding past student experiences with nutrition education, an anonymized virtual form was used as well. It included seven questions that are all included along with the unfiltered results in Appendix B ~ Research Questions for Past Students. The questions include: When did you graduate high school? What region did you complete the majority of your education in? How were your experiences with feeding and eating during elementary, middle, and high school? Did these experiences ever make you feel judged or othered? Did you ever feel pressure to eat less or cut out certain foods? Did you learn about calories and nutrients in a school setting? Did any of these experiences affect your relationship with feeding, eating, or exercise? How so? Five questions were multiple choice, one had a sliding scale from one to ten, and the final question had a long response format.

The Materials and Measures for the multistep nutrition lesson included four parts, with the results of only the last two being considered. The first part included the making of a T chart

with “healthy” snacks written on one side and “unhealthy” snacks written on the other. Children then wrote their favorite snacks on the side they felt they fit in. There were far more “unhealthy” snacks than “healthy”. For the second part students defined healthy in their own words, and then were introduced to an eating disorder conscious definition of healthy. The definition read, “Being mindful of what makes your body and mind feel good”. The third phase included the analysis of a worksheet that featured a nutrition label for Cheez Its, with an accompanying statement and discussion question. The statement read, “This is the nutrition label for Cheez-its. Highlight where it says these words: Calories, Total Fat, Total Carbohydrate, Fiber, Total Sugars, and Protein. Definitions: Calories: the amount of energy your body gets from food, Fat: Helps you feel full and lines cells in body, Carbohydrates (or Carbs): the bodies main source of energy, Fiber: a type of carb that the body can’t digest, Sugar: a type of carb that gives you fast energy, and Protein: gives you energy and helps your body grow”. The discussion question states, “Is this food healthy?”, and students were asked to analyze the nutrition label after discussing quietly and annotating the document. Of the fifty student examples, four were anonymously selected for analysis, and can be found in Appendix D ~ Nutrition Lesson Examples. Phase four, the final step, pulled from all the other sections to create a culminating project for the unit of study. Students received a worksheet with an inscription that read, “Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy. Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate. My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.”, below the paragraph, there is an image of a plate for students to draw their meal on. Of the fifty student

examples, ten were selected for analysis based on completion of the assignment as well as their ability to follow directions; (See Appendix D ~ Nutrition Lesson Examples). This section of data collection took the greatest amount of energy, but it yielded some very interesting results regarding students' ideas surrounding food and health.

Procedures

The procedure of both surveys was straightforward. Participants received the survey by accessing a link or scanning a qr code, and virtually filled out the survey anonymously with as much detail as they felt comfortable giving. Both surveys took less than five minutes total to complete and were designed to be accessible to a wide range of participants. It would have been prudent to collect more demographic information, but the data collected tells the story on its own. The procedure of the multistep lesson was created in order to educate the population involved, as well as to collect basic, qualitative data. Because I did not teach the lesson itself, I only had as much control as the lesson plan allowed. The first three phases were mostly educational, while the fourth step acted as an assessment of the students' understanding of the material– while capturing data regarding their perception of the topic.

Results and Findings

The complete results of the survey involving past student experiences with nutrition education can be found in appendix B, the complete results of the survey regarding educator experiences with nutrition can be found in appendix C (See Appendix C ~ Response to Research Questions for Current Teachers), and examples of the assignments analyzed completed within the last two phases of the multistep nutrition lesson can be found in appendix D (See Appendix D ~ Nutrition Lesson Examples).

For the survey regarding past student experiences with nutrition education, the responses to the questions regarding graduation date and the location they received their education were stated in the section titled, “Participants”. The third question asked, “How were your experiences with feeding and eating during elementary, middle, and high school?” and participants were asked to rank their experiences on a scale with one being almost completely healthy and ten being unhealthy. Out of the one hundred responses, one person participant selected one, eight participants selected two, five participants selected three, seven participants selected four, nine participants selected five, nine participants selected six, nineteen participants selected seven, twenty participants selected eight, thirteen participants selected nine, and nine participants selected ten. These responses can be viewed in a bar graph format in figure three. Question four asked, “Did these experiences ever make you feel judged or othered?”; sixty five participants responded yes, and thirty four responded no. Question five asked, “Did you ever feel pressure to eat less or cut out certain foods?”; sixty seven answered yes and thirty three answered no. The last multiple choice question asked, “Did you learn about calories and nutrients in a school setting?”; seventy three answered yes and twenty six answered no. Question seven asked if any of these experiences previously mentioned affect their relationship with feeding, eating, and exercise, then asking for examples of how. This question held the majority of the weight of the survey, and reaped sixty six long form responses. I highly recommend reading a few of them in Appendix B (See Appendix B ~ Research Questions for Past Students), as the words of the participants themselves are far more impactful than my own, though I will still include a few poignant excerpts here. One participant wrote about a presentation by a nutritionist, “Having a nutritionist come and present in middle school was really hard for me… The lesson centered on what we, as children, needed to take OUT of our diets. It encouraged weight loss and eating less

of everything. I don't think that's a message 13 year olds need.", another wrote about negative feelings around food and exercise, "Feeling shamed about the way I looked or the food I ate resulted in me forming an unhealthy relationship with food and exercise at a young age". One student wrote about a specific harmful lesson on calories, "I had a lot of negative experiences around food and eating during middle school and high school. I distinctly remember learning the amount of calories in a gatorade and being told that we would spend the rest of class "burning off" those calories… Now, Im an adult and I have an eating disorder. All to say these experiences effected me negatively and I don't want other kids to be taught these things.", and another wrote about how logging calories was detrimental to their relationship with food, "Having to track my calories in middle school PE was really traumatic for me. I began to fear food and started engaging in unhealthy behaviors. The teacher's attitude towards her own food and body made it worse". A few students were not affected, and a few had positive experiences to share relating to specific empathetic educators. Common themes of this survey include: shame, receiving mixed messages, overwhelm, and frustration with the education system.

The results of the questions regarding school districts and grade level within the survey regarding educator experiences with nutrition have already been stated in the section titled, "Participants". The third question, "As a person, what experiences do you have around food and eating?", asked educators to rank their experiences from one to five, with one being completely positive and five being completely negative. Thirty two percent selected one, sixteen percent selected two, thirty two percent selected three, twelve percent selected four, and eight percent selected five. The answers to this question can be viewed in a bar graph in figure two. Question four asks, "Do you feel that you would be able to recognize the signs of disordered eating in a student?"; fifteen teachers responded yes, two teachers responded no, and eight teachers

responded with another answer other than yes or no. One teacher stated, “It depends. I don’t usually get to see them eat, I can sometimes observe things/hear comments that may give some potential signs. I’ve had a student in the past who ended up leaving the school and was hospitalized, and I had no idea and didn’t see signs shown. , I’ve had students that I suspected that possibly may have a issue in the future and was able to talk to them”. Another stated, “I think I could detect if a child was not properly fed but not other forms of disordered eating.” Question five received a variety of very different responses, as the question regarded personal experience with teaching “healthy” nutrition. Some teachers do not teach nutrition at all, others pull from the internet and school provided “MyPlate” resources, and some attempt to teach different philosophies they embody regarding nutrition. One teacher wrote, “I take a scientific approach and really talk about the nutritional needs for our bodies to be healthy and strong. We also talk about the mental health component and body image and how it connects. Try to take an anti-diet culture approach”. The sixth, and final, question asked teachers to add any other information they wanted to add. Not all the teachers responded to this question, but all the responses conveyed interest in the topic, gave suggestions, or shared ways they combat unhealthy/disordered eating with their students. One teacher added her attempt to discuss the topic with her young students, “I teach in themes so like September was an apple theme, we talked about apples and what they're good for. The school district has a fruit and veggie program which gives all students a fruit or veggie to go home with them three days out of the week. A lot of kids are picky when it comes to certain foods but I feel it's important to expose them to different foods.”, another wrote about her observations of students food choices, “I've noticed students that have a hard time focusing in class also tend to be students whose diets consist of heavily processed "snack foods" such as cheetos/takis, doritos, chips, starbucks drinks, candy,

etc. I've noticed that these students in mind don't seem to get a lot of protein or veggies". On a different note, one teacher wrote, "At times it is a challenge to get our older students to eat regularly.", and another expressed the opinion that families would benefit from a parenting class regarding disordered behaviors and nutrition in general. Some common themes of the survey include: a feeling that the way they personally teach nutrition is adequate, dissatisfaction with student behavior, and a general lack of knowledge on the topic of body image, food, and exercise.

The results of the multistep nutrition lesson that discussed normative eating habits were established by viewing and analyzing the examples seen in appendix D. Due to the subjective and personalized nature of the data, the results were difficult to quantify, but the information gathered is still valuable to this project. The synthesis of the final phase of the lesson can be viewed in appendix E, with a pie chart of the findings in figure four. Phase one– the section that acted as a primer for the rest of the lesson by comparing "healthy" and "unhealthy" snack options, caused students to question what makes a food healthy, and if their favorite snacks fit into that category. There was a relatively even split of the amount of foods split onto each side. The majority of the foods on the "healthy" side were not particularly high in macronutrients like fat or protein, but focused on foods that are considered to be minimally processed, such as fresh fruits and vegetables. The "unhealthy" options were mainly pre-prepared, processed options like chips and candy, cheese and processed meat. These charts highlighted the students prior knowledge and their preconceived notions regarding nutrition. Phase 2 constructed an agreed upon definition of healthy, "Being mindful of what makes your body and mind feel good". Unfortunately, I was unable to collect data from this section other than a few anecdotal statements from the teachers involved, this is due to the fact that this process mainly took place

via classroom discussion. Students struggled to define “healthy” as a group, as a few students believed nothing was inherently healthy, others could not confine the term to a few conditions, and the rest of the population did not have strong feelings about the task. The above definition was eventually reached in both classes, with some coaching from the educators.

The third phase was conducted the next day, and involved the analysis of a nutrition label by students. Only four responses have been included in appendix D, because the witten data was redundant. The majority of students originally believed that a serving of Cheez-Its are “unhealthy”, as they have eight grams of fat. But, after further discussion of their definition of healthy nutrition, the majority of students agreed that a serving of Cheez-Its is healthy. A minority of approximately ten percent of students adamantly disagreed with their classmates, citing that it had food dye and was generally “processed”. Phase four, the final section, involved students creating a “healthy” meal that involved a favorite food, while also including other foods that could make the meal more filling and satisfying. Common foods included: pizza, ramen, caffeinated beverages, apples, oranges, strawberries, watermelon, and culturally relevant foods to the population (tacos, quesadillas, and pozole). Seven out of ten students created a plate that contained an adequate serving of carbohydrates, fat, and protein (see figure four). These ten examples were selected based on completion of the directions, and quality of work. Some of the most common food items may have been selected due to the fact that the correct spelling was written on the board, though they were written at students' requests. The data collected from all four of these phases of the lesson was reflective of students' prior and acquired knowledge of the topic, and provided insights into their understanding of nutrition as a whole.

Discussion

The data collected from the survey of educators, the survey of now graduated students, and the analysis of the results of a multistep nutrition lesson that discussed normative eating habits all reaped valuable information regarding the implications of California State Standards in relation to disordered eating for school aged children. Information from all three sources served in answering the related research questions that inquired: what are the implications of California State Standards in relation to disordered eating for school aged children? As well as, How do the California state standards affect student relationships with feeding and eating? Do California state standards cause more harm or benefit to school aged-children in relation to feeding and eating? And what can be done at the classroom level for school-aged children who experience disordered eating? The data will now be broken down into these categories.

How do the California state standards affect student relationships with feeding and eating? In the case of the students who responded to the survey regarding past experiences with nutrition education, many reported that their relationship with feeding and eating was negatively affected in the short and long term. A majority of the students who expressed this sentiment still experience the effects of the state standards today. With one participant stating, “I am 21 now and I don't have a diagnosed eating disorder but the habits learned in school certainly aren't healthy and they still follow me.” and another citing, “I developed anorexia as a teen and it still is something that I deal with now”. Out of a hundred participants, eight disclosed having a diagnosed eating disorder at some point. That is eight percent of all participants polled. Many more disclosed experiencing disordered eating or other examples of disordered behaviors. This data is on track with other larger studies done of similar populations, including those cited earlier in the paper. The repercussions of eating disorders and disordered eating are serious, and affect

nearly all systems of the body over time. Whether these participants experienced these issues ten years ago or today, the consequences are still most likely affecting their mental, emotional, and physical health. The data collected shows that the state standards inability to effectively educate students on the concepts of feeding and eating has irrevocably harmed these students. The data collected from the survey of educators supports the idea that the curriculum based on the state standards is not adequately supporting students, meaning educators have had to step in and implement their own philosophies of nutrition where the content lacks. This makeshift solution has caused more problems than answers, with students speaking out about “creative” measures to teach nutrition that oftentimes are causing more harm than good.

So, do California state standards cause more harm or benefit to school aged-children in relation to feeding and eating? The data from the student survey as well as the educator survey overwhelmingly supports the position that the current state of nutrition guidelines set forth by the state of California has resulted in more harm than good. The main issue causing harm can be best summarized as a lack of scientifically correct, eating disorder conscientious nutrition education. This causes harm to both demographics of teachers and students. It is ultimately known that educators truly want what is best for their students' mental, emotional, and physical health– so it is vital to arm them with the proper set of educational materials, otherwise it is unlikely that implementation will be successful in enriching students. Ergo, when you increase educator knowledge on the topic, you increase students’ knowledge as well. One teacher writes, “I see a serious pattern in the teachers around me that needs to be talked about. Because teachers aren't immune to diet culture, they often are showing students disordered behavior and I see the kids copying all these activities; think dangerous crash diets, over exercise and not eating for a ~cleanse~. ALSO kids are showing their eating disorder behaviors in our classrooms, talking

about all their trauma and giving reasons for why they can't eat anytime soon". This quotation states the harm currently being enacted in the classroom, further reinforcing that it could be lessened by proper education of those in the field. Two common California State Standard based lessons that were frequently discussed in the student survey that caused undue harm are calorie counting practices, and weight and BMI checking. The calorie counting lessons most likely came from the California State Standard, "5.6.1.N Monitor personal progress toward a nutritional goal", "7-8.6.1.N Make a personal plan for improving one's nutrition and incorporating physical activity into daily routines", or "9-12.6.3.N Create a personal nutrition and physical activity plan based on current guidelines" (Health Education Content Standards for California Public Schools, 2009). Though none of these standards expressly mention calories, nutrition and calories seem to be inherently tied within the American nutrition model. Multiple students recounted the harm these lessons caused them. No students connected these lessons to any particular benefit. On this topic, one student wrote, "when I was in 6th grade we had to count our calories and were strongly encouraged to be eating 1200-1600 calories as active growing teens. Being the overachiever I am, I took it upon myself to eat as little as possible", another wrote, "Having to track my calories in middle school PE was really traumatic for me. I began to fear food and started engaging in unhealthy behaviors. The teachers attitude towards her own food and body made it worse". With the negative experiences of these students and others in mind, I do not believe that this is an issue of one bad teacher. Students from both northern and southern California had near parallel experiences with the content standards regarding this topic, and harm seems to be the common denominator. Another common practice relating to the harm induced by the California State Standards mentioned in the student survey, is the weighing and BMI checks of students. This practice is based on the standard, "7-8.1.13.N Explain how to use a Body Mass

Index (BMI) score as a tool for measuring general health", as well as the now retired presidential fitness test and the FitnessGram Pacer test (Health Education Content Standards for California Public Schools, 2009). In the survey a few students cited being distressed by these health evaluation methods, causing them to spiral into disordered behaviors. One student wrote about needing to be in a certain BMI limit in order to move forward in school, "It became a big thing in my head that I had to pass the BMI portion. It still follows me that idea that I have to have a certain BMI. It was always the part I had failed in elementary and middle school. I ended up passing the BMI portion but it only added to my history of disordered eating", while another student discussed being weighed in school, " I hit 100 pounds in 5th grade (for the first time). I still remember the day because it was measured in front of my peers for presidential fitness testing". Both of these examples demonstrate the grievous harm that these now adult students experienced due to the standards that are set forth by the state. On the other end of the scale, I would argue that the lack of proper eating disorder conscious nutrition education has created a void for the young students who completed the nutrition lesson that discussed normative eating habits. Prior to this assignment they did not have much meaningful interaction with the content, and that in itself has the possibility of harming them in the long term. Students need to be armed with the information to identify disordered behaviors in themselves and their classmates, in order to create a safer learning environment for everyone.

Finally, what can be done at the classroom level for school-aged children who experience disordered eating? All students deserve content that does not cause them harm, especially at the classroom level. But students who are already experiencing disordered eating would be benefited by a more thorough education of school staff, as well as implementation of exposure based curriculum starting in elementary school. These claims are informed by analysis of the multistep

nutrition lesson, as well as the responses to the educator survey. Children who completed the lesson began with either no knowledge of nutrition, or informal conclusions based on interactions with other adults and peers. At eight or nine years old, in third grade, there had been little or no exposure to nutrition standards or curriculum, regardless of it being eating disorder conscious or not. My findings regarding educator knowledge and awareness also produced a gaping informational gap. Teachers repeatedly cited teaching children only about non processed fruits and vegetables, while cutting out processed, easily accessible snacks. One teacher wrote, regarding the lack of training and resources around nutrition. One teacher wrote, “Our curriculum doesn’t have a lot right now except we use mystery science and sometimes there are some foods presented For example, there’s one on is a tomato a fruit” regarding the lack of training and resources around nutrition, another explained that she taught nutrition by example as opposed to explicit instruction on the topic, “I model eating a healthy snack daily (banana or apple) and drinking water. Occasionally I show my healthy lunch to my students”. Seven teachers included language indicative of eating disorder conscious teaching, either implicitly or explicitly including it in their classrooms. More examples of what can be done for students displaying disordered eating behaviors will be covered in the conclusion.

Problems and Limitations

In the process of completing the research portion of this project there were few problems. I was able to recruit more participants than I originally anticipated– one hundred twenty five in total, and though it was difficult to synthesize and analyze that amount of data, a larger population size is often thought to be beneficial. Also regarding population, the majority of participants are people that I know and interact with, and I am aware that this population may have a higher rate of eating disorders and disordered eating than the general populace.

Regarding the multistep nutrition lesson, it was difficult to control the variables regarding its instruction, due to the fact that I was not the one actually teaching the lesson plan. In the future, if I were to continue this research, I would want to physically teach the lesson myself. In addition it would have been beneficial to record said lesson to avoid the need for second hand description of discussions managed in the classroom.

Finally, I would like to acknowledge that the topic of this research project involved a large amount of learning on my part regarding human development and psychology. I am a liberal studies major, and that is what I plan to do vocationally, as well as in my future academic endeavors; however, I do have a fair amount of experience handling these topics. All this said, if I were to select a research topic again that would include literature review and data collection of this scale, I would select a topic that more directly relates to my field of study.

Conclusion

This senior capstone research project sought to find the answer to the question: "What are the implications of California State Standards in relation to disordered eating for school aged children?" by exploring existing research on the topic, completing my own survey of graduated students and educators experiences, and analyzing the results of a multistep nutrition lesson that encouraged normative eating habits. In addition, this project also strove to answer the following questions, *"What is disordered eating? And how does it manifest in school aged children? What do the California state standards say about the consumption of food for school-aged children? Should California state standards for school-aged children change in regards to feeding and eating?* And finally, *what can be done at the classroom level for school-aged children who experience disordered eating?"* in order to establish background information required to answer the primary question. This endeavor resulted in the conclusion that the current California State Standards have harmed students' relationship with food and exercise, either by the omission of preventative measures or explicit nutrition instruction that incited disordered behavior. Because of this conclusion, it is recommended that retrospective action be enacted to prevent future harm for affected populations– including implementation of an expository curriculum for elementary students, the inclusion of an eating disorder unit in middle and high school health standards, comprehensive education for all school staff, and further large scale research on this topic.

Implementation of an exposure based curriculum for elementary school, and the inclusion of an eating disorder unit in middle school and high school cannot reverse the harm experienced by past students regarding the relationship between California State Standards and disordered eating. However, it can decrease the possibility of harm experienced by future school aged children. At the state level, this might mean amending the state standards to include new content,

as well as changing the standards that utilize moralized language, and sponsoring curriculum that would reflect these changes in a way that decreases the possibility of well meaning “creative” lessons that cause equal harm. There is a wide variety of programs and curriculum that have already been studied and developed for age groups ranging from young children to college students and beyond. An example of an effective curriculum for an elementary population is, "Healthy Body Image: Teaching Kids to Eat and Love Their Bodies Too!", which was documented in a peer reviewed research study cited earlier in the literature review portion (Knightsmith, Treasure, and Shmidt, 2013). It is imperative to acknowledge that lasting change will not be quick or “easy”, as education practices rarely are, but it is arguably necessary in promoting a healthier environment for everyone involved. As for the application of small scale change at the classroom level, short term implementation is far more attainable than statewide change. This would be at the discretion of educators, administrators, and school districts. School staff who see the issue and the need for change may advocate for the use of these initiatives, but it is unlikely that this change will be realized without further education of school staff and additional, larger research efforts.

Comprehensive eating disorder education for all school staff and further large scale research on this topic are recommended after reviewing the results of the research completed within this project, as well as surveying the available data. As mentioned earlier during discussion of implementation of a new curriculum on this subject, educators, administrators and school staff must receive proper education in order to not only teach students about disordered eating– but recognize concerning signs, symptoms, and behaviors exhibited by students who already experience this issue. These educational professionals must be aware of how their own ideals and behaviors around food and exercise affect themselves, as well as the populations they

serve. Until these aspects are rectified, any changes to curriculum and state standards will not be able to be properly enforced. The final recommendation supported by this project is the instigation of further large scale research on the connection between kindergarten through twelfth grade education practices and disordered eating. One of the reasons I selected this topic was the lack of research on this issue, despite personal experiences with children and peers who had experienced harm. Due to the small scale of this project, it was unable to capture a larger picture of the effects on the general populace. For this reason, repetition with a larger sample size would benefit students, educators, and all other stakeholders. All of the data considered, the established data and the research completed in this project supports the fact that there is a direct correlation between California State Standards and disordered eating– and students, educators, and families deserve a better way forward.

References

Austin, S. B., Ziyadeh, N. J., Forman, S., Prokop, L. A., Keliher, A., & Jacobs, D. (2008, October). Screening high school students for eating disorders: Results of a national initiative. Preventing chronic disease. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2578782/

A visual history of food guides. (2014, February 19). *News*. https://www.hsph.harvard.edu/news/magazine/centennial-food-guides-history/

Block, G., Neumark-Sztainer, D., Denny, K. N., Fulkerson, J. A., Katzman, D. K., Golden, N. H., Irwin, C. E., Livingstone, M. B., Ross, M. M., Krebs, N. F., Haines, J., Lachat, C., Robinson, T. N., Nestle, M., Marcus, M. D., & Barlow, S. E. (2014, August 12). *Body image and health: Eating disorders and obesity*. Primary Care: Clinics in Office Practice. https://www.sciencedirect.com/science/article/abs/pii/S0095454314000347?via%3Dihub

Bradbury, Z. (2021, March 4). Orthorexia: How my pursuit of "health" resulted in an eating disorder. Butterfly Foundation. Retrieved from https://butterfly.org.au/orthorexia-how-my-pursuit-of-health-resulted-in-an-eating-disorder/

Bradner Jasik MD, C. (2014, August 12). *Body image and health: Eating disorders and obesity*. Primary Care: Clinics in Office Practice. https://www.sciencedirect.com/science/article/abs/pii/S0095454314000347?via=ihub

Bratman, S. (2017, July 24). Orthorexia vs. theories of healthy eating - eating and weight disorders - studies on anorexia, bulimia and obesity. *SpringerLink.* https://link.springer.com/article/10.1007/s40519-017-0417-6

Ceroni, L. (2019, Oct 30). Demonizing food? It's a sign of orthorexia. *Best Health*. Retrieved from https://www.besthealthmag.ca/article/demonizing-food/

Change Creates Change. (2022, August 3). Disordered eating Vs. Eating disorders. Retrieved from https://changecreateschange.com/disordered-eating-vs-eating-disorders-whats-the-dif ference/

Davis, C. (n.d.). Past, present, and future of the Food Guide - *Proquest*. *journal of the American Dietetic Association.* https://www.proquest.com/docview/218404938?pq-origsite=gscholar&fromopenview=true

Frankus, J. (2021, Dec 11). A dangerous health class assignment: The PE nutrition unit. Redwood Bark ~ The Students News Site of Redwood High School. Retrieved from: https://redwoodbark.org/70523/opinion/a-dangerous-health-class-assignment-the-pe-nutrition-unit/

Garner, D., & Garfinkel, P. (n.d.). *Handbook of treatment for eating disorders*. Google Books. https://books.google.com/books?hl=en&lr=&id=3gmogQshI_MC&oi=fnd&pg=PA3&dq=eating%2Bdisorders&ots=WLm-Ga8sA_&sig=kYJ2JhZIwZEI5p7OBDuV4aJmJK8#v=onepage&q=eating%20disorders&f=false

Grattan, S. L. (2022, June 22). 20 teacher-approved nutrition activities for Middle School. Teaching Expertise. https://www.teachingexpertise.com/classroom-ideas/nutrition-activities-for-middle-school/

Grens, K. (2012, May 18). California teens eat fewer calories in school. *Reuters*. Retrieved from https://www.reuters.com/article/us-health-california/california-teens-eat-fewer-calories-in-school-idUSBRE84H0Q720120518

Health Education Content Standards for California Public Schools. (2009). Retrieved from https://www.cde.ca.gov/be/st/ss/documents/healthstandmar08.pdf

Horberger, L. (n.d.). Identification and Management of Eating Disorders in Children and Adolescents . Publications.aap.org. https://publications.aap.org/pediatrics/article/147/1/e2020040279/33504/Identification-and-Management-of-Eating-Disorders?autologincheck=redirected

Kater, K. J., Londre, K., & Rowher, J. (2002, May). Evaluation of an upper elementary school program to prevent body image, eating, and weight concerns. *The Journal of school health*. Retrieved from https://pubmed.ncbi.nlm.nih.gov/12109175/

Knightsmith, Treasure, & Shmidt. (2013). Spotting and supporting eating disorders in school: recommendations from school staff. Academic.oup.com. https://academic.oup.com/her/article/28/6/1004/596113

Konstantinovsky, M. (2022, Sept 7). c. *Equip Health*. Retrieved from https://equip.health/articles/undefined/PE-and-eating-disorders

Mccabe, M., Ricciardelli, L., & Stanford, J. (2006). Where is all the pressure coming from? Messages from mothers and teachers about preschool children's appearance, diet and exercise. https://onlinelibrary.wiley.com/doi/abs/10.1002/erv.717

MyPlate Plan. MyPlate. (n.d.). Retrieved from https://www.bing.com/search?q=MyPlate%20Plan.%20MyPlate.%20%28n.d.%29.%20https%3A//www.myplate.gov/myplate-plan&FORM=ARPSEC&PC=ARPL&PTAG=30155

Nadworny, E. (2014, Nov 24). Tools of the trade: The presidential physical fitness test. *NPR*. Retrieved from https://www.npr.org/sections/ed/2014/11/24/365716113/tools-of-the-trade-the-presidential- physical-fitness-test

Neumark-Sztainer, D. (2007, Aug 31). Addressing the spectrum of adolescent eight-related problems: Engaging parents and communities. *Prevention Researcher*. Retrieved from https://eric.ed.gov/?id=EJ793253

Nevin, S. M., & Vartanian, L. R. (2017, August 25). The stigma of Clean Dieting and Orthorexia Nervosa - Journal of Eating Disorders. *SpringerLink.* https://link.springer.com/article/10.1186/s40337-017-0168-9

Nihiser, A. J., Lee, S. M., & Wechsler, H. (2007, Dec). Body mass index measurement in schools - *Wiley Online Library.* *https://onlinelibrary.wiley.com/doi/full/10.1111/j.1746-1561.2007.00249.x*

Poppendieck, J. (2010). *Free for All*. Google Books. https://books.google.com/books?hl=en&lr=&id=q7owDwAAQBAJ&oi=fnd&pg=PP9&d

q=Do%2BCalifornia%2Bstate%2Bstandards%2Bcause%2Bmore%2Bharm%2Bor%2Bbenefit%2Bto%2Bschool%2Baged-children%2Bin%2Brelation%2Bto%2Bfeeding%2Band%2Beating&ots=O8yqiVjlmn&sig=wJKB2J-FSShw_3wrEW3DSv6r0M8#v=onepage&q&f=false

Rizzitano, E. (2023, September 28). *Is it "good" or "bad" For your child? removing morality from eating*. Boston Children's Answers. https://answers.childrenshospital.org/removing-morality-from-eating/

Schwartz, M., & Henderson, K. (2009). Does obesity prevention cause eating disorders?. *Journal of the American Academy of Child and Adolescent Psychiatry.* https://pubmed.ncbi.nlm.nih.gov/19628995/

Sole-smith, V. (2020, Nov 12). Are schools teaching kids to diet?. *The New York Times*. Retrieved from https://www.nytimes.com/2020/11/12/parenting/remote-learning-schools-diet-kids.ht ml

Statistics & Research on Eating Disorders. (2021, July 14). National Eating Disorders Association. Retrieved from https://www.nationaleatingdisorders.org/statistics-research-eating-disorders

Appendix A- Health Education Content Standards for California Public Schools

K.2.1.N Recognize that not all products advertised or sold are good for them.

2.5.1.N Use a decision-making process to select healthy foods

4.1.3.N Describe the relationship between food intake, physical activity, and good health.

4.7.2.N Practice how to take personal responsibility for limiting sugar consumption in foods, snacks, and beverages.

5.6.1.N Monitor personal progress toward a nutritional goal.

5.6.2.N Monitor personal progress toward a physical activity goal.

7-8.1.13.N Explain how to use a Body Mass Index (BMI) score as a tool for measuring general health.

7-8.6.1.N Make a personal plan for improving one's nutrition and incorporating physical activity into daily routines.

9-12.1.5.N Describe the relationship between poor eating habits and chronic diseases such as heart disease, obesity, cancer, diabetes, hypertension, and osteoporosis.

9-12.1.11.N Identify the causes, symptoms, and harmful effects of eating disorders.

9-12.4.2.N Practice how to refuse less-nutritious foods in social settings.

9-12.5.1.N Demonstrate how nutritional needs are affected by age, gender, activity level, pregnancy, and health status.

9-12.6.3.N Create a personal nutrition and physical activity plan based on current guidelines.

Appendix B: Research Questions for Past Students

1. When did you graduate high school?
    a. 2016-2020: 46 responses
    b. 2021-2025: 29 responses
    c. Before 2005: 12 responses
    d. 2011-2015: 6 responses
    e. 2026-2030: 4 responses
    f. 2006-2011: 3 responses
2. What region did you complete the majority of your education in?
    a. Northern California: 43 responses
    b. Southern California: 35 responses
    c. Other State or Country: 21 responses
3. How were your experiences with feeding and eating during elementary, middle, and high school? Rank on a scale from 1-10 with 1 being almost completely healthy (ie- food and exercise neutrality, intuitive eating) and 10 being unhealthy (ie- developing disordered eating, moralization of food)
    a. 1: 1 response
    b. 2: 8 responses
    c. 3: 5 responses
    d. 4: 7 responses
    e. 5: 9 responses
    f. 6: 9 responses
    g. 7: 19 responses

   h. 8: 20 responses
   i. 9: 13 responses
   j. 10: 9 responses

4. Did these experiences ever make you feel judged or othered?
   a. Yes: 65 responses
   b. No: 34 responses
5. Did you learn about calories and nutrients in a school setting?
   a. Yes: 67 responses
   b. No: 33 responses
6. Did you ever feel pressure to eat less or cut out certain foods?
   a. Yes: 73 responses
   b. No: 26 responses
7. Did any of these experiences affect your relationship with feeding, eating, or exercise? How so? Please elaborate:
   a. Yes. A big thing my high school was into was the state standardized PE testing. At my school if you passed the fitness test you were allowed to defer PE to a later year. If you did not pass you had to take a PE course the next year. For my school plan to work out, the one that my guidance counselor set up, I had to pass the fitness test. I had never passed before and this time I was doing it with a sprained ankle. Pretty much the only way for me to pass was if I passed the BMI portion of the exam. It became a big thing in my head that I had to pass the bmi portion. It still follows me that idea that I have to have a certain BMI. It was always the part I had failed in elementary and middle school. I ended up passing the BMI portion

but it only added to my history of disordered eating. I have more stories and I know you have my number so feel free to text me if you need more! This one I thought was a good one! Good luck girl you got this!!!

b. The public school experience had a negative effect on my relationship with food and exercise. I did dance through all of my k-12 Education and that in combination with what I learned in PE and Health was really damaging to my mental health. Being in the locker room and changing in front of my peers made me feel the worst, especially when the teacher would comment on our PE uniform choices. Seeing the calories on all the food choices also was hard-- I wanted to eat as little as possible whenever I saw the nutrition info. Curriculum wise, learning about calories and nutrients in late elementary school was detrimental to my mental health, especially when it came to making weight loss goals. I am 21 now and I don't have a diagnosed eating disorder but the habits learned in school certainly aren't healthy and they still follow me.

c. Definitely. Unfortunately, the societal pressures people feel around food can often be amplified in a classroom setting. A lot of my teachers had problems with disordered eating and exercise, and they let that effect the way they interact with students and teach curriculum. I remember hearing about the diet plans my elementary school teachers were on— no fat, no carbs, no sugar, no gluten, no dairy, no fun. Even though this is not expressly teaching a bad relationship with food it still effected me. When it comes to actual curriculum, I think most about the moralization of food. High calorie foods were treated like garbage, that shouldn’t be eaten at any cost. Our lunch boxes were picked apart and it left me

like feel like never eating again. I developed anorexia as a teen and it still is something that I deal with now.

d. i only actually started to count calories in college/ this year. i've always been conscious about my body even though im slim and have always been first it was the kardashian era and i wanted to be thick that never happened but still even then i was always worried about being fat i even began exercising because of this when i was as young as 13/14 only this year that someone proposed me the idea of modeling which made me feel good about my body at first but then i completely flipped it and couldn't understand why anyone would think im fit for that and since then i spiraled i can't eat without feeling awful about it and i check calories for everything. i take advantage of being at school so that it distracts me from my hunger and only eat something light when i get home.

e. There were a lot of issues with the way I was taught about food and eating in my K-8 education. I distinctly remember 2 memories. First, being taught how to analyze and pick apart a nutrition label. That was scarring, fat and sugar and carbs should be avoided at all costs— at least that's what little me thought. Secondly, being weighed my freshman year of high school. I was already fully diagnosed with bulimia and they still weighed me and announced my weight in front of everyone. All for the sake of the stupid fitness test. Now, I'm about to be a teacher, and I'm scared that I'm going to mess up my students because of my own feelings about food. I don't want them to hurt like I did but it seems the curriculum supports that.

f. I have had anorexia, bulimia, and now arfid. It started in late elementary school. I started counted calories in middle school, and that made my behaviors spread like wildfire. The optimal number of calories per day was zero, and honestly, sometimes it still feels like that is true now. I hit 100 pounds in 5th grade (for the first time). I still remember the day because it was measured in front of my peers for presidential fitness testing. My teacher told me to eat less carbs because I should only gain 10lbs a year till I was in high school which was crazy. I also remember the pacer test feeling like hell, because I never felt good enough compared to my friends. ugh. good luck with your research!

g. In a way yes. I was bullied in elementary school I'd assume because I was the new one in town, shy, quiet and quite easy to pick on. Was a bit chubby as well and that was pointed out frequently by my classmates and also the people who I lived with. Eventually due to the stress that I was put under, I ate more intuitively, gained weight obviously and around the age when I became aware of myself, my body and the way I looked, I started to develop disordered eating habits. I wasn't able to force myself to eat in front anyone else besides family. I was afraid I'd be seen as fat. Then switched schools and somehow the habits eventually turned into an actual eating disorder.

h. Um, well. My family made too much to qualify for reduced or free lunch but were poor enough that we couldn't afford cafeteria food and my parents were too busy working to pack me lunches so it was up to me and most of the time I just... didn't do it because I was a kid. So I went hungry a lot at school. There wasn't any moralization of food or anything, I just didn't have the resources to eat. In high

school it was a little different, at least, because the school was an open campus and I didn't live far so I could go home to eat lunch. I did a lot of skating and biking for exercise, no big issues there.

i. I have an eating disorder. I can say with confidence that its because of school. when I was in 6th grade we had to count our calories and were strongly encouraged to be eating 1200-1600 calories as active growing teens. Being the overachiever I am, I took it upon myself to eat as little as possible. My PE teacher commended me for that and had everyone clap for me when he found out how much weight I had lost. After this point, I stopped eating, and sleeping, and began avoiding attending events where eating was involved.

j. I had a lot of negative experiences around food and eating during middle school and high school. I distinctly remember learning the amount of calories in a gatorade and being told that we would spend the rest of class "burning off" those calories. On another occasion I had a teacher tell me that I should cut out carbs and dairy because they were morally wrong. Now, Im an adult and I have an eating disorder. All to say these experiences effected me negatively and I don't want other kids to be taught these things.

k. Having a nutritionist come and present in middle school was really hard for me. I was already experiencing and eating disorder so looking at nutrition labels and calorie contents made me feel very distraught. The lesson centered on what we, as children, needed to take OUT of our diets. It encouraged weight loss and eating less of everything. I don’t think that’s a message 13 year olds need. Nutrition

Education should focus on adding things IN, to make food more satisfying and nutrition rich and avoid moralizing.

l. Had issues with weight all through school. Went to a weight loss camp in MS that changed my experience through HS for the positive. Had a really hard time up to that point. In my early 20s joined WW (and many times after that) and a gym and one of the first times, pretty healthy, but it didn't stick. I still have issues as an adult but see it as more of a quality of life issue and wanting to be around for a long time for my kids and their kids, so I'm trying my best to make good choices. 🙂

m. Since I never really learned about food and the food offered at school wasn't that healthy or good I often struggle to eat well. As a result of this and other factors I developed disorder eating. Also relying on food offered at home was also not quite healthy and sometimes varied until I got older and was able to make my own foods. I still struggle with disordered eating but I believe I am getting better.

n. I would eat really fast, bigger quantities than normal and didn't properly chew. I wasn't taught how to properly eat or how to portion my food. Because of this, I would be made fun of by my peers which led me to not eat in front of them. So I would end up extremely hungry throughout the day and then when I would get home, I would eat larger portions to satisfy my hunger.

o. Learning about nutrition in school didn't trigger me, but seeing nutrition posts on Instagram did. In hindsight, on Instagram it was "dramatized" but in school the information felt "friendlier". Peers in person or discussion online calling those

with disordered eating “selfish/ungrateful” or a “rich white girl problem” just made me fall harder.

p. I remember watching the SuperSize me video in middle school and thinking I was fat bc I ate mcdonalds with my grandma a lot and other kids didnt and i guess i just made the correlation in my head that eating food and feeling full was bad and I stopped eating hardly anythinf and got wayyy too skinny and unhealthy by early highschool

q. I remember in junior high, gaining weight and looking at the other girls. So I went on a diet and drink orange juice for lunch and had a few slices of lunchmeat and a few slices of cheese. I remember my teacher, commenting and encouraging me to eat more and be healthy. he was a great teacher who cared about us.

r. I would get beaten by my parents if i didn't eat all of the adult sized portions i was given causing me to become very overweight. I was then bullied for the weight by my peers and parents (ironic i know) Ever since ive fallen into a vicious cycle of binging in private and restricting in public

s. It was never an issue for me. My dad owned three Cafes. That served the theater crowd. Lots of ice cream, candy and popped corn. Bergers and Cokes. I worked in all of them at one time or another when I was in high school. We were so active that I never had a weight issue.

t. I think it made later on it made me feel insecure about myself because I have always seen myself as the chubby one of the group. Especially in school because I would feel that if I finished completely my lunch I would look like a desperate girl who ate everything.

u. I suffered from anorexia nervosa, bulimia and clinical depression. Thankfully, by the grace of God, my hard work, determination and a lot of therapy I've pretty much recovered but it is a life-long journey and I still occasionally have those tendencies.

v. I had to teach myself as an adult the importance of having a balanced meal and not indulging in fast food. Growing up it was XL cokes and Taco Bell all of the time. Now it's meal planning and making sure I'm getting what my body needs

w. Food is a place I struggle. I am fat, but I wasn't always fat. I restricted because school made me fear gaining weight. Now I have binge eating disorder and I can't stop. The calories still live in my head and I don't know what to do.

x. In high school I ate one chocolate donut every single day at break time. I never counted calories back then or worried about the amount of sugar or carbs I was Intaking. I exercised often in high school because I played sports.

y. Ill never be able to read a nutrition label the same way after what I experienced in 5th grade. Food is not only for fuel, its also for fun. I was told that the goal should be to eat as few calories as possible.

z. Having to track my calories in middle school PE was really traumatic for me. I began to fear food and started engaging in unhealthy behaviors. The teachers attitude towards her own food and body made it worse.

aa. Ate my grandmother's (or aunt's) cooking during my summers on the apple orchard during the summer (lots of exercise!) and my Mom's cooking during the school year in the city(still a lot of outdoor exercise).

bb. Yes; parental influence made my perception of food heavily thwarted. I saw certain potentially damaging behaviors (calorie counting, overexercise, body shaming, etc.) and assumed them to be typical.

cc. Yes. The way schools spoke about ‘obesity’ was incredibly harmful to me as a young fat child. Being one of the only fat kids in class there always felt like eyes on you in health class or PE.

dd. I mainly developed my disordered eating by comments form my peers which contributed to why I rated my eating a 7 on the health scale as I started restricting in middle to high school.

ee. I was always underweight & was always judge how skinny I was so I always thought I needed to eat more but then i would feel guilty. (i have a better relationship with food now)

ff. Yes, I couldn’t play soccer anymore and missed school because of eating disorder treatment. Eventually no foster family would take me in and I ended up in group homes until 18.

gg. I realized, in college, that I probably ate too much which stemmed from childhood phrases like "clear your plate" or "eat everything on your plate" "food is money" type words.

hh. Yes. Having food insecurity led to binge eating when food was available. As an adult I have managed to control my eating habits but as a teenager it was very difficult.

ii. Not to a huge extent, but I do remember feeling self-conscious about my body in middle school, and that probably did make me more conscious of my eating habits.

jj. During school hours, the options, prices, and time we were given to eat weren't enough to justify myself bringing enough of a meal to last throughout the day

kk. The way schools have been teaching nutrition was toxic for me and alotta ppl I know. No child under 15 should be setting calorie related goals.

ll. Feeling shamed about the way I looked or the food I ate resulted in me forming an unhealthy relationship with food and exercise at a young age.

mm. I would starve myself sometimes to loose weight that I gained when I was younger because that's how I coped with what I was going through

nn. Perhaps. I think not being allowed to eat the things I wanted when I wanted as a kid led to me becoming a more gluttonous adult.

oo. The exact thing, probably, affected my relationship with food - were relations with parents and family food culture

pp. I would starve myself during school days and binge at night. I wouldn't exercise but then overate later at night.

qq. I don't really have food issues now, but food was really moralized in the way I kinda learned about it in school.

rr. Yes, I'm an adult and I still struggle to eat correctly. I can't eat anything without looking at the calories.

ss. I eat what I want when I want. I exercise to be healthy. Health physically and mentally are important to me.

tt. it was never enforced that not eating was bad in school, so I just followed what the other girls were doing

uu. I stopped eating breakfast anymore due to trying to eat less and it affected my appetite

vv. This info I learned in school was frustrating it made me feel guilty for feeding myself

ww. I was eating less than I was supposed to, instead of taking into account the calories.

xx. voluntarily got weight loss surgery at 14 and it has messed me up beyond belief

yy. I went days without eating because i thought if I did I'd be fat

zz. Yes I am always afraid of going back to my old weight

aaa. Yes I felt like I needed to count my calories

bbb. Friend went on diet with me at a young age.

ccc. No impact with feeding, eating or exercise

ddd. Mostly peers and family

eee. Poor nutrition

fff. Some variation of no: 8 responses

Appendix C:Response to Research Questions For Current Teachers

1. What grade do you teach?
    a. K-2: 9 responses
    b. 3-5: 8 responses
    c. 9-12: 3 responses
    d. Other: 3 responses
    e. 6-8: 2 responses
2. Where do you teach?
    a. Santa Ana Unified School District: 12 responses
    b. Alisal Union School District: 1 response
    c. Los Angeles Unified School District: 1 response
    d. Northern Georgia: 1 response
    e. Monterey Bay Charter School: 1 response
    f. Pajaro Valley Unified: 1 response
    g. Hoover City Schools: 1 response
    h. New Lebanon County School District: 1 response
    i. Norris School District: 1 response
    j. Monterey Peninsula Unified School District: 1 response
    k. Placer School District: 1 response
3. As a person, what experiences do you have around food and eating? Rank from 1 to 5, with 1 being completely positive and 5 being completely negative.
    a. 1: 8 responses
    b. 2: 4 responses

   c. 3: 8 responses
   d. 4: 3 responses
   e. 5: 2 responses

4. Do you feel that you would be able to recognize the signs of disordered eating in a student?
   a. Yes: 15 responses
   b. No: 2 responses
   c. Other: 8 responses
5. How do you teach “healthy” nutrition?
   a. I teach health and PE so this is my thing! I teach healthy eating and exercising by talking about what foods and amounts of foods make our bodies happy. I also talk about not taking out any food or food group, but adding foods to make it fit-- not eating a dozen donuts, but eating a donut with some eggs and fruit. I do not have students count calories or set weight loss goals, despite that being in the curriculum my district teaches.
   b. For my grade level Physical Education Curriculum we are asked to teach nutrition. I do lessons on : natural foods vs. Process fiods, importance of calcium intake for young children, what does a healthy plate look like (portion control), and sugar facts for example the formula on how to figure out the grams of sugars in foods especially juices and sodas.
   c. Modeling healthy food choices (bringing fruits, veggies and a couple crackers for snack), talking about taste of fruits and veggies, saying “I love that — is eating their veggies/fruits”. We have snacks provided by school

that includes healthy fruits veggies and some carbs. Lots of kids get sent with donuts and sugary things. It's hard

d. In elementary physical education, we focus more on staying fit for life by introducing students to activities that can be maintained for life (ex. Setting walking/running goals, roller skating, golf, recreational games, etc). We focus on four components of fitness but do not focus on body composition.
e. I take a scientific approach and really talk about the nutritional needs for our bodies to be healthy and strong. We also talk about the mental health component and body image and how it connects. Try to take an anti-diet culture approach.
f. I have discussions with my students about making sure they eat healthy foods to fuel their brains. Also, how unhealthy eating can cause us to have stomach aches, lack energy, and make us feel sick.
g. We talk about foods they eat at home. I occasionally play a video of the importance of eating 5 fruits and veggies. We also do coloring pages about healthy foods and have a class discussion.
h. Emphasize moderation of everything, use positive words when talking about healthy foods rather than using negative words for "junk" foods, personalize work whenever possible
i. I work with students on mindful eating. I frame lunch time/snack time as a time to take in our food that nourishes our bodies, and enjoy is smell, texture, and taste.

j. In Kindergarten we talk about fresh fruits and vegetables as a better choice than chips and sweets. We also stress the food values of milk and juice vs. soda.

k. My school is partnered with Healthy Tomorrow s and they provide lessons for our students. Teachers reinforce the lessons they teach.

l. I model eating a healthy snack daily (banana or apple) and drinking water. Occasionally I show my healthy lunch to my students.

m. In primary grades it's pretty basic teaching about food group. We have discussions in class about balanced diets, etc.

n. We talk about the importance of hydrating and not eating empty or extra calories.

o. We used to present new produce of the month, and everyone had a chance to try it.

p. We have a health focus week once a year and talk about "my healthy plate".

q. I don't teach it. It isn't part of the content I am expected to teach

r. By following the Guidelines on the 4 Basic Foods Groups

s. Just reminding my kinders about how moderation is key

t. I have a thematic month for health and nutrition

u. Whatever I find in YouTube about the subject

v. Food is not good or bad. Balance is key.

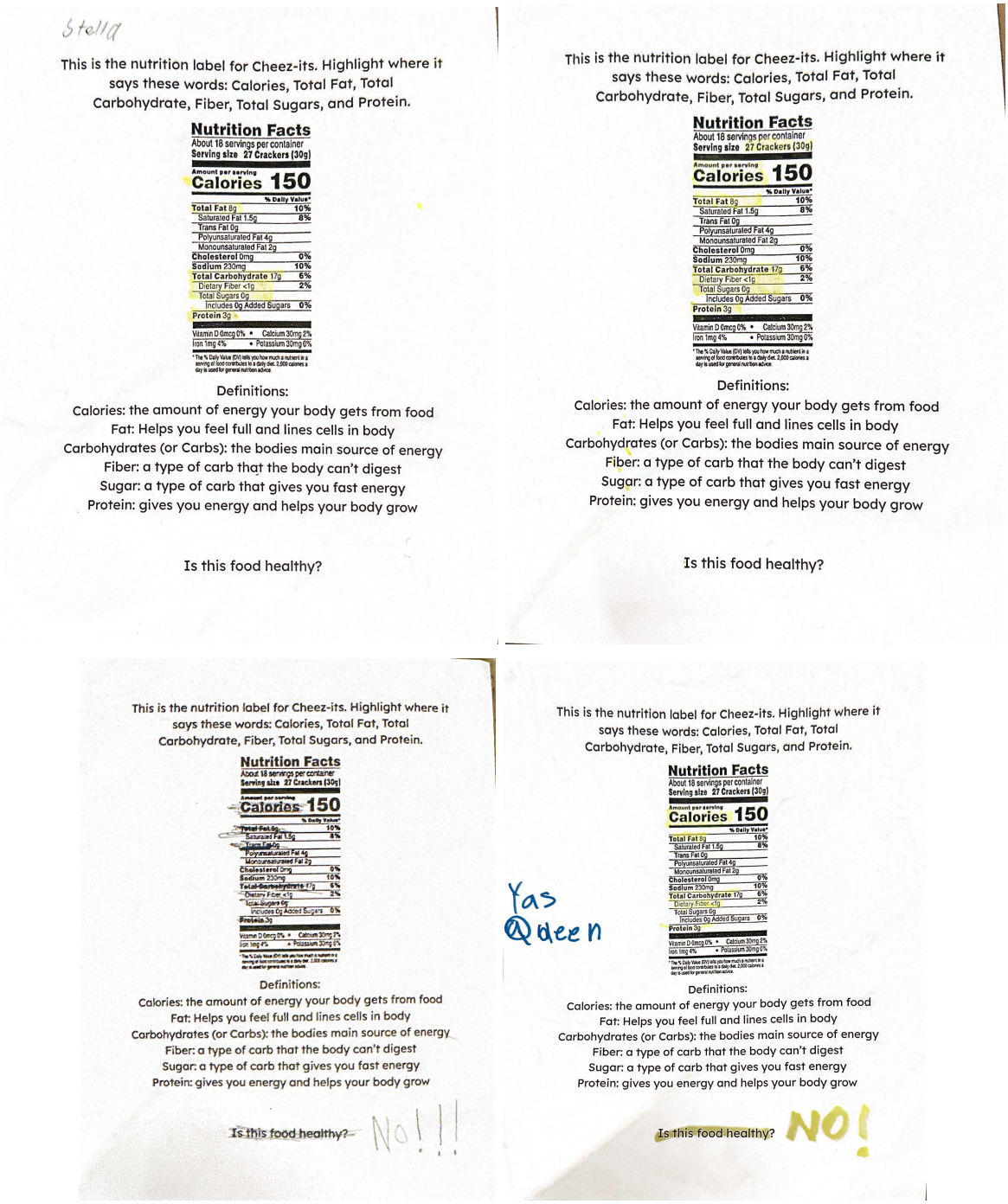
w. We try

6. Anything else to add?

a. I have so much I could say. I see a serious pattern in the teachers around me that needs to be talked about. Because teachers aren't immune to diet culture, they often are showing students disordered behavior and I see the kids copying all these activities; think dangerous crash diets, over exercise and not eating for a ~cleanse~. ALSO kids are showing their eating disorder behaviors in our classrooms, talking about all their trauma and giving reasons for why they can't eat anytime soon. I do my best to report when I can but it just happens so often and its disheartening.
b. The snacks I see students taking outside are mostly very unhealthy processed foods and artificially sweetened drinks. Fruits, yogurt, or vegetables aren’t things I see often. We use to have a nutritional program where students were taught about different fruits and vegetables and were given them as a snack to enjoy once a week. Over time, students became more open to trying new fruits and vegetables.
c. I teach in themes so like September was an apple theme, we talked about apples and what they're good for. The school district has a fruit and veggie program which gives all students a fruit or veggie to go home with them three days out of the week. A lot of kids are picky when it comes to certain foods but I feel it's important to expose them to different foods.
d. I've noticed students that have a hard time focusing in class also tend to be students whose diets consist of heavily processed "snack foods" such as cheetos/takis, doritos, chips, starbucks drinks, candy, etc. I've noticed that these students in mind don't seem to get a lot of protein or veggies.

e. We had a great program for a while that provided healthy fruit /vegetable snacks to take when school let out. The students really enjoyed it and looked forward to their healthy snack each day.
f. Our curriculum doesn't have a lot right now except we use mystery science and sometimes there are some foods presented For example, there's one on is a tomato a fruit
g. I try to use healthy options for incentives and limit sweets. I also talk about walking, yoga and hiking during the week to model healthy activities.
h. I know people in our community find it easier to purchase processed foods like chips verses a piece of fruit for a snack.
i. I think this is an area that definitely needs to be expanded upon in early education!
j. At times it is a challenge to get our older students to eat regularly.
k. I wish we had a parenting class on this subject.
l. My kids are little though so we provide the food
m. Look into food deserts if you haven't already!

Appendix D: Nutrition Lesson Examples



Stella

This is the nutrition label for Cheez-its. Highlight where it says these words: Calories, Total Fat, Total Carbohydrate, Fiber, Total Sugars, and Protein.

Nutrition Facts
About 18 servings per container
Serving size 27 Crackers (30g)

Amount per serving
Calories 150

	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Polyunsaturated Fat 4g	
Monounsaturated Fat 2g	
Cholesterol 0mg	0%
Sodium 230mg	10%
Total Carbohydrate 17g	6%
Dietary Fiber <1g	2%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 3g	
Vitamin D 0mcg 0% • Calcium 30mg 2%	
Iron 1mg 4% • Potassium 30mg 0%	

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Definitions:
Calories: the amount of energy your body gets from food
Fat: Helps you feel full and lines cells in body
Carbohydrates (or Carbs): the bodies main source of energy
Fiber: a type of carb that the body can't digest
Sugar: a type of carb that gives you fast energy
Protein: gives you energy and helps your body grow

Is this food healthy?

This is the nutrition label for Cheez-its. Highlight where it says these words: Calories, Total Fat, Total Carbohydrate, Fiber, Total Sugars, and Protein.

Nutrition Facts
About 18 servings per container
Serving size 27 Crackers (30g)

Amount per serving
Calories 150

	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Polyunsaturated Fat 4g	
Monounsaturated Fat 2g	
Cholesterol 0mg	0%
Sodium 230mg	10%
Total Carbohydrate 17g	6%
Dietary Fiber <1g	2%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 3g	
Vitamin D 0mcg 0% • Calcium 30mg 2%	
Iron 1mg 4% • Potassium 30mg 0%	

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Definitions:
Calories: the amount of energy your body gets from food
Fat: Helps you feel full and lines cells in body
Carbohydrates (or Carbs): the bodies main source of energy
Fiber: a type of carb that the body can't digest
Sugar: a type of carb that gives you fast energy
Protein: gives you energy and helps your body grow

Is this food healthy?

This is the nutrition label for Cheez-its. Highlight where it says these words: Calories, Total Fat, Total Carbohydrate, Fiber, Total Sugars, and Protein.

Nutrition Facts
About 18 servings per container
Serving size 27 Crackers (30g)

Amount per serving
Calories 150

	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Polyunsaturated Fat 4g	
Monounsaturated Fat 2g	
Cholesterol 0mg	0%
Sodium 230mg	10%
Total Carbohydrate 17g	6%
Dietary Fiber <1g	2%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 3g	
Vitamin D 0mcg 0% • Calcium 30mg 2%	
Iron 1mg 4% • Potassium 30mg 0%	

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Definitions:
Calories: the amount of energy your body gets from food
Fat: Helps you feel full and lines cells in body
Carbohydrates (or Carbs): the bodies main source of energy
Fiber: a type of carb that the body can't digest
Sugar: a type of carb that gives you fast energy
Protein: gives you energy and helps your body grow

Is this food healthy? No!!!

This is the nutrition label for Cheez-its. Highlight where it says these words: Calories, Total Fat, Total Carbohydrate, Fiber, Total Sugars, and Protein.

Nutrition Facts
About 18 servings per container
Serving size 27 Crackers (30g)

Amount per serving
Calories 150

	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Polyunsaturated Fat 4g	
Monounsaturated Fat 2g	
Cholesterol 0mg	0%
Sodium 230mg	10%
Total Carbohydrate 17g	6%
Dietary Fiber <1g	2%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 3g	
Vitamin D 0mcg 0% • Calcium 30mg 2%	
Iron 1mg 4% • Potassium 30mg 0%	

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

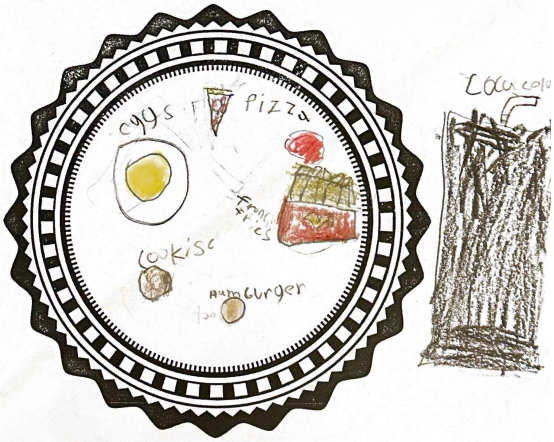
Yas Queen

Definitions:
Calories: the amount of energy your body gets from food
Fat: Helps you feel full and lines cells in body
Carbohydrates (or Carbs): the bodies main source of energy
Fiber: a type of carb that the body can't digest
Sugar: a type of carb that gives you fast energy
Protein: gives you energy and helps your body grow

Is this food healthy? NO!

LUIS

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.



ALESSio

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

Elisa

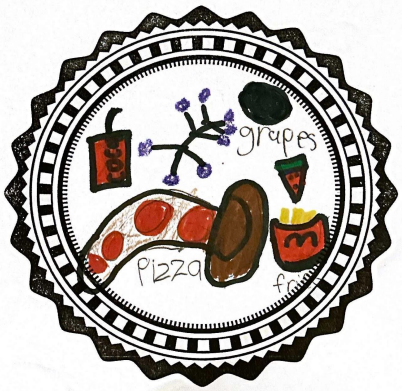
Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

Itzel

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

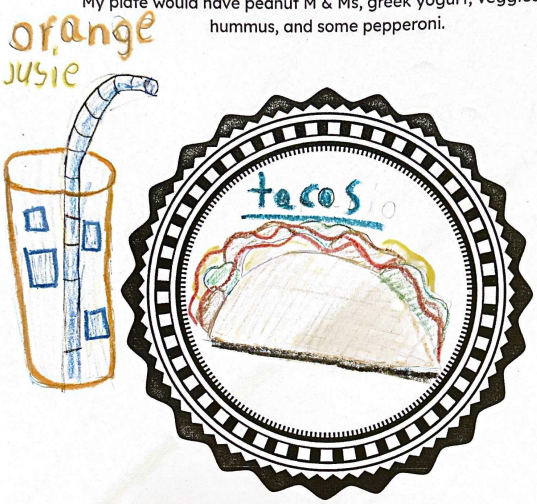


valentina

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.

Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.

My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

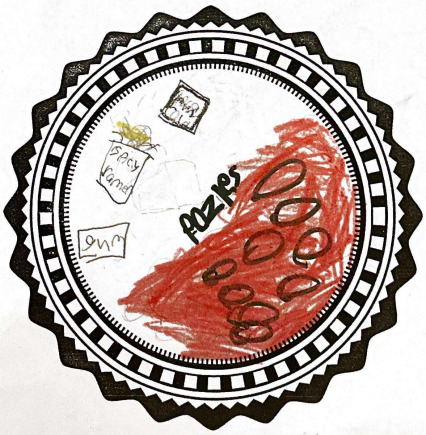


Jaden L.

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.

Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.

My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

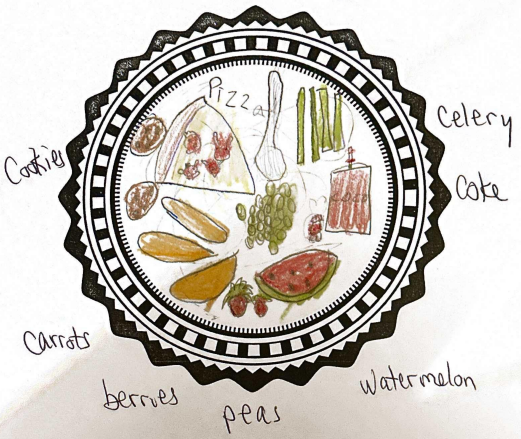


ELYSSA F.

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.

Pablo

Think of your favorite food. It might be sweet or salty or smooth or crunchy. It is okay to eat it on its own, but it might make your body feel better if you eat it with other foods. You might add sugar, carbs, protein, fat, or fiber to keep you full for longer, and give you energy.
Draw a meal with your favorite food that would make your body feel good too, and then label the foods on your plate.
My plate would have peanut M & Ms, greek yogurt, veggies with hummus, and some pepperoni.



Appendix E: Synthesis of Nutrition Lesson Examples

Student number:	1	2	3	4	5	6	7	8	9	10
Foods selected:	eggs pizza cookies fries burger coke	yogurt ice tea strawberries omelet	pasta watermelon ramen	candy water	ramen pizza tamale nuggets grapes cereal tomatoes	grapes pizza fries coke	tacos juice	ramen gum coke pozole	ramen fruits quesadilla tuna desserts hot cocoa	cookies pizza carrots berries peas watermelon coke celery
Does this meal include an adequate source of protein, carbohydrates, and fat?	yes	yes	no	no	yes	yes	no	yes	yes	yes

Figures And Tables

Figure 1

Figure 2

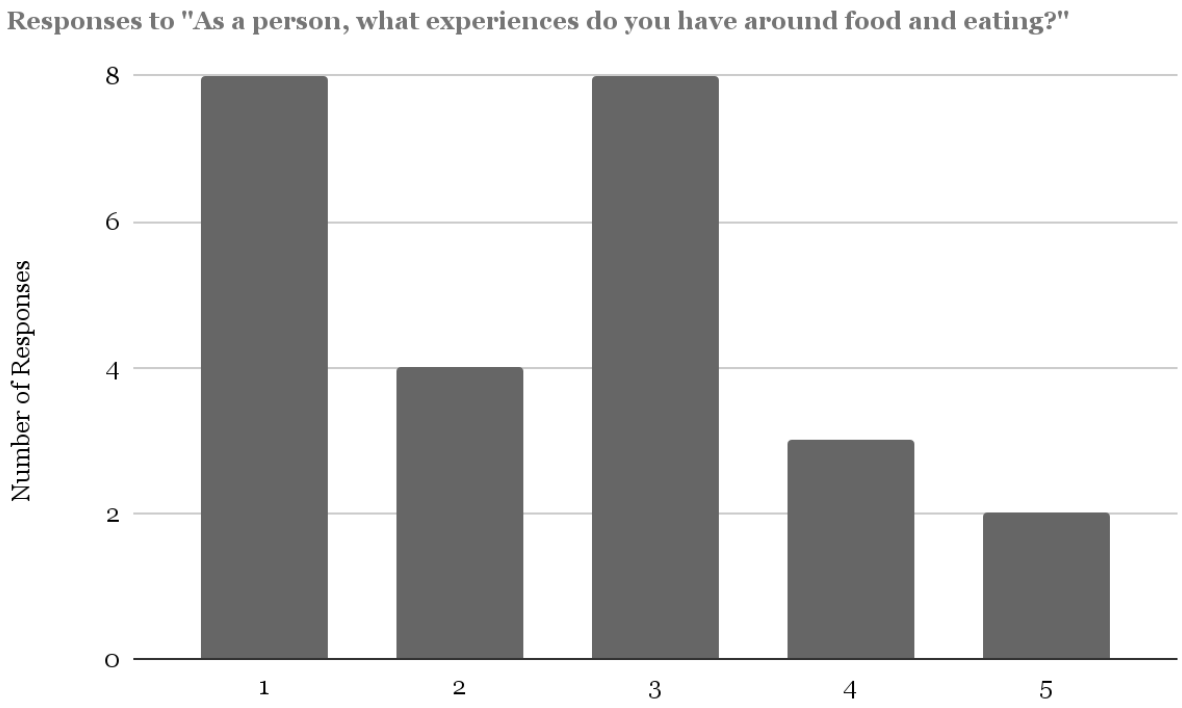


Figure 3

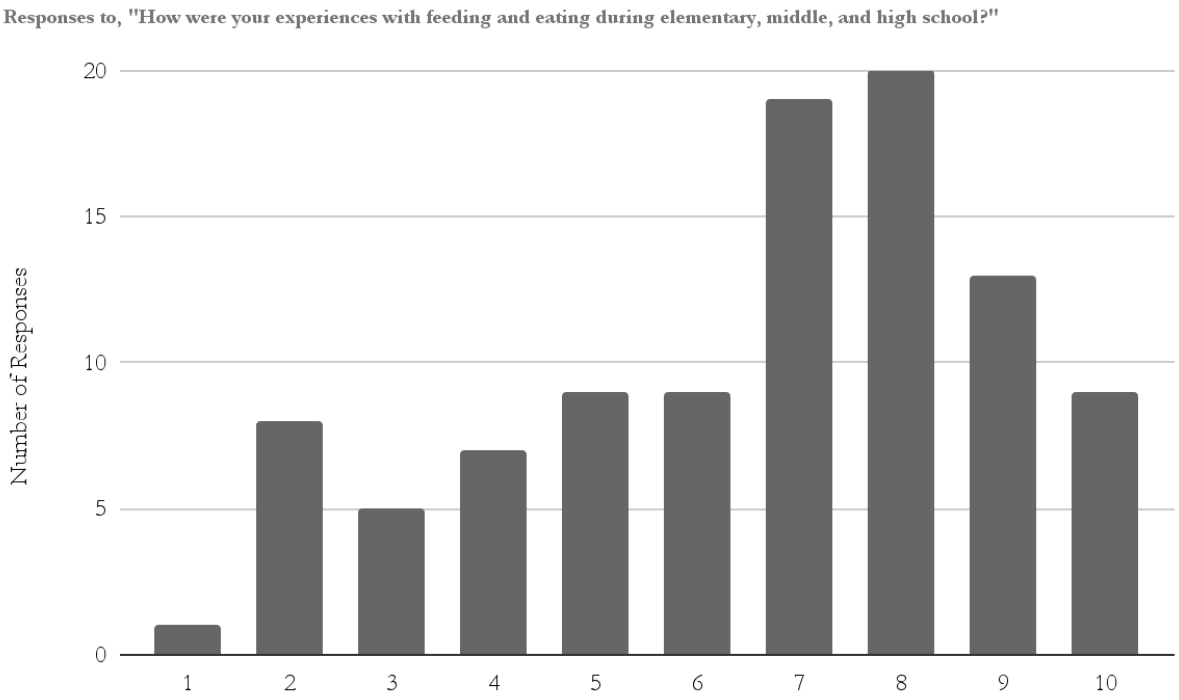


Figure 4

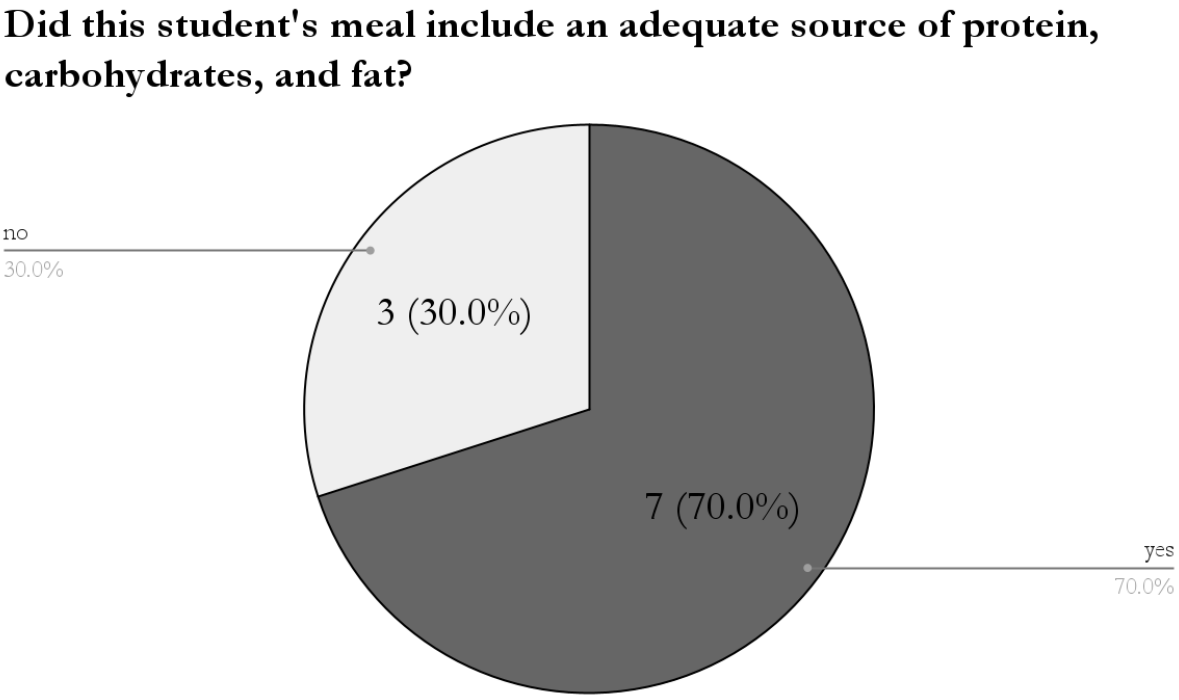


Table 1

Figure 3.1

The Spectrum of Eating-, Activity-, and Weight-Related Concerns

	Healthy →	→	→	Problematic
Weight control practices:	Healthy eating	Dieting	Unhealthy weight control behaviors	Anorexia or bulimia nervosa
Physical activity behaviors:	Moderate physical activity	Minimal or excessive activity	Lack of, or obsessive, physical activity	"Anorexia athletica"
Body image:	Body acceptance	Mild body dissatisfaction	Moderate body dissatisfaction	Severe body dissatisfaction
Eating behaviors:	Regular eating patterns	Erratic eating behaviors	Binge eating	Binge eating disorder
Weight status:	Healthy body weight	Mildly overweight or underweight	Overweight or underweight	Severe overweight or underweight
	Healthy →	→	→	**Problematic**

Source: Neumark-Sztainer, D. (2005). *"I'm, Like, SO Fat!": Helping Your Teen Make Healthy Choices about Eating and Exercise in a Weight-Obsessed World.* New York: The Guilford Press.

Table 2

Table 3.1

Prevalence of Body Dissatisfaction, Weight Control Behaviors, Obesity, and Eating Disorders

	GIRLS	BOYS
Unhealthy weight control behaviors (e.g., skipping meals, eating very little, fasting, or smoking for weight loss)	57%	33%
Dieting behaviors	55%	26%
Body dissatisfaction	46%	26%
Extreme weight control behaviors (e.g., vomiting, laxatives, diet pills)	12%	5%
Binge eating behaviors	17%	8%
Obesity	15.5%	15.5%
Moderately overweight/At risk for overweight	15–20%	15-20%
Binge Eating Disorder	3–5%	1–3%
Bulimia Nervosa	1–3%	<1%
Anorexia Nervosa	0.5%	<0.2%

These data are from Project EAT and other large studies on teenagers and young adults.
Source: Neumark-Sztainer, D. (2005). *"I'm, Like, SO Fat!": Helping Your Teen Make Healthy Choices about Eating and Exercise in a Weight-Obsessed World.* New York: The Guilford Press.

Table 3

Age Group	Calorie Level									
Ages 12-23 Mos.	700	800	900	1000						
Ages 2-3 Yrs.	1000	1200	1400							
Ages 4-8 Yrs.	1200	1400	1600	1800	2000					
Ages 9-13 Yrs.	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
Ages 14+ Yrs.	1600	1800	2000	2200	2400	2600	2800	3000	3200	

Table 4

Scale Composites

Scales	Subscales
Body Image	1a) General - positive, unworried, accepting feelings about body *versus* dissatisfied, worried, or unaccepting feelings about body 1b) Feelings about height, weight and the impact of that judgment 2) Self-consciousness regarding appearance
Body Size Prejudice	3) Measures if students judge desirability by body size, *versus* do not judge body size as integral to desirability
Knowledge	4) Biological factors influencing size and shape 5) Normal development in puberty related to size and shape 6) Healthy behavioral choices related to eating/physical activity/measurement of weight 7) Risky behavioral choices; in particular, dieting
Lifestyle Behaviors	8) Source of motivation related to eating and physical activity 9) Eating behaviors or intentions 10a) Time spent in physical activity 10b) Time spent in sedentary entertainment
Self Image	11) Integrity - perceived ability to maintain choices despite peer pressure 12) Self-esteem 13) Identity based on few or diverse sources
Media	14) Ability to think critically about media messages regarding appearance