ABSTRACT

Title of Document: **CHILDREN'S CONCEPTUALIZATIONS OF HEALTH, HEALTHY BODIES, AND HEALTH PRACTICES**

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Public health officials have been giving increasing attention to, and making behavioral recommendations for, reducing obesity. Many authors attribute these behavioral recommendations to the 'dominant obesity discourse,' which rests on the assumption that weight and disease are related in a linear fashion and emphasizes personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights." However, not all researchers and practitioners agree on this discourse's effectiveness or safety. Because childhood is a critically important development period that sets the stage for health behaviors later in life, it is imperative to encourage children to have broader understandings of health that are not centered on weight. In order to achieve this aim, there is a need to explore children's conceptualizations of health, healthy bodies, and health practices as well as the factors that shape these conceptualizations.

To address this knowledge gap, a poststructuralist approach was applied to conduct in-depth qualitative interviews with eight to 11 year old children (n=29). In Study 1, children's conceptualizations of health, healthy bodies, and health practices as well as how these conceptualizations compared with the dominant obesity discourse were explored. Findings

revealed that children placed importance on specific diet and physical activity choices and a particular type of body in order to be healthy. Less frequently, children's concepts of health extended beyond diet, activity, and body size. In many cases, aspects of children's conceptualizations were informed by arguments embedded within the dominant obesity and in fewer instances, children's conceptualizations reflected alternative discourses as well. In Study 2, children's functional, communicative, and critical health literacy were compared against their conceptualizations of health, healthy bodies, and health practices. Findings suggested that children's conceptualizations were associated with certain aspects of functional (e.g., interpretation rather than identification of written health information), communicative (e.g., extraction of health information and application of this information to their own lives), and critical health literacy (e.g., belief in health information and level of participation in own health decisions).

Findings from this project can inform the development of recommendations, policies, and health promotion programs which offer a broader perspective on health and well-being and do not focus on weight.

Children's Conceptualizations of Health, Healthy Bodies, and Health Practices

By

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Dedication

To our son, who will join us in this world very shortly: I am sorry for any undue stress I caused you as I spent the majority of the last five months sitting in front of a computer screen; thank you for being so patient and well-behaved. I hope that by accompanying me through this process, you have at least started to pave a path towards lifelong learning and critical thinking. I hope that you grow up to never be afraid to challenge any paradigm, yet be open to accepting a different idea if it is better than yours. I hope that you achieve mastery in anything you set out to accomplish and that you see your dreams all the way through. I hope your generation is even more accepting of each other's diverse choices, circumstances, and sizes. I hope that you will never forget what your grandparents, and their parents, gave up so that you and I could have the opportunities that we do. I am so excited and blessed to have you walk across that stage with me soon.

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CHAPTER 1: INTRODUCTION

Problem Statement

In 2003, the World Health Organization declared that almost all countries were experiencing an obesity epidemic (Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006). Since then, public health officials worldwide began to give increasing attention to, and make behavioral recommendations for, reducing obesity (O'Hara & Gregg, 2010). Many authors attribute these behavioral recommendations to the 'dominant obesity discourse' (Alderman, Smith, Fried, & Daynard, 2007; Bacon & Aphramor, 2011; Evans & Rich, 2011; Rail, 2012; Saguy & Gruys, 2010; Shelley, O'Hara, & Gregg, 2010; Tylka et al., 2014). Broadly, Tylka et al. (2014) summarize that this discourse rests on the assumption that weight and disease are related in a linear fashion and emphasizes personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights."

The dominant obesity discourse is not the only discourse around health and bodies. Some health promotion campaigns embrace size diversity, encourage engagement in physical activity for pleasure and overall health benefits, and discourage size discrimination (e.g., ISAA, 2015; NAAFA, 2015). Still, short, uncomplicated, and people-centered explanations regarding health and bodies are prevalent and seem to be better suited for the media (Rail, 2009; Saguy & Almeling, 2008). Researchers in a number of countries have reported on the ways disciplinary practices for protecting individuals from the 'risks' of obesity have been encouraged through schools, the web, television, radio, film, billboards, and pamphlets in doctors' waiting rooms (Wright, 2009).

While the dominant obesity discourse informs a range of public health policies, not all researchers and practitioners agree on its effectiveness or its safety, suggesting that using body

size as an indicator of health can contribute to the stigmatization of 'fat' bodies as well as disordered eating practices (Campos et al., 2006; Gaesser, 2003; Gard, 2004; Oliver, 2006; Rich, Monaghan, & Aphramor, 2011). In his article, *The Tyranny of Health Promotion*, Marshall Becker (1996), one of the co-creators of the Health Belief Model, writes that "all is not well with 'wellness'." While he does not doubt the health promotion movement's good intentions, or potential contributions to improved health, he argues that we have prematurely urged the public to undertake various health behaviors, despite considerable disagreement concerning the validity and interpretation of data underlying these recommendations. This can result in people having their fears raised and feeling compelled to attempt significant behavioral changes, attempts which are often unsuccessful and sometimes harmful (Becker, 1986).

Purpose of Dissertation Study

In light of the potential harms and inaccuracies of the dominant obesity discourse and the reliance on this model in promoting children's health, it is imperative that individuals have a broader understanding of health, healthy bodies, and health practices from childhood. Feminist scholars have presented *theoretical* writings on weight and obesity, but these lead to a number of questions that have rarely been answered empirically (Rail, 2009). For instance, what are children's conceptualizations of health, healthy bodies, and health practices and what factors help shape these conceptualizations? It was relevant to explore if the dominant obesity discourse is one type of 'knowledge' that shapes children's conceptualizations of health, healthy bodies, and health practices. To be clear, this study was not guided by the assumptions that a balanced diet and physical activity are *unhealthy* or that body size bears absolutely no relation to health. Rather, the study aimed to explore if and how the neoliberal rationale underpinning the dominant obesity discourse relates to children's conceptualizations of health, healthy bodies, and health

practices. In addition, health literacy – the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health – was a relatively unexplored but potentially significant factor in the context of children's conceptualizations of health, healthy bodies, and health practices. Guided by a poststructuralist approach, this dissertation project aimed to fill this knowledge gap by utilizing qualitative methodology to conduct in-depth interviews with elementary school aged children to understand their conceptualizations of health, healthy bodies, and health practices. It also explored how the dominant obesity discourse and children's health literacy compared to these conceptualizations. Exploring children's conceptualizations of health, healthy bodies, and health practices – as well how the dominant obesity discourse and health literacy compare to these conceptualizations – may be the first steps towards developing health promotion programs and recommendations which offer a broader perspective on health and well-being and do not focus on weight.

Justification for the Study

Applying a poststructuralist approach

While obesity research and debates have received much scholarly attention, there has been minimal discussion on the material and embodied effects of the dominant obesity discourse (Rail, 2009). A feminist poststructuralist perspective – which posits that a person's identity is constructed through language and cultural practices – allows for an understanding of 'discourses' as historically and culturally situated systems of meaning that shape what can be said and known in a society, thus sustaining relations of power (Rail, 2002; Weedon, 1997; Wright, 2001). Examined through a poststructuralist lens, the dominant obesity discourse is culturally produced and has the potential power to shape the way young people think about their bodies and the

bodies of others (Rail, 2009). Though there is considerable literature on the ways dominant obesity discourse is communicated, beyond quantitative studies of body dissatisfaction and body esteem, there had been far less examination of how the dominant obesity discourse is internalized, negotiated, or transformed by individuals (Wright, O'Flynn, & MacDonald, 2006). In addition, in the limited literature exploring children's conceptualizations of health, only a few researchers specify their epistemological perspective. Of these few, most cite poststructuralism as the framework guiding their study. Therefore, applying poststructuralism in this project provided a novel and relevant lens through which to explore how young people construct their ideas of bodies and health.

Exploring children's conceptualizations of health, healthy bodies, and health practices

Health-related knowledge, attitudes, and behaviors developed during childhood, including those related to food, activity, and weight, are being recognized as deeply rooted and resistant to change later, when children become adults (Driessnack, Chung, Perkhounkova, & Hein, 2014). For instance, research suggests that disordered eating behaviors (e.g., restrictive eating, binge eating) enacted during early adolescence are predictive of their continued use as well as a progression to clinical eating disorders during later adolescence or young adulthood (Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth,, 2011). Therefore, the best time to perform an assessment of and interventions to improve knowledge, attitudes, and behaviors related to food, activity and weight may be during childhood, before problematic health attitudes and behaviors form or take root (Driessnack, Chung, Perkhounkova, & Hein, 2014). In order to encourage children to think about health, healthy bodies, and health practices in a broader, non-weight centered way, researchers must first ask critical questions that have rarely been

empirically explored, such as what are children's conceptualizations of health, healthy bodies, and health practices (Rail, 2009)?

A few researchers have explored some of these questions with children in different settings, including in: Australia (Wright, O'Flynn, & MacDonald, 2006); an inner-city neighborhood in the United States (Atencio, 2010); Canada (Beausoleil & Petherick, in press; Rail, 2009; MacNeil & Rail, 2010); New Zealand (Burrows, Wright, & Jungerson-Smith 2001); and a pilot project this researcher completed in preparation for her dissertation study. Many of these studies were conducted outside of the U.S., did not include younger grade school children, and revealed that in different settings, children conceptualized health in a variety of ways. Therefore, it was inconclusive if: 1.) children in the USA conceptualize health in similar ways as children in other countries; 2.) younger children conceptualize health in the same way that older children do; and 3.) all younger children in the USA conceptualize health in the same way. Exploring American children's understandings of health, bodies, and health practices would be informative towards planning a health promotion program that encourages children to think of health in a way that is not centered on weight.

Exploring how the dominant obesity discourse compares to children's conceptualizations of health, healthy bodies, and health practices

The dominant obesity discourse has led to concern regarding "overweight" and "obesity" which is reflected in a diverse range of policy measures aimed at helping individuals reduce their BMI (Bacon & Aphramor, 2011). Though there is some variation in the way the claims within the dominant obesity discourse are described, the discourse rests on the assumption that weight and disease are related in a linear fashion and emphasizes personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights" (Tylka et al., 2014).

Though recommendations based on this discourse are disseminated widely, they are not uncontested. For instance, though obesity is associated with increased risk for diseases, causation is less well established (Bacon & Aphramor, 2011; Tylka et al., 2014). Studies that argue a direct effect of overweight and obesity on morbidity and mortality do not always control for personal, behavioral, and social factors that help explain the links between BMI and health (Bacon & Aphramor, 2011; Rail, 2012; Tylka et al., 2014). Moreover, though short term weight-loss interventions do result in improved health measures, it cannot be concluded that these improvements are indeed due to the weight-loss itself or the behavioral modification that comes with it (Bacon & Aphramor, 2011). In fact, there is evidence that weight-loss efforts can be damaging to health (e.g., Campos et al., 2006; Clift & Wright, 2010; Daníelsdóttir, Burgard, & Oliver-Pyatt, 2009; Strohacker & McFarlin, 2010) and that many health indicators thought to be weight-related can be improved through participating in healthier behaviors, such as increasing physical activity or improving diet, regardless of whether weight is lost (Bacon, Stern, Van Loan, & Keim, 2005; Bacon & Aphramor, 2011; Gaesser, 2003; Gaesser, 2007). Finally, though behavioral modifications, such as changes in diet, do lead to short-term weight loss, weight-loss through modified behavior is not usually maintained (Mann et al., 2007). Researchers argue that environmental and genetic factors have a strong effect on BMI and often 'outweigh' voluntary lifestyle choices such as diet and physical activity (Schwartz, 2012; Silventoinen, Rokholm, Kaprio, & Sørensen, 2010; Sumithran et al., 2011). While there has been considerable recent theorizing of the dominant obesity discourse and its potential harms and inaccuracies, there has been less attention to if and how it has an impact on populations and specific sections of populations (Wright, 2009). Therefore, in-line with the post-structural approach, it was worth

exploring how the dominant obesity discourse compares to children's conceptualizations of health, healthy bodies, and health practices.

Exploring how children's functional, communicative, and critical health literacy compare to their conceptualizations of health, healthy bodies, and health practices

Health literacy is defined as "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health" (WHO, 2015). Nutbeam (2000) argues that there are three aspects of health literacy: (1) Functional health literacy refers to the basic skills in reading and writing that are necessary to function effectively in everyday situations; (2) Communicative (or interactive) health literacy refers to more advanced cognitive and literacy skills which, together with social skills, can be used to actively participate in everyday situations, extract information, derive meaning from different forms of communication, and apply this to changing circumstances; and (3) Critical health literacy refers to more advanced cognitive skills which, together with social skills, can be applied to critically analyze information and use this to exert greater control over life events and situations (Nutbeam, 2000).

Though researchers are beginning to explore health literacy in adolescents, little health literacy research, let alone health literacy research in the context of critical obesity scholarship, has been conducted directly with children. Childhood may be the most appropriate timing for assessment of and efforts to improve health literacy, before problematic health attitudes and behaviors, including those related to weight, take root (Driessnack, Chung, Perkhounkova, & Hein, 2014). A review of existing literature suggests that child literacy is associated with important health outcomes (DeWalt & Hink, 2009). Moreover, research suggests that increased health literacy could be individually and socially liberating (Borzekowski, 2009; Friere, 1970; Nutbeam, 2000).

As mentioned previously, examined through a poststructuralist lens, the dominant discourse around body weight is culturally produced and has the power to shape the way young people think about their bodies and the bodies of others (Rail, 2009). Due to the prevalence of childhood obesity messages in the media (Campos, 2004; Oliver, 2005) and schools (Flodmark, Lissau, Moreno, Pietrobelli, & Widalm, 2004; Evans & Rich, 2011), it may be especially relevant for children to possess adequate health literacy. Though potentially relevant in influencing how young people conceptualize health, healthy bodies, and health practices, health literacy is a relatively unexplored factor in this context. Therefore, using a poststructural lens, this dissertation study considered a broader scope of health literacy constructs and examined how children's functional, communicative, and critical health literacy compare to their conceptualizations of health, healthy bodies, and health practices. The findings from this research can be applied towards the development of health promotion programs that address specific aspects of health literacy which are relevant to children's conceptualizations of health, healthy bodies, and health practices.

Involving children as research participants

Historically, children were not involved in research (Kulynych, 2001), partially based on the assumption that adults believe they 'know what childhood is all about' as they were also children themselves at one time (Mouritsen, 2002). Children were also thought of as 'incomplete adults' and, under this assumption, programs for adults have been seen as easily 'adapted' for children, simply by changing language and images, but not the underlying principles (Scott, 2000). However, more recently, scholarship has effectively challenged these ideas. The Children's Rights agenda has shaped child research by advocating that children and young people have a right to be consulted, heard and to appropriately influence the services and

facilities that are provided for them (Woodhouse, 2004). Many contemporary studies have established children's competence in being able to express their views and opinions, and their ability to report on important issues based on their lived experiences of childhood (Harcourt, 2008; Sargeant, 2007; 2010). Studies have also established that it is likely that the way children experience their childhood, and how adults perceive them to experience it, may not always be in agreement (Harcourt & Sargeant, 2011).

Implications of the Study

In contrast to promoting the dominant obesity discourse, researchers, policy makers, and health promoters should think critically about how best to design environments – at home, in schools, and within communities- in which children can and are encouraged to think about health, healthy bodies, and health practices in a broader, non-weight centered way. The findings from this and similar studies can help inform the development of these programs or policies.

Overview of Study Methods

Qualitative methodology is particularly useful when attempting to understand a phenomenon that has multiple sources of influence and complex dynamics, such as children's understandings of health, healthy bodies, and health practices. Therefore, the dissertation study employed qualitative methodology. The study sample consisted of 29 students, ages eight to 11, at a public elementary school located in the mid-Atlantic region. Specifically, data was collected in two phases. In the first phase, one-on-one interviews were conducted and a drawing activity was facilitated with each participant to collect information regarding his/her conceptualizations of health, healthy bodies, and health practices. In the second phase, one-on-one interviews were conducted to collect information regarding children's functional, communicative, and critical health literacy.

Research Questions and Study Aims

Main research question

What are children's conceptualizations of health, healthy bodies, and health practices?

Exploratory sub-questions

1. How does the dominant obesity discourse compare to children's conceptualizations of health, healthy bodies, and health practices?
2. How do children's functional, communicative, and critical health literacy compare to their conceptualizations of health, healthy bodies, and health practices?

The main research question and first exploratory sub-question are the focus of Study 1 (Chapter 3). The second exploratory sub-question is addressed in Study 2 (Chapter 4). A central aim of this research was to generate findings that can be applied towards health promotion efforts and recommendations that are specifically tailored towards young children.

Definition of Terms:

Dominant Obesity Discourse: Rests on the assumption that weight and disease are related in a linear fashion and emphasizes personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights" (Tylka et al., 2014).

Body Mass Index (BMI): BMI is a number calculated from a person's weight and height (cdc.gov/healthyweight/assessing/bmi/). BMI is calculated by dividing one's mass (in kg) by one's height^2 (in meters).

Obesity: The Centers for Disease Control and Prevention define obesity as a body mass index (BMI) at or above the 95th percentile for children of the same age and sex (cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi). CDC states that

BMI does not measure body fat directly, but it is a reasonable indicator of body fatness for most children and teens.

Post-Structuralism: A poststructuralist perspective (Rail, 2002; Weedon, 1997; Wright, 2001) allows for an understanding of subjectivity, or what influences and informs people's judgments about truth or reality, as decentered, or not dependent entirely on the individual. From this perspective, reality is made, and not found (Rail, 2009). This means that young people construct reality through language and cultural practices. Subjectivity is made possible through 'discourses' (Butler, 1997). Discourses refer to regimes of truth that specify what can be said or done within the context of particular times and places. These discourses also sustain specific relations of power (Rail & Harvey, 1995). This raises questions about how power is used in the construction of knowledge about weight and health, and what kind of knowledge is legitimized (Rail, 2009).

Health Literacy: The CDC (2015) defines health literacy as "the degree to which persons have the capacity to obtain, process, and understand the basic health information and services needed to make appropriate health-related decisions." However, the definition of health literacy by the WHO (2015) is broader: "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health."

Basic/functional literacy: The basic skills in reading and writing to be able to function effectively in everyday situations (Nutbeam, 2000).

Communicative/interactive literacy: The more advanced cognitive and literacy skills which, together with social skills, can be used to actively participate in everyday activities, to extract

information and derive meaning from different forms of communication, and to apply new information to changing circumstances (Nutbeam, 2000).

Critical literacy: The more advanced cognitive skills which, taken together with social skills, can be applied to critically analyze information, and to use this information to exert greater control over life events and situations (Nutbeam, 2000).

CHAPTER 2: LITERATURE REVIEW

The Dominant Obesity Discourse

Background

In 2003, the World Health Organization declared that almost all countries were experiencing an obesity epidemic (Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006). In the last decade, researchers have documented an explosion of scientific and media reports on obesity around the world (e.g., Campos, 2004; Gard & Wright, 2005; Oliver, 2005). Since then, public health officials worldwide began to give increasing attention to, and make behavioral recommendations for, reducing obesity (O'Hara & Gregg, 2010). Many authors attribute these behavioral recommendations to the 'dominant obesity discourse' (Alderman, Smith, Fried, & Daynard, 2007; Bacon & Aphramor, 2011; Evans & Rich, 2011; Rail, 2012; Saguy & Gruys, 2010; Shelley, O'Hara, & Gregg, 2010; Tylka et al., 2014).

Though authors are fairly consistent in summarizing the assumptions within the dominant obesity discourse, there is slight variety in the way they are presented. For instance, Bacon and Aphramor (2011) list the assumptions as follows: 1.) adiposity poses significant mortality and morbidity risk; 2.) weight loss will prolong life; 3.) anyone who is determined can lose weight and keep it off through appropriate diet and exercise; 4.) the pursuit of weight loss is a practical and positive goal; 5.) the only way for overweight and obese people to improve health is to lose weight; and 6.) obesity related costs place a large burden on the economy, and this can be corrected by focused attention to obesity treatment and prevention. Elsewhere, Rail (2012) posits that the dominant obesity discourse can be summed up into the following series of assumptions: 1.) obesity is a disease; 2.) people choose obesity; 3.) obesity causes health problems; 4.) those "at risk" need monitoring; 5.) especially in a time of epidemic; 6.) but experts know best about

obesity; 7.) so let's follow their weight loss prescription; and 8.) target women and unhealthy others (p. 239). O'Reilly and Sixsmith (2012) suggest the dominant obesity discourse can be summarized into three assumptions: 1.) weight is associated with energy intake or energy expenditure; 2.) fatness is associated with excess disease and early death; and 3.) weight loss will invariably improve health. Broadly, Tylka et al. (2014) summarize that the discourse rests on the assumption that weight and disease are related in a linear fashion and emphasizes personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights."

Disciplinary Practices

The dominant obesity discourse has generated new forms of disciplinary practices to reduce obesity and to protect everyone from the 'risks' of obesity. Researchers in a number of countries have reported on the way these practices have been encouraged through popular media (Burrows & Wright, 2004), new technologies (Miah & Rich, 2006), health organizations (Groskopf, 2005), and schools (Gallagher & Fusco, 2006). These practices are referred to as "biopedagogies." The notion of biopedagogies is drawn from Foucault's (1984) concept of 'biopower,' or the governance and regulation of individuals and populations through practices associated with the body. Biopedagogies not only place individuals under constant surveillance, but also encourage them to monitor themselves, often through increasing their knowledge around 'obesity' related risks, and instructing them on how to eat healthy and stay active. The word biopedagogies is used to bring together the idea of biopower and pedagogy in ways that help us understand the body as a political space. This accentuates the meanings associated with the body and influences how individuals act on themselves and others. However, how this happens is not always predictable. How individuals take up ideas around fatness and obesity will be mediated by their personal experiences, their own embodiment, their interaction with other ways of

knowing, other truths and operations of power in relation to the knowledge produced around health, obesity, and the body (Wright, 2009).

Embedded Power

While the dominant obesity discourse informs a range of public health policies, not all researchers and practitioners agree on its effectiveness or its safety, suggesting that using body size as an indicator for health can contribute to the stigmatization of 'fat' bodies as well as disordered eating practices (Campos et al., 2006; Gaesser, 2003; Gard, 2004; Oliver, 2006; Rich, Monaghan, & Aphramor, 2011). However, these critical debates have mainly taken place away from the public; meanwhile, media stories about overweight and obesity have continued to flourish (Rail, 2009; Saguy & Almeling, 2008). Despite an increase of papers and books in the social sciences, cultural studies, and even bio-physical sciences critiquing the idea of an 'obesity epidemic' and its effects, the divide between the bio-physical and medical sciences vs. socio-culturally informed research is clearly evident around this issue (Wright, 2009). This is a demonstration of the power of science to establish the normative position.

Potential Harms and Inaccuracies of the Dominant Obesity Discourse

The model of health based on the dominant obesity discourse has led to concern regarding overweight and obesity which is reflected in a diverse range of policy measures aimed at helping individuals reduce their BMI (Bacon & Aphramor, 2011). Though recommendations based on the dominant obesity discourse are disseminated widely, they are not uncontested. Some researchers argue that public health efforts to reduce obesity, as well as the assumptions within the dominant obesity discourse, may be inaccurate and potentially harmful (Campos et al., 2006; Gaesser, 2003; Gard, 2004; Oliver, 2006; Rich, Monaghan, & Aphramor, 2011).

For instance, studies linking overweight and obesity to morbidity and mortality have become more prominent in the last 20 years (Gaesser, 2003; Gard & Wright, 2005; Lenz, Richter, & Mühlhauser, 2009). While it is established that obesity is associated with increased risk for diseases, causation is not as well established (Bacon & Aphramor, 2011; Tylka et al., 2014). Researchers argue that instead of a linear one, there may actually be a more complex U-shape relationship between BMI and the negative health factors which are commonly associated with elevated BMI, such as osteoarthritis, sleep apnea, hypertension and coronary heart disease (Tylka et al., 2014). Studies reveal that though there are negative health impacts of clinical anorexia and morbid obesity, there is little impact of overweight and obesity on morbidity (Flegal, 2010; Lenz, Richter & Mühlhauser, 2009; Lloyd-Jones et al., 2009) and mortality (Flegal, & Graubard, 2009; Flegal, Graubard, Williamson, & Gail, 2005). This conflicting evidence may be in part due to the fact that the studies that point to a direct effect of overweight and obesity on morbidity and mortality do not always control for factors such as fitness, activity, nutrient intake, insulin resistance, weight cycling (repeated cycles of weight loss and regain), or socioeconomic status, even though these factors play a significant role in determining health risk and often partially or fully explain the links between BMI and health (Bacon & Aphramor, 2011; Rail, 2012; Tylka et al., 2014).

Moreover, recommendations that overweight and obese individuals need to lose weight to improve their health are evident through health promotion guidelines, including those from WebMD (webmd.com), Centers for Disease Control and Prevention (CDC) (cdc.gov), and National Institutes of Health (NIH) (nih.gov). Short term weight loss intervention studies do result in improved health measures, such as blood pressure and cholesterol levels; however, because these interventions include behavior change, it cannot be concluded that the

improvements in health are attributed to the weight loss itself (Bacon & Aphramor, 2011). Researchers challenge the validity and safety of the argument that overweight and obese individuals need to lose weight to improve their health. First, there is increasing concern that practices related to the dominant obesity discourse can be damaging to health, leading to negative health consequences resulting from weight-cycling (Campos, 2004; Campos et al., 2006; Montani, Viecelli, Prevot, & Dulloo, 2006; Stice, Cemeron, Killen, Hayward, & Taylor, 1999; Strohacker & McFarlin, 2010); eating disorders (Bacon & Aphramor, 2011; Clift & Wright, 2010; Evans, 2006; Rich & Evans, 2005); and weight stigmatization and discrimination (Bacon & Aphramor, 2011; Daníelsdóttir, Burgard, & Oliver-Pyatt, 2009; Neumark-Sztainer, 2009). Second, many health indicators such as blood pressure, blood lipids, cholesterol, and triglyceride levels can be improved through participating in healthier behaviors, such as increasing physical activity or improving diet, regardless of whether weight is lost (Bacon, Stern, Van Loan, & Keim, 2005; Bacon & Aphramor, 2011; Gaesser, 2003; Gaesser, 2007). On the other hand, efforts to turn obese and overweight individuals into normal weight individuals *without* behavioral modification has not been demonstrated to improve their health (Murray, 2007, 2008; Oliver, 2006). Liposuction studies that control for behavior change illustrate this point (e.g., Klein et al., 2004).

Finally, when it comes to personal health, epidemiologists, health agencies, and marketers heavily emphasize the role of individual risk factors rather than population risk factors (Herrick, 2007; Rail, 2012; Saguy & Gruys, 2010). Recently, more public health professionals *are* recognizing that factors that contribute to obesity also occur at an environmental and societal level, which has led to various public health efforts to improve access to healthier foods and opportunities for physical activity (e.g., Alderman, Smith, Fried, & Daynard, 2007; De Silva et

al., 2015; Thomas et al., 2014). Though these efforts are commendable and well intentioned, what they often have in common is the underlying assumption that participating in these behaviors is the way to achieve weight loss. However, despite public health attention, a burgeoning weight loss industry (estimated at $58.6 billion annually in the United States), high levels of body dissatisfaction, and repeated attempts to lose weight, reviews of the literature reveal that though diets *do* lead to short-term weight loss, this weight-loss is not usually maintained (Mann et al., 2007). Specifically, the more time that elapses between the end of a diet and the follow-up, the more weight is regained. Even in the studies with the longest follow-up times (four or five years post-diet), the weight regain trajectories do not typically appear to level off. Researchers suggest that one reason for this may be that genetic factors have a strong effect on BMI and often 'outweigh' voluntary lifestyle choices such as diet and physical activity (Schwartz, 2012; Silventoinen, Rokholm, Kaprio, & Sørensen, 2010; Sumithran et al., 2011).

Applying the Dominant Obesity Discourse towards promoting Children's Health

Concerns about children's health, in particular, have increased in response to high estimates and predictions of childhood obesity in the nation (Beausoleil & Ward, 2010; Burrows, 2010; Evans, De Pian, Rich, & Davies, 2011; MacNeill & Rail, 2010; McPhail, Chapman, & Beagan, 2011; Norman, 2011; Petherick, 2011; Pringle & Pringle, 2012; Rail, Holmes, & Murray, 2010; Welch & Wright, 2011). This has led to a number of nationwide and community level efforts to address obesity (Ogden, Carrol, Kit, & Flegal, 2014), including efforts by the USDA (usda.gov); the CDC (cdc.gov/obesity/strategies/); Congress (Alderman, Smith, Fried, & Daynard, 2007); schools (Flodmark et al., 2004; Evans & Rich, 2011); and even the White House (letsmove.gov). For instance, in February of 2010, First Lady Michelle Obama launched

Let's Move!, a public health initiative *dedicated to solving the problem of childhood obesity within a generation* (http://www.letsmove.gov/about).

The efforts driving campaigns such as Mrs. Obama's to fight childhood obesity are well-intentioned. The campaign urges parents, teachers, chefs, elected officials, principals, church leaders, and community organizers to take action to ensure that children participate in regular physical activity and consume a diet that includes fruits and vegetables, which is commendable. However, campaigns such as Mrs. Obama's still follow the potentially problematic and inaccurate assumptions of dominant obesity discourse. For instance, the Let's Move! Campaign website reinforces the idea that childhood overweight and obesity will result in health problems (e.g., "If we don't solve (childhood obesity), one third of all children born in 2000 or later will suffer from diabetes at some point in their lives. Many others will face chronic obesity-related health problems like heart disease, high blood pressure, cancer, and asthma") (http://www.letsmove.gov/learn-facts/epidemic-childhood-obesity). However, research indicates that being overweight and obese as children does not necessarily lead to poor health outcomes as adults (Robison, 2007; Serdula et al., 1993; Whitlock, Williams, Gold, Smoth, & Shipman, 2005; Wright, Parker, Lamont, & Craft, 2001). The Let's Move! campaign also communicates the need for overweight and obese children to lose weight to improve their health by encouraging parents, chefs, teachers, kids, elected officials, and health care providers to "take action" against obesity so that "children born today will grow up healthier and able to pursue their dreams" (letsmove.gov/learn-facts/epidemic-childhood-obesity). However, evidence indicates that children's health promotion programs that promote the dominant obesity discourse could lead to negative outcomes such as increased body dissatisfaction, eating disorders, and size-based bullying (Robison, 2007; Shelley, O'Hara, & Gregg, 2010). Finally, the idea that children will

lose weight if they improve their diet and physical activity is manifested in state and school policies which implement or reward behavior modification for the purposes of weight-loss (e.g., Borja, 2006; Alderman, Smith, & Daynard, 2007). However, food and activity behaviors are not always the primary indicators of weight (Silventoinen et al., 2010; Sumithran et al., 2011) and modification of these behaviors does not always lead to sustained weight loss (Brownell, 2010; Mann et al., 2007).

Poststructuralist approach

The poststructuralist approach emphasizes the notion that reality is not discovered, but rather constructed through the already gendered, heterosexualized, and racialized discourses to which one has access (Rail, 2002; Weedon, 1997; Wright, 2001). Poststructuralist researchers speak to the importance of contesting current health promotion programs and writings, raising awareness about the problematic effects of the dominant obesity discourse, and of promoting alternative discourses; unless we do this, health will remain intangible (Rail, 2009). Michel Foucault's conceptualization of discourses as historically and culturally situated systems of meaning that shape what can be 'said' and known' in a society – as ways of constituting knowledge – are thus central to a poststructuralist approach (Weedon, 1997). In this view, the 'body' would not have meaning outside of its discursive articulation. However, the ways in which discourses constitute the bodies of individuals are always a part of a wider network of power relations, often with institutional bases. Examined through a poststructuralist lens, the dominant discourse around body weight is culturally produced and has the potential power to shape the way young people think about their bodies and the bodies of others (Rail, 2009).

Children's Conceptualizations of Health, Healthy Bodies, and Health Practices

Due to the potentially problematic assertions within the dominant obesity discourse, it is important that children think about bodies, health, and health practices in a broader, non-weight centered way. In order to do this, Rail (2009) argues that researchers must first ask critical questions that have rarely been empirically explored, including how individuals internalize ideas regarding health and healthy bodies. Though limited, a few studies have attempted to explore similar questions. A summary of these studies is provided next, focusing primarily on the methods and findings which specifically relate to children's conceptualizations of health, healthy bodies, and health practices.

Previous Research

Wright, O'Flynn, & MacDonald (2006) implemented the *Life Activity Project* to understand the diverse and complex ways young people in Australia take up, negotiate, and/or resist ideas regarding health and fitness that are based in the dominant obesity discourse. Though this study was not specifically guided by a theoretical framework, the authors drew on Foucault's idea of self-construction (Foucault, 1996). In this context, self-construction refers to the idea that in the face of public health and physical education literature that continues to (often uncritically) reproduce the dominant obesity discourse, there is a need to explore how the discourse is internalized by young people. In doing so, Foucault (1996) argues that we must recognize that young people are not passive consumers of particular regimes of truth (mechanisms which produce discourses, such as the dominant obesity discourse, which function as true in particular times and places), but, because of their own biographies and current circumstances, internalize these ideas in different and complex ways.

The researchers conducted a series of four themed interviews with 54 young people (15 and 17 years of age) over the first two years of the study and conducted follow up interviews

during the third year. Two of these interviews specifically asked participants about their understandings of health and perceptions of bodies. Discussions during these interviews included participants talking about: what 'healthy' meant to them; how they would rate their own health; what they would need to do to become healthier; and if they saw their parents as healthy, and why.

The researchers found that, in general, when asked to talk about health, both young men and women's responses demonstrated notions of health as a personal responsibility: to these young people, health was tied almost exclusively to the bodily practices of eating the right foods and engaging in sufficient exercise. Eating the right food was usually defined in terms of eating 'lots of vegetables and fruit' and was eaten for nutritional reasons. This was defined in opposition to 'junk'/'bad' food, which, to the participants, was food high in sugar and/or fat and/or fast food which was associated with pleasure and guilt. However, this study also revealed that young people negotiate and internalize the dominant obesity discourse in different ways. According to the researchers, some participants reported that they performed behaviors such as monitoring how much they ate and exercised because these are normal and desirable practices. However, other participants reported that though they participated in certain behaviors that would make them thinner, for example, they knew this desire came from the media and felt guilty when they succumbed to media messages.

Atencio (2010) drew on the methodology from the *Life Activity Project* in his study aimed at exploring the place and meaning of physical activity in the lives of young people in an inner-city neighborhood in the United States. In this project, he interviewed 17 young people between the ages of 13 to 18 from a low-income, urban neighborhood. Each participant was asked questions about health, sport, and physical activity during five to seven interviews. One of

the thematic interviews investigated young people's meanings of health. This involved asking participants what it meant to be healthy; what was required to live a healthy life; whether they found healthiness to be a desirable state; what they found to be unhealthy; what unhealthy people looked like; and what their various sources of health information were. Participants were also asked to rate themselves on a scale of 1 to 10 (1 being unhealthiest) and discuss why they this might be. The young people were shown images of athletes and other individuals participating in physical activity so that they could discuss their constructions of body image and eating and exercise patterns.

Atencio found that when initially asked to discuss what it meant to be healthy, the participants consistently described healthiness in terms of eating and exercising properly. This notion became more evident when questions around health were framed in the negative (e.g., what does it mean to be unhealthy?). Participants linked unhealthiness and being overweight with eating 'bad' foods and being lazy. However, similar to what Wright, O'Flynn, and MacDonald (2006) found, when it came to their own bodies, young people navigated and internalized the dominant obesity discourse in a variety of ways. For instance, the young men were primarily concerned with engaging in highly disciplinary eating and exercise practices in order to achieve success in sports. In comparison, some of the young women's comments indicated that they actively contested dieting and exercise practices based on the dominant obesity discourse. In particular, young women from African American and black Haitian backgrounds discussed eating to achieve bodily pleasure by consuming foods that health advocates would consider "unhealthy." For instance, one young woman commented how she did not feel compelled to adopt dieting practices and instead, described how she wanted to eat 'everything' in order to feel 'lazy' and 'full.'

In yet another study modeled off of the *Life Activity Project*, MacNeill and Rail (2010) collected and analyzed Canadian youths' (42 females and 22 males between the ages of 13 to 15) drawings of, and discussion about, their understanding of health and fitness. In this study, the researchers adopted a poststructuralist perspective (Rail, 2002; Weedon, 1997; Wright, 2001). Guided by post-structuralism, MacNeill and Rail's (2010) study aimed to: provide a 'snapshot' of the meanings constructed about health and fitness; to uncover the educational and cultural sources from which youth derive these ideas; to explore claims youth make about how they deploy these notions in their everyday lives; to question relationships between their constructions and prevailing discourses (e.g., the dominant obesity discourse); and to observe how youth are positioned and/or participate in resisting these discourses. The project consisted of a *Draw and Script* exercise and a focus group discussion. In the *Draw and Script* exercise, participants were given instructions to complete a few activities on a piece of paper, including drawing an image of a healthy youth and defining and describing what health meant to them. The focus groups included a discussion based on the *Draw and Script* exercise (e.g., "What does health mean to you?"; Why do you care about health?"; and "Why is it important to you?").

The researchers found that children's constructions of health were fairly diverse and at times, contradictory. There were instances in which youth both accepted and resisted the dominant obesity discourse. The drawings and discussion revealed that the participants were well aware of the dominant messages regarding health and some children could repeat the arguments within this model (e.g., " being healthy is looking slim"). When asked to draw a healthy youth, none of the participants drew an 'ample' or 'fat' figure (MacNeill & Rail, 2010). Other definitions of health were not necessarily in accordance with the dominant obesity discourse, but they were still limited to the physical body (e.g., eating nutritiously, being physically active,

etc.). Still other definitions of health were much more holistic (e.g., being happy, having a healthy environment, having a healthy family and having good friends).

In addition to the *Life Activity Project* and the studies modeled off of it, there have been a few other studies in which researchers aimed to explore children's constructions of health. For instance, Burrows, Wright, and Jungerson-Smith (2001) explored New Zealand students' (8-9 and 12-13 years of age) understandings of health, fitness, and physical activity. To do this, they evaluated children's responses to stimuli tasks in the Health and Physical Education component of the *New Zealand National Education Monitoring Project* (NEMP). Of these, two tasks asked specifically about children's conceptualizations of health: 1.) *Being Healthy:* a one-on-one task in which children were asked to provide their definition of being healthy; and 2.) *Healthy Person:* a team activity where four children worked together to identify the key components of a healthy person.

The results indicated that according to most of the students, being healthy meant eating the right food, drinking lots of water, being active, and keeping oneself clean. In other words, health was mainly a physical notion. One of the major differences between the younger (8-9 year old) and older (12-13 year old) participants' responses had to do with the apparent sources of their health information. The older students had additional exposure to the *Life Education Program*, a new Health and Physical Education syllabus which promoted a broader notion of health which encompasses emotional and social dimensions. The *Life Education* program plays a large role in the provision of health education in primary schools in New Zealand and Australia. The emphasis by the *Life Education Program* on self-esteem and emotional well-being as fundamental to making healthy choices came through in many of the older students' responses.

On the other hand, the younger students' responses provided insights into family preoccupations with weighing one-self and weight-related products advertised on television.

Rail (2009) used a poststructuralist theoretical perspective to explore the effects of the dominant obesity discourse on young people (13-15 years old) in Canada . Rail's justification for her study was that while obesity research and debates have received much scholarly attention, there has been minimal discussion on the effects of the dominant obesity discourse on individuals. To explore these effects, Rail conducted one-on-one interviews and small group discussions with participants.

Rail found that many of the participants emphasized some of the themes in the dominant obesity discourse (e.g., avoiding obesity (i.e., being not too fat) is simply a question of caloric intake (eating well) and output (being physically active)). She also found that health was mostly constructed in bodily terms and was either associated with things that are done to the body (e.g., being physically active, eating well, avoiding bad habits) or that are associated with the body (e.g., being neither too fat nor too skinny, having physical qualities, not being sick). Much less frequently, the participants described health in non-physical terms such as "feeling good" and "having personal qualities." Finally, participants emphasized individual responsibility for health: health is something that they <u>are</u> (e.g., thin, confident, positive, fit, not sick), that they <u>do</u> (e.g., physical activity, eating well, avoiding bad habits) or that they <u>feel</u> (e.g., feeling good).

Beausoleil and Petherick (in press) used a poststructuralist approach to examine how Canadian children understand healthy practices and messages about the ideal "healthy" body. To do so, they conducted focus groups with 123 children in 2nd and 4th grades. The focus groups were followed by a drawing activity in which 2nd grade participants drew images of themselves doing something they like and feel special about and 4th grade students drew images of

themselves trying a new activity with a friend.

A thematic and performance analysis of talk, drawings, and talk about the drawings revealed the complex and nuanced ways in which children internalize and experience health. The researchers found that through their talk, children reproduced the dominant obesity discourse. For instance, children defined health mostly in terms of healthy eating and physical activity and having certain physical characteristics (e.g., health is about eating fruits and vegetables and doing exercise; the healthy body is slim, etc.). However, children's drawings, and the talk specifically about the drawings, also illustrated how, to them, there is a disjuncture between what constitutes "real" physical activity (for health) and play. For these children, physical activity consisted of structured and organized forms of sports and activity, not something done spontaneously with friends. Children did not consider the pleasure of spontaneous play and games as a healthy pursuit. Similarly, pleasure in food was also constructed as unhealthy when children's favorite foods were not fruits and vegetables or other foods acceptable according to the Canada Food guide. For instance, one 2nd grade student drew a picture that reflected both his love for marshmallows and his pride in being a good hockey player. This same child said he was not healthy and would not be able to describe what a healthy person looks like. Taken together, the talk and drawings provided a more complex picture of children's experiences than their talk or drawings alone would have provided.

Implementation of a Pilot Project to Inform Dissertation Research

Aims and Methods

To prepare for the dissertation project, a pilot study was conducted in 2011 with six kindergarten (ages 5-6) and three 3rd grade (ages 12-13) students from two different schools the mid-Atlantic region. The pilot project addressed the following questions: 1.) What are children's

understandings of health, healthy bodies, and health practices?; 2.) What are the sources of these understandings?; 3.) How do children integrate health practices in their own lives?; and 4.) What are children's understandings of obesity? To address these questions, one-on-one semi-structured interviews were conducted, each lasting 10-25 minutes. The interviews were guided by a script adapted from one used by Rail and Dumas (2008) in a project titled "Young Women's Discursive Construction of the Body and Health in the Context of Obesity Discourse and Biopedagogies" conducted with young adult women (between the ages of 18 and 25). Though the sample in Rail's project included individuals older than the population of interest in the dissertation study, this interview guide provided a template for the interview questions in the pilot study. In the original script, Rail specifically elicited: participants' constructions of health; sources of the constructions of health; integration of health practices in everyday life; "culture" and constructions of health; constructions of obesity; sources of constructions of obesity; "culture" and constructions of obesity; and body, obesity, and disciplining practices.

Results

Though few in number, participants' responses provided valuable insight into the way young children think about health and bodies and the ways in which this varies by age. With regards to the first research question concerning children's understandings of health, healthy bodies, and health practices, the findings suggest that when asked to discuss "health" or "healthy," the older (third grade) children associated health with particular physical abilities and body size (e.g., "being healthy means when you run you're supposed to have accuracy and stamina...you're fit...you're thin") whereas the younger children gave more 'holistic' answers (e.g., "being healthy means you're feeling good and it means you're doing good"). Children were also shown the Figure Rating Scale, developed by Stunkard et al. (1983), which includes 10 male

and 10 female silhouettes (ordered from #1-9 according to body size, with #1 being the smallest). When asked to point to the 'healthy' figures from this picture, the younger children's answers were more varied (chose figures #1 through #9) while older children tended to pick from the middle of the size spectrum (chose figures #2 through #4). However, when asked to justify why they thought the particular silhouette they pointed to was healthy, most children provided answers such as: "because she's perfect;" "because he exercised every day for at least 60 minutes;" "they eat lots of fruits and vegetables;" "they worked, slept, and ate good foods;" and "they exercise." Almost all the children alluded to the idea that the figures they pointed to were healthy because they were the "right" size and engaged in "healthy" behaviors. There was one kindergarten child, however, who said that the figure she pointed to was healthy because "it has a smile a little bit and it looks like he has his eyes in a happy way" (the figures did not have faces).

With regards to the second research question concerning the sources of children's understandings regarding health, healthy bodies, and health practices, the older children said they received messages regarding the associations between health, behavior, and body size from their parents, teachers, and the media (e.g. one child said she learned from the TV that "people start to lose weight because they exercise about 60 minutes long" and another said her parents told her that she should "only eat portions of food...you only get (fast food) once a week"). On the other hand, the younger children said they learned about health in a broader, non-weight-centered way from their teachers and parents. For instance, one child said she learned from school that "if you choke somebody, they might not be able to breathe." Another child said she learned from her parents that "you have to eat a lot and grow." A third child said she learned from her doctor that "if I don't go to the doctor's office, then I am not going to be healthy." The younger children said they did not learn about health from the media.

With regards to the third research question concerning how children integrate health practices into their own lives, the older children seemed to integrate more weight related practices. For instance, one child said she tries to "get a lower weight but if I can't do that I want to try to maintain the same weight as I have so when I keep growing I can have the right weight and like, not too heavy, not too skinny, a perfect weight." The younger children said they integrated more general health practices. For instance, one young boy said "I care about (my body) being healthy and strong and drink medicine, drink milk, and drink water."
Finally, with regards to the fourth research question concerning children's constructions of obesity, the researcher found that when asked if they knew what "obesity" was, all of the children said they did not and could not define it.

Based on the literature reviewed, there is a need to explore the ways in which young, American children conceptualize health, healthy bodies, and health practices. Though there have been a few studies which have explored this or similar topics, many of these studies took place outside of the U.S. and even less included younger grade school children in their study sample. Eliciting American children's responses to questions regarding their understandings of health, bodies, and health practices can inform efforts aimed at promoting health in a way that is not centered on weight.

Health Literacy

Health Literacy Model

There are a variety of definitions of health literacy and efforts to operationalize this construct vary in scope, method and quality (Sørensen et al., 2012). One of the most common definitions of health literacy is "the degree to which persons have the capacity to obtain, process, and understand the basic health information and services needed to make appropriate health-

related decisions" (CDC, 2015). Peerson and Saunders (2009) argue, however, that there is a split in relation to the settings for those 'health decisions'. Many studies that claim to discuss health literacy actually focus on the limited and easily measurable concept of "medical literacy" which refers to the knowledge, skills, and abilities that pertain to interactions with the *health care system* (e.g., the ability to read, understand and act on instructions for taking a cholesterol-lowering drug). In contrast, broader notions of "health literacy" include the capacity to understand and act on messages that are central to making critical judgments and decisions not only in healthcare-related settings, but also *about* health (e.g., the ability to access information about cholesterol, to understand it, and to apply it to one's own life) (Peerson & Saunders, 2009).

One reason for why models of health literacy that have historically been presented in the literature are not sufficiently comprehensive to line up with the evolving health literacy definitions is that very few models have integrated the components included in "medical" and "health" literacy models (Sørensen et al., 2012). However, Nutbeam (2000) presents a model that bridges the difference between both views by extending the concept of health literacy to include dimensions which go beyond individual competencies in the medical context. Specifically, Nutbeam distinguishes between three aspects of health literacy: *functional literacy*, or the basic skills in reading and writing needed to function effectively in everyday situations; *communicative literacy*, or advanced skills that allow a person to extract information, derive meaning from different forms of communication, and apply new information to changing circumstances; and *critical literacy*, or the more advanced skills for critically analyzing information and using information to exert greater control over life events and situations (Nutbeam, 2000).

The Potential Relationship between Functional, Communicative, and Critical Health Literacy and Children's Conceptualizations of Health, Healthy Bodies, and Health Practices

The Brazilian educational theorist Paulo Freire wrote that the attainment of literacy was inextricably linked to personal, social, and political liberation and that the ways that some societies conceived of and taught literacy – offering only rote learning and discouraging critical thinking skills – kept people, especially those from more marginalized groups, politically powerless (Friere, 1970). Borzekowski (2009) argues that Freirian thought provides an interesting lens through which to think about health literacy in general and its development among children and adolescents more specifically. Certain medical environments are responsible for keeping groups, especially vulnerable groups like children, powerless (Borzekowski, 2009). With increased health literacy, children may be able to take more control and ownership of their own health – and by extension, their conceptualizations of health, healthy bodies, and health practices – in light of the power embedded within the dominant obesity discourse.

Nutbeam (2000) identifies individual and community benefits of functional, communicative, and critical health literacy that are applicable to a deconstruction of the dominant obesity discourse. Broadly, functional health literacy could lead to an improved knowledge of the risks associated with disease, compliance with prescribed actions, awareness of available health services, and increased participation in population health programs. Communicative health literacy could lead to an improved capacity to act independently, an improved motivation, more self-confidence, and the capacity to influence social norms and interact with social groups. Critical health literacy could lead to improved individual resilience to social and economic adversity, improve community empowerment, and enhance the capacity to act on social and economic determinants of health.

A review of the literature suggests that child literacy is associated with important health outcomes (DeWalt & Hink, 2009). Moreover, the work of scholars such as Friere, Borzekowski,

and Nutbeam suggests that increased health literacy could be individually and socially liberating, especially in the context of the dominant obesity discourse. However, the role of functional, communicative, and critical health literacy in influencing children's conceptualizations of health, healthy bodies, and health practices had not been empirically explored.

Measures of Health Literacy

Researchers argue that many of the health literacy studies to date have used reading ability as a proxy measure for health literacy (DeWalt & Pignone, 2005; Nielsen-Bohlman, Panzer, & Kindig, 2004; Schwartzberg, VanGeest, & Wang, 2005). Attempts to evaluate levels of health literacy have commonly focused on patient information, using measures such as: the Test of Functional Health Literacy in Adults (TOFHLA), which includes reading passages and numeracy items to assess comprehension of hospital forms and labeled prescription vials (Baker et al., 2007; Weiss, 2007); and the Rapid Estimate of Adult Literacy in Medicine (REALM), which assesses a participant's ability to read common medical words (Dani, Stobo, Capell, & Madhok, 2007; DeWalt, Berkman, Sheridan, Lohr, & Pignone, 2004). Though both of these tests have been administered (in their original or modified form) to children and adolescents, they have been criticized as not adequately testing health literacy (Rootman & Gordon-El-Bihbety, 2008; Rudd, Anderson, Oppenheimer, & Nath, 2007). Other measures that have been used to evaluate health literacy in children (DeWalt & Hink, 2009) include: the Wide Range Achievement Test (WRAT), which measure's an individual's ability to read words, comprehend sentences, spell, and compute solutions to math problems (Jastak & Bijou, 1946); the Woodcock-Johnson Tests of Cognitive Abilities, which is a set of intelligence tests over a variety of cognitive skills (Woodcok & Johnson, 1989); the Burt Reading Test, which asks kids to read words out loud (Thorpe, 1976); and the Peabody Individual Achievement Test (PIAT), which is

an assessment in general information, reading comprehension, mathematics, and spelling (Markwardt, 1989). However, DeWalt and Hink (2009) argue even these tests are highly correlated with generic reading tests and only focus on the skill of reading or interpreting information rather than a broader set of functional skills (let alone communicative or critical health literacy skills).

Thurs far, only a few researchers have attempted to develop scales measuring the broader constructs of functional, communicative, and critical health literacy. Ishikawa, Takeuchi, and Yano (2008) evaluated the reliability and validity of three health literacy scales (corresponding to functional, communicative, and critical health literacy) in a sample of 138 adult outpatients with type 2 diabetes. Based on this study, Ishikawa, Nomura, Sato, & Yano (2008) conducted another study, this time developing a more general scale for communicative and critical health literacy to administer to Japanese office workers. Finally, based on Ishikawa, Takeuchi, and Yano's original work, Chinn and McCarthy (2013) piloted a tool to measure functional, communicative, and critical health literacy in a primary care setting. However, the study locations, age range of the samples, premises, and concepts measured in these studies vary significantly from those of interest in this dissertation project. Therefore, these scales could not simply be replicated or adapted. Rather, it was more appropriate to develop measures for functional, communicative, and critical health literacy that were suitable for children and reflect Nutbeam's definitions of each of these constructs.

Health at Every Size

There is a need to use research findings to make specific recommendations towards creating health promotion models for children that do not focus on weight. There are some existing models which can be modified and adapted specifically for children. For instance, in

contrast to obesity recommendations based on the dominant obesity discourse, an alternative model of health, called Health at Every Size (HAES), offers a broader perspective on health and well-being that does not focus on weight (Bacon & Aphramor, 2011; Gregg & O'Hara, 2007; Robison & Carrier, 2004; Shelley, O'Hara, & Gregg, 2010; Tylka et al., 2014). Instead, HAES 1.) encourages body acceptance as opposed to weight loss or weight maintenance; 2.) supports reliance on internal regulatory processes, such as hunger and satiety, as opposed to encouraging cognitively-imposed dietary restriction; and 3.) promotes activity for a range of physical, psychological, and other synergistic benefits which are independent of weight loss (Bacon & Aphramor, 2011). HAES advocates for improving the health of all people; it does not claim that the approach will make people thinner, but that it will make them healthier (Shelley, O'Hara, & Gregg, 2010). Applying the HAES approach to one's personal life means engaging in behaviors that the individual finds sustainable and that support well being (e.g., finding playful and/or purposeful motives for moving that are not tied to weight loss goals, looking for direct ways to improve health that do not require a thinner body). HAES also acknowledges the role of structural factors in shaping health. At the policy level, incorporating a HAES philosophy means providing environments that give access to all the things that support the well-being of human bodies of all sizes (e.g., recess for all ages, end to weight discrimination in schools). In the health care setting, incorporating HAES means providing health interventions that give benefit to people at any size, without discrimination or bias (e.g., assisting patients in developing long-term health practices rather than pursuing weight loss) (Tylka et al., 2014).

To date, researchers have conducted 6 randomized controlled trials comparing HAES to conventional obesity treatment (Bacon et al., 2005; Ciliska, 1998; Goodrick et al., 1998; Provencher et al., 2009; Rapoport et al., 2000; Tanco et al., 1998). Evidence from these trials

indicates the HAES approach is associated with statistically and clinically relevant improvements in physiological measures (e.g., blood pressure), health behaviors (e.g., increased physical activity), and psychosocial outcomes (e.g., self-esteem and disordered eating) (Bacon & Aphramor, 2011). However, a major limitation of these studies is that all six clinical trials were conducted with adult women; none of these studies included children as research participants. There have been a few children's health promotion programs that incorporated principles of body acceptance and addressed body dissatisfaction, such as Hugs for Teens (Omichinski, 1996), Healthy Body Image: Teaching Kids to Eat and Love their Bodies (Kater, 2005), Wellness in the Rockies (University of Wyoming, 2005), and Everybody in Schools (Shelley, O'Hara, & Gregg, 2010). Though these programs demonstrated positive effects on children's well-being, including improving body size discrimination, endorsement of desirable lifestyle behaviors, self-image, and being able to think critically about media messages regarding appearance (Kater, Rohwer, & Londre, 2002; Leibman, 2005; Lobel, 1996), only one of them used HAES as the specific framework. There is therefore a need for continued research that examines how best to deliver a HAES intervention customized for other populations, including children (Bacon & Aphramor, 2011). Rather than merely adapting HAES interventions designed for adults, researchers should think critically about how best to design HAES based recommendations, policies, and curricula for children which encourage them to think about bodies, health, and health practices in a broader, non-weight centered way (instead of through the lens of the dominant obesity discourse). Exploring children's understandings of bodies, health, and health practices -as well as how the dominant obesity discourse and health literacy compare to these conceptualizations- can help inform the development of a HAES intervention that is specifically designed for children.

CHAPTER THREE: STUDY 1: CHILDREN'S CONCEPTUALIZATIONS OF HEALTH, HEALTHY BODIES, AND HEALTH PRACTICES: AN ANALYSIS OF DIALOGUE AND DRAWINGS

Introduction

Background

The increasing attention to, and behavioral recommendations for, reducing obesity have been attributed to the 'dominant obesity discourse'. Tylka et al. (2014) summarize that this discourse rests on the assumption that weight and disease are related in a linear fashion and emphasizes personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights." Today, some health promotion campaigns do embrace the idea that health comes in different sizes (e.g., ISAA, 2015; NAAFA, 2015). Still, overly simplistic and individualistic explanations regarding health and bodies are prevalent and more widely disseminated, especially in the media (Rail, 2009; Saguy & Almeling, 2008). Though the dominant obesity discourse may be promoted with good intentions, the assertions within it are not uncontested. For instance, though increased weight *is* associated with increased risk for diseases, causation is less well established. Studies that argue a direct effect of overweight and obesity on morbidity and mortality do not always control for personal, behavioral, and social factors that help explain the links between BMI and health (e.g., Bacon & Aphramor, 2011; Tylka et al., 2014). Moreover, researchers argue that environmental and genetic factors have a strong effect on BMI and often 'outweigh' voluntary lifestyle choices such as diet and physical activity (Schwartz, 2012; Silventoinen, Rokholm, Kaprio, & Sørensen, 2010; Sumithran et al., 2011). Furthermore, there is increasing concern that practices related to the dominant obesity discourse could be damaging to health, leading to negative health consequences resulting from eating disorders and weight stigmatization and discrimination (e.g., Bacon & Aphramor, 2011).

Researchers in a number of countries have reported on the ways schools, communities, the government, and clinicians are promoting children's health under the premise of the dominant obesity discourse (e.g., Beausoleil & Ward, 2010; Burrows, 2010; Evans, De Pian, Rich, & Davies, 2011). Yet, there has been little examination of if or how children take up ideas within the dominant obesity discourse that are communicated through these health promotion efforts (Rail, 2009; Wright, O'Flynn, & MacDonald, 2006). A poststructuralist approach emphasizes the notion that reality is not discovered, but rather constructed through the discourses to which one has access (Rail, 2002; Weedon, 1997; Wright, 2001). Michel Foucault's conceptualization of discourses as historically and culturally situated systems of meaning that shape what can be 'said' and known' in a society – as ways of constituting knowledge – are central to a poststructuralist approach (Weedon, 1997). A poststructuralist perspective allows for an understanding of the dominant obesity discourse as being culturally produced and having the power to shape how young people think about health and bodies (Rail, 2002; Weedon, 1997; Wright, 2001). Poststructuralist researchers speak to the importance of raising awareness about the problematic effects of the dominant obesity discourse, and of promoting alternative discourses; unless we do this, health may remain intangible to young people (Rail, 2009). However, there may be other discourses that shape children's understandings of bodies and health. How children take up ideas around fatness and obesity is mediated by their personal experiences, their own embodiment, their interaction with other ways of knowing, and other truths and operations of power in relation to the knowledge produced around health, obesity, and the body (Wright, 2009). An examination of children's conceptualizations of health –as well as an 'unpacking' of the association between the dominant obesity discourse and these

conceptualizations– is critically important if we are to promote children's health in a more holistic manner.

Research Aim

This study builds on the work of the few scholars who have explored how young people in different geographic contexts think about health and bodies (e.g., Atencio, 2010; Burrows, Wright, & Jungerson-Smith 2001; MacNeil & Rail, 2010; Rail, 2009; Wright, O'Flynn, & MacDonald, 2006). The study fills a knowledge gap by exploring conceptualizations of health, healthy bodies, and health practices among younger, grade school children in the U.S. and takes a novel approach through applying a poststructural lens and allowing children to share their perspectives through open-ended dialogue and drawings.

Methods

Settings and Participants

The sample consisted of 29 youth from a Before and After Care (B&A) program at a public elementary school in the mid-Atlantic region. Creswell (2007) recommends that 20-30 interviews conducted over several visits to a research site are typically required to saturate categories underlying a research topic (i.e., reach a point of data replication or redundancy). Children who were between the ages of eight and 12 at the time of recruitment were invited to participate, though the final sample only included eight-11 year olds (consent forms were not received from the few 12 year olds in the program). Children between the ages of eight and 12 years comprise a specific developmental stage called "middle childhood" (Berk, 2003; Collins, 1984; McDevitt & Ormrod, 2002). Although there is variation due to individual, cultural, socio-economic, and geographic differences, specific characteristics shared by most eight-12 year olds include being: increasingly aware of social, cultural, and physical differences; self-aware and

self-critical; aware of their own appearance, and in or nearing puberty (Salkind, 2004; Scales, Sesma & Bolstrom, 2004). The B&A coordinator distributed parental consent forms during drop off or pick-up times over the week prior to study start-up. All study procedures were approved by the appropriate research oversight boards.

Data Collection Procedures

Semi-structured one-on-one interviews were conducted with each of the 29 children in private rooms at the school. Thirty-one percent of the participants were eight years old; 34% were nine, 14% were 10, and 21% were 11. Fifty-nine percent of the sample was female. Each interview lasted about 20 to 25 minutes. All interviews were audio recorded and conducted by the lead investigator while two undergraduate students took turns serving as note-takers during each interview, making notations regarding verbal or body language that was inaudible on the recording.

The interview guide included open-ended questions addressing conceptualizations of health ('What does healthy mean to you'; 'What does unhealthy mean to you'?) and healthy bodies ('Can you describe a healthy body to me'?). Conceptualizations of health practices were also elicited through a set of tasks and follow-up questions ('On this sheet of paper, draw an image of a girl/boy doing something healthy'; '…an image of a girl/boy doing something unhealthy'; 'Tell me about what you drew'). Additional questions were used to elicit children's perceptions of their own health status and behaviors (e.g., 'Do you think you're healthy'?; 'Do you do any unhealthy things'?). The interview questions did not include specific terms related to the dominant obesity discourse (e.g., weight, obesity) since we did not want to bias the children's ideas regarding health. Some of the interview questions were adopted from a prior pilot study in which nine children ranging from kindergarten through 3rd grade from two schools (different

from this study school) were interviewed regarding their definitions of health and their own health practice. Other questions were adapted based on previous research where children's ideas regarding health, healthy bodies, and health practices were elicited (e.g., Atencio, 2010; Burrows, Wright, & Jungerson-Smith, 2002; MacNeill & Rail, 2010; Wright, O'Flynn, & MacDonald, 2006).

Data Analysis Procedures

All recorded interviews were transcribed verbatim, and all transcripts and scanned drawings were uploaded into Atlas.ti, a qualitative data management program (Atlast.ti, 7.5.7 ed, 2015). The analytic steps of Qualitative Description (Neergaard, Olesen, Anderson, & Sondergaard, 2009) were used to analyze the data. Prior to data collection, a draft coding dictionary was created, which included codes pertaining to each of the three types of conceptualizations (i.e., *physical activity* under "conceptualizations of health;" *weight* under "conceptualizations of healthy bodies'" and *fruits and veggies* under "conceptualization of health practices"). The dictionary codes were selected based on children's responses to interview questions during the pilot project; some codes fit under more than one type of conceptualization. Codes were given operational definitions to guide the coding process. Once data collection was complete, based on an initial reading of all the drawings and transcripts, new codes that were not a part of the initial dictionary were added. With the revised coding dictionary open in Atlas.ti, transcripts were read and relevant codes were manually assigned to highlighted passages. Based predominantly on each child's verbal description of what he/she drew, codes were also manually assigned to relevant drawn components (e.g., foods, activities, behaviors, places) and captions (e.g., word bubbles, labels) in each drawing.

Once all the drawings and transcripts were coded, an inter-rater reliability check was conducted. To do so, two reviewers independently coded the same set of four drawings and four transcripts. A code-by-code comparison of the data was performed to ensure 90% agreement between the raters. Any codes the raters identified that were not already part of the revised coding dictionary were added. Transcripts and drawings were reviewed again, and as appropriate, re-coded using this final coding dictionary.

Once coding was completed, queries were run to search for narrative segments related to the three types of conceptualizations ("health," "healthy bodies," and "health practices"). These coded segments were sorted in a separate document. Next, coded segments were consolidated and emergent themes addressing conceptualizations of health, healthy bodies, and health practices were generated. Analysis included children's responses to questions regarding both what is 'healthy' and 'unhealthy' (these concepts were so intermingled they could not be separated into different themes). How children's conceptualizations of health, healthy bodies, and health practices compare to the dominant obesity discourse is addressed in the Discussion.

Results

Theme 1: Children frequently conceptualize health, healthy bodies, and health practices in terms of diet and physical activity practices

When asked to describe what the words 'healthy' and 'unhealthy' meant, all 29 participants (100%) suggested the importance of consuming (or not consuming) certain foods and/or beverages. Specifically, 22 children (76%) said 'healthy' meant eating fruits and vegetables (e.g., 'broccoli', 'pineapples', and 'greens especially'). Only a few children talked about the importance of consuming other foods and beverages to be healthy, such as drinking 'water' and 'milk' and eating 'beans' and 'rice.' Two children spoke about food more generally,

indicating that it was important to consume 'the right amount' of foods that 'won't make you get sick in your stomach and will make you feel active' or that you should eat a 'rainbow.' Eleven children (38%) said 'unhealthy' meant eating junk food (e.g., 'soda,' 'chips,' 'milkshakes,' 'burgers'). Three children (10%) clarified that eating junk food did not simply entail eating these foods, but eating these foods often or in large quantities (i.e., 'every day,' having 'too much chicken, too many fries, less vegetables'). Twenty-three participants (79%) said 'healthy' meant performing physical activity (e.g., 'moving', 'working out', 'being active'). For instance, one 11 year old girl said that to her, 'healthy' meant 'getting enough exercise definitely'. When asked what enough exercise is, she said:

> …definitely exercising every day…with your walking and running, you should probably run at least a mile every day, like just when you're walking around that should like add up to a mile. And um, just other like cardiovascular activities and stuff like that.

An 11 year old boy said that 'healthy' meant to 'go outside, play, exercise…you know, all that'. In contrast, four participants (14%) talked about being 'lazy' and nine participants said watching 'TV' or 'playing video games' when asked what the word 'unhealthy' meant to them. Of these nine, a few participants said it was not just watching TV that was unhealthy, but rather watching too much of it.

Children even emphasized the importance of diet and activity practices in their conceptualizations of a 'healthy body'. Specifically, fourteen participants (48%) made reference to food and physical activity when asked to describe a 'healthy body'. Though they used a variety of words or phrases to describe these practices, many children did not provide much detail when describing *what* these practices entailed. For instance, children said a 'healthy body' is: '(eating) lots of fruits and vegetables', 'you work out', 'you exercise', 'have all the right

nutrients', and 'you play for a long time'. One nine year old girl provided a more specific response regarding how diet is related to a 'healthy body':

> …like there's not really a way to explain healthy bodies. Sometimes there is, like if you eat a lot of junk food and stuff and you get kind of overweighted, that's not really a healthy body. But even if you are overweighted and you eat a lot of healthy foods that's kind of a healthy body...like it depends on what you eat, that's a healthy body. It depends on what you eat.

Not surprisingly, the emphasis on particular diet and activity choices was even more pronounced in children's conceptualizations of health practices. When asked to draw a picture of a boy or girl 'doing something healthy' (and explain what they drew), 10 participants (34%) drew a picture of a child (or children) consuming food and/or beverages. Of these 10, eight children (80%) drew pictures of a child eating only fruits and/or vegetables (see Figures 3.1 and 3.2). Only two of these 10 children's (20%) drawings included foods other than fruit or vegetables (e.g., 'beans for protein, 'sandwich'). Three of the 10 children (30%) drew pictures that included children consuming water (all three of these participants' drawings included food as well). On the other hand, when asked to draw a picture of a boy or girl 'doing something unhealthy', 25 participants (86%) drew a picture of a child (or children) consuming food or beverages. Here, the kinds of food and beverages children described were more varied, ranging from 'potato chips', a 'popsicle', 'junk food', 'Pringles', 'chocolate bar', 'candy', a 'hamburger', 'bottle of soda', 'M & Ms', 'McDonalds', 'donuts', 'buttered noodles', 'ice cream', 'cake', and 'cookies' (see Figures 3.3 and 3.4). In some instances, it seemed that children had narrower ideas regarding what was 'healthy' when drawing and describing someone else doing something 'healthy' (or 'unhealthy') as opposed to when reflecting on their own health practices. For

instance, one eight year old girl drew a picture of a girl eating cookies as her depiction of someone doing something 'unhealthy'. When the interviewer asked the participant if *she* eats cookies, she said 'yes', but said she did not consider it unhealthy because she does not 'eat it like all the time'. Another nine year old girl drew a girl 'eating a chocolate bar' as her picture of someone 'doing something unhealthy'. In contrast, when asked if she thought she was 'healthy', she said she was because she 'usually eats healthy foods' which includes 'pancakes for breakfast and bagels and for lunch….fruit or vegetables…a sandwich…a juice box…a *little dessert*'.

When asked to draw a picture of a boy or girl 'doing something healthy', 20 participants (69%) drew a picture of a child (or children) engaging in some form of physical activity (e.g., basketball, running). In contrast, when asked to draw a picture of a boy or girl 'doing something unhealthy', 12 children (41%) drew pictures of a child (or children) watching TV (see Figures 3.5 and 3.6).

Theme 2: Many children allude to the importance of having a specific weight or body size to be healthy

Children also frequently conceptualized health in terms of weight or body size. Specifically, twelve participants (41%) suggested the importance of weight or body size in their definitions of 'healthy' and 'unhealthy'. Of these 12, 10 participants (83%) talked about how being 'fat', 'too skinny', 'overweight', or 'underweight' was not healthy (though most children did not provide definitions for the terms they used). When asked *why* this was unhealthy, two of the 10 children (20%) said what was unhealthy was the *behaviors* that they perceived contributed to the weight or body size (e.g., 'you're eating too much junk food', 'you don't eat like great nutrients') rather than the weight or body size itself. For five of the 10 participants (50%), the negative consequences of being the 'wrong' weight had to do with physical ability (e.g., 'you

tend to slow down and you're not with the rest of the people in the group', 'if you're underweight…you're just going to get knocked to the ground', 'if you're overweight, you're not going to be able to run that fast'). Two of the 10 children (20%) mentioned health conditions such as diabetes and blood clots as consequences of being overweight. One child said getting 'fat' was unhealthy, but did not explain why.

In contrast, two of the 12 children (17%) who mentioned weight or size in their definition of health had a more nuanced perspective regarding the relationship between them. One eight year old girl said:

> There are different kinds of healthy…like bodies...sometimes people are skinny and they're healthy and sometimes people are bigger and they're still healthy… most of my friends are skinnier than me…I asked about that when I went to the doctor and she says that everyone is made differently.

Another 11 year old girl said 'well it's not always because you're unhealthy (that you're overweight). You might be on like medicine or something, but sometimes when you're overweight it's because you eat too much of unhealthy foods'.

In some instances, children's conceptualizations of 'healthy bodies' were also focused on achieving a particular body. Specifically, when asked to describe a 'healthy body', nine participants (31%) mentioned the importance of being the right weight or size. For instance, one eight year old girl said a 'healthy body' is 'where a person is in between skinny and fat'. Another 11 year old girl said a 'healthy body' is when 'you're the right weight for your height…I think there's a body mass index period also…when you usually go to the doctor they tell you if you're the right weight'.

We did not specifically analyze the bodies that children drew in their pictures of someone 'doing something healthy' (or 'unhealthy) since, depending on drawing style and ability, bodies that participants drew could vary even if children were not intending to illustrate differences in body size. However, it seemed that from some children's descriptions of their drawings, ideas of what a 'healthy body' could be were broader when reflecting on their own bodies as opposed to others'. For instance, when asked to draw a picture of a girl 'doing something unhealthy', the eight year old girl who elsewhere reflected that though her friends were skinnier than her, she thought that people could be bigger and still be healthy, described her picture this way:

> …a *fat* guy eating McDonalds and he has a hamburger which he got from McDonalds, so it's really disgusting and unhealthy. And he got French fries and a big thing of soda. And he also has a bag next to him that has a chocolate bar and a lot of other candies...and I wrote down here "This is also a stereotypical American" (see Figure 3.7).

Theme 3: Less frequently, conceptualizations of health, healthy bodies, and health practices extended to concepts beyond food, activity and body size

Though less frequent, some of the children's conceptualizations of what was 'healthy' extended beyond food, activity, and body size. The following ideas were each mentioned once or twice by children in response to what 'healthy' meant to them: 'hygiene', 'going outside', 'getting out in sunlight', 'not holding heavy things', 'helping your brain', 'reading a book', 'going to school', 'having fun', 'having a job', 'not littering', and 'not getting sick'. One 11 year old girl spoke about external factors which could influence one's health practices:

> Nobody actually tries to be unhealthy...because like everybody wants to be healthy because they want to keep their body in good shape and intact and stuff…maybe like even though they don't want to be unhealthy they never really get around to doing all the

> healthy things so they end up doing unhealthy things too because they're not really considering everything they do…um maybe they think the unhealthy things are healthy because sometimes different like fast food places have ads on TV saying that they are healthy and stuff and also maybe like all the friends were like 'oh that's healthy' or something.

In their descriptions of healthy bodies, a few children talked about aspects of body composition other than weight or size (e.g., having 'muscles', being 'strong', 'not too weak'). One eight year old girl said 'a healthy body is a body that isn't just like pure fat...it's someone who can have a little bit of fat because having a little bit of fat is healthy'. An 11 year old boy said a 'healthy body' would 'look like you've been eating a lot of stuff…um not a lot of stuff, I mean like really good stuff that would be perfect for your body'. In contrast, three participants (10%) said they could not describe a 'healthy body'. One nine year old girl said this was because 'well anything could be, 'cause everybody's different'. Fourteen participants (48%) talked about the avoidance of negative health conditions and having proper body function in their descriptions of 'healthy bodies'. Specifically, three children (21%) talked about the importance of not getting cancer and three children (21%) talked about not getting sick. The following attributes of a 'healthy body' were mentioned by one child each: not having diabetes, digesting properly, having a good immune system, heart working well, being physically able, having good eye sight, using the bathroom every day, and going to the doctor.

Only two children included some concepts other than food and physical activity in their drawings of a boy/girl 'doing something healthy'. A nine year old boy explained that the boy in his drawing was 'at the table eating salad…he's getting ready to go upstairs and brush his teeth,

and then he's going to go to bed'. An eight year old girl, who drew a picture of a girl walking her dog and eating an apple from the tree, further explained that she:

> …drew a trash can so when she was finished, the apple...she wouldn't litter and throw it in the trash...I thought that it would be healthy because she wouldn't hurt the earth by littering and throwing the apple when she was finished on the ground.

Other things children drew in their pictures of a boy/girl 'doing something unhealthy' included things like dyed hair, throwing up, and licking dirt.

Discussion

This study explored children's conceptualizations of health, healthy bodies, and health practices. In line with poststructuralist views, we found that though there are dominant discourses which influence children's conceptualizations, their subjectivities are also fluid and shaped through their personal and social environments.

In many instances, children's conceptualizations were - in direct or more subtle ways- informed by principles embedded within the dominant obesity discourse (i.e., the assumption that weight and disease are related in a linear fashion and an emphasis on personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights" (Tylka et al., 2014)). This was most apparent when children were describing *others'* health practices as opposed to their own health status and behaviors. For instance, in line with the assumption that weight and disease are related in a linear fashion, many children suggested that being the 'wrong' weight had negative consequences. In only limited cases, these negative consequences were framed in relation to health outcomes. For other children, the reasons why being the 'wrong' weight or size were varied (e.g., the behaviors that contribute to the body size are unhealthy, being the wrong weight leads to inhibited physical ability, etc.).

Children also alluded to the importance of taking personal responsibility for healthy lifestyle choices. This idea of personal responsibility is not limited to the dominant obesity discourse, but rather, prevalent in explanations regarding health and bodies (Rail, 2009; Saguy & Almeling, 2008). In their responses, children emphasized the value of eating certain foods (e.g., consuming fruits and vegetables but avoiding 'junk food') and performing certain types and amounts of physical activity. Specifically, children's ideas of a 'healthy' diet predominantly focused on raw foods, such as fruits and vegetables, while their descriptions of 'unhealthy' foods and beverages included a greater variety of prepared or processed items. Thus, in line with poststructuralist argument that health may remain intangible to young people unless we raise awareness about the problematic effects of the dominant obesity discourse, the emphasis on personal responsibility for consuming particular, limited foods made the concept of a 'healthy' diet somewhat less reflective of everyday practices and could therefore be less tangible. Similarly, many children focused on the importance of physical activities (e.g., walking a mile, running, etc.) - which require certain "taken for granted" physical capabilities- in order to be healthy, again making the concept of health unattainable for those who may not be able to partake in these practices. Moreover, focusing on individual diet and physical activity practices shifts the emphasis off of broader economic, social, and cultural factors that shape and determine one's' lived experiences and health choices.

Children's responses also suggested that it is one's personal responsibility to maintain a healthy weight (e.g., having the 'wrong' weight means you ate too much junk food, did not get the proper nutrients, etc.). Though these comments were informed by arguments within the dominant obesity discourse, in very rare instances did children mention the word 'obesity' itself in describing health or bodies. Even so, many children's descriptions of healthy bodies suggest

that health cannot be attained unless individuals achieve the 'right' body size or weight. Yet, body size and weight can be influenced by genetic, economic, social, cultural factors (e.g., Schwartz, 2012; Silventoinen, Rokholm, Kaprio, & Sørensen, 2010; Sumithran et al., 2011).

Though the dominant obesity discourse did seem to influence the way children conceptualize health, healthy bodies, and health practices, the findings uncovered other discourses which shape their subjectivities. For instance, though many children suggested that having the 'wrong' weight had negative consequences, only a few children directly mentioned that increased weight could lead to disease (e.g., diabetes, blood clots). Most children who spoke about the negative consequences of improper body weight or size seemed to interpret these negative consequences through their lived experiences and developmentally contextualized realities (e.g., being the 'wrong' weight would affect your ability to play sports, run fast, etc.). A couple of children suggested that you could be healthy even if your body was not the 'right' size. At times, children also defined health in terms of factors other than food, activity, and body size (e.g., having fun, going to school, reading a book). Some children even specified factors other than diet or activity choices (e.g., medicine you're on) that could affect your body size and external variables (e.g., TV, friends) that could impact one's lifestyle decisions.

This study addresses a knowledge gap by examining children's conceptualizations of health, healthy bodies, and health practices as well as the association between the dominant obesity discourse and these conceptualizations. Though all of the children in the study sample attended the same school and were within the same relative age range, they did not always conceptualize health in the same ways. It could be that when children are influenced by various discourses through their family, school, and social environments, they interpret and internalize information regarding health and bodies through different lenses. Furthermore, due to the

developmental period they are in, children in this age range may also be constructing their own subjectivities in the context of the social, cultural, and physical differences they observe around them (Salkind, 2004; Scales, Sesma & Bolstrom, 2004). Further research is warranted to explore the various factors and discourses that shape children's subjectivities, i.e., what it is that makes children 'take up' the dominant obesity discourse and why and when they oppose it. Specifically, we should investigate if there are systematic differences that determine what information children attend to in the environments they navigate and why.

This study offers unique insight into children's conceptualizations of health, healthy bodies, and health practices. Though established qualitative analysis methods (e.g., uniform coding procedures, inter-rater reliability check) were used to enhance the reliability and interpretability of the data, the use of a poststructural lens and open-ended data collection methods allowed children to express their subjectivities through their own voices without imposition of pre-determined ideas about weight and bodies,. Several limitations should be acknowledged. Study participants constituted a select sample of children from a single school in one mid-Atlantic city. Moreover, since participants were recruited from the school's B&A program (which requires additional fees), children who were asked to, and agreed to, participate may have differed (e.g., socioeconomically) from their broader age cohort. While representativeness was strengthened by having liberal eligibility criteria, and inclusion of the voices of 29 children of both genders from the middle childhood developmental period, future studies should explore similar and divergent demographic and developmental groups in other geographic regions. Also, a longitudinal study with repeated interviews over the course of several years could provide additional insight into developmental changes that may occur in the lives of the children that influence their perceptions of health and healthy bodies as they age.

The findings from this study can inform efforts – in homes, schools, communities, clinics, and policies– to raise awareness about the problematic effects of the dominant obesity discourse and promote alternative discourses which embrace a holistic view of health, do not stigmatize lifestyle choices and bodies, and acknowledge the genetic, social, and environmental contexts that influence these choices and bodies.

Figure 3.1

Male, 9 yrs old

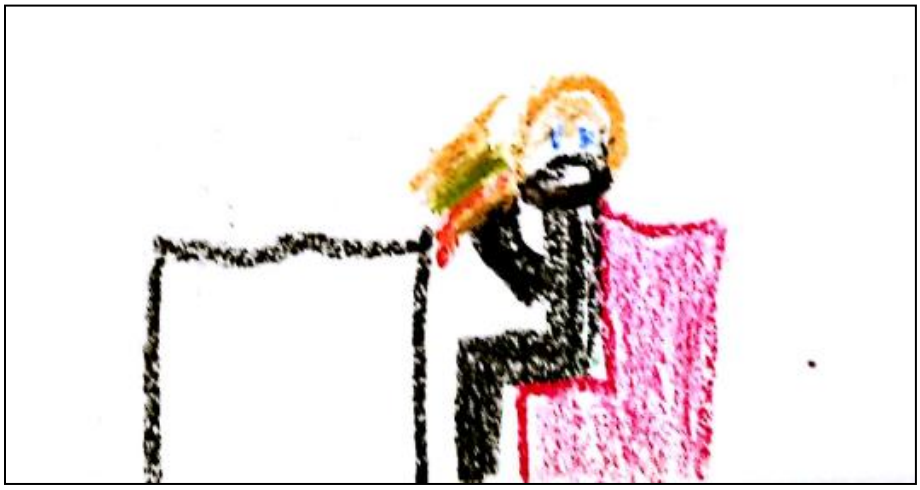
Figure 3.2

Female, 8 yrs old

Figure 3.3

Female, 8 yrs old

Figure 3.4

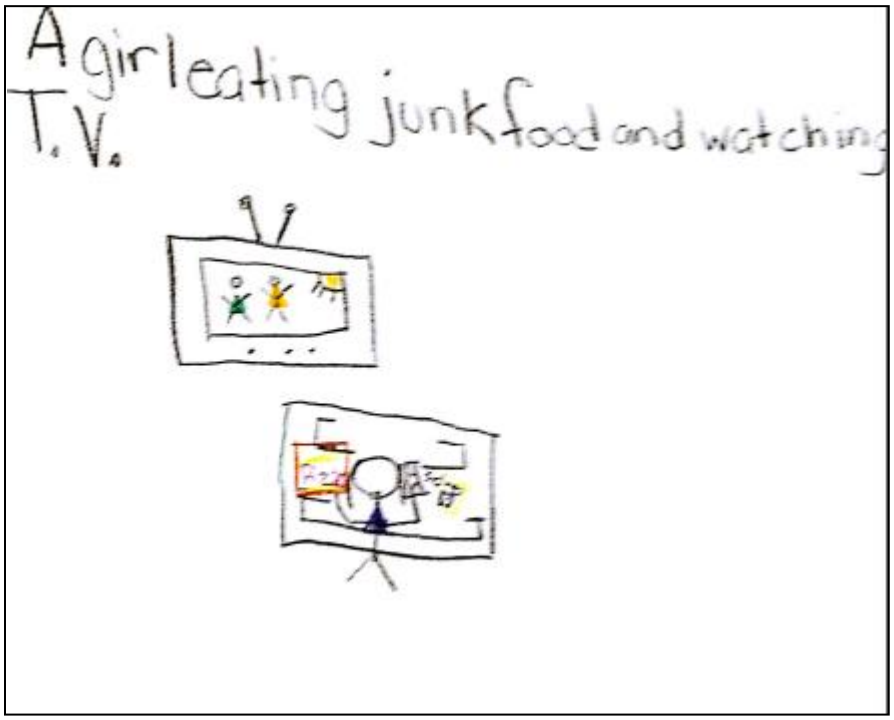


Male, 9 yrs old

Figure 3.5

Female, 11 yrs old

Figure 3.6



Female, 11 yrs old

Figure 3.7

Female, 8 yrs old

CHAPTER 4: STUDY 2: HOW FUNCTIONAL, COMMUNICATIVE, AND CRITICAL HEALTH LITERACY ARE ASSOCIATED WITH CHILDREN'S CONCEPTUALIZATIONS OF HEALTH, HEALTHY BODIES, AND HEALTH PRACTICES

Introduction

Background

More and more, health-related knowledge, attitudes, and behaviors developed during childhood – including those related to food, activity, and weight– are being recognized as foundational, deeply rooted, and resistant to change later, when children become adults (Driessnack, Chung, Perkhounkova, & Hein, 2014). For instance, promoting children's physical activity and reducing their sedentary behaviors during the early childhood period can have sustained benefits that carry over later in life (Jones, Hinkley, Okely, & Salmon, 2013). On the other hand, research suggests that disordered eating behaviors (e.g., restrictive eating, binge eating) enacted during early adolescence are predictive of their continued use as well as a progression to clinical eating disorders during later adolescence or young adulthood (Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011). Therefore, the best time to perform an assessment of children's concepts of health, healthy bodies, and health practices may be during childhood, before problematic health attitudes and behavior form or take root (Driessnack, Chung, Perkhounkova, & Hein, 2014). The knowledge gained from such assessments can be applied towards recommendations, programs, and curricula that aim to promote children's health and well-being.

A poststructuralist approach emphasizes the notion that reality is not discovered, but rather constructed through the discourses to which one has access (Rail, 2002; Weedon, 1997; Wright, 2001). This approach emphasizes that children's understandings of health and healthy

bodies is mediated by personal experience, their own embodiment, interaction with other ways of knowing, and other truths in relation to the knowledge produced around health and the body (Wright, 2009). Examined through a poststructural approach, health literacy - the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health- may be one form of "knowing" that influences how children's realities of health are constructed.

A few researchers have explored children's conceptualizations of health (e.g., Atencio, 2010; Beausoleil & Petherick, in press; Burrows, Wright, & Jungerson-Smith 2001; MacNeil & Rail, 2010; Rail, 2009; Wright, O'Flynn, & MacDonald, 2006); none have examined the role health literacy plays in shaping these conceptualizations. Literature suggests that child literacy could play a role in how children come to know and internalize concepts about health. For instance, drawing from theorists such as Freire, Piaget, and Vygotsky, Borzekowski (2009) writes that education and literacy allow children to: achieve ownership and empowerment over their own lives, increase ability to improve health on their own, and increase problem solving skills. She emphasizes that since children and adolescents regularly interact with health messages, interventions, and health practitioners, health literacy skills should be encouraged at a very young age and that the absence of problem-solving skills can render certain groups, such as children, unable to improve their health on their own. With increased health literacy, the relationship between children and their sources of health information can be more similar to a "partnership" such that children can actively participate in decision-making regarding their own health care and understand what healthy behaviors are (Borzekowski, 2009).

Health Literacy Models

Efforts to operationalize health literacy vary in scope, method and quality (Sørensen et al., 2012). Peerson and Saunders (2009) argue that many studies that claim to discuss health literacy actually focus on the limited and easily measurable concept of "medical literacy" which refers to the knowledge, skills, and abilities that pertain to interactions with the *health care system* (e.g., the ability to read, understand and act on instructions for taking a cholesterol-lowering drug). In contrast, broader notions of "health literacy" include the capacity to understand and act on messages that are central to making critical judgments and decisions not only in healthcare-related settings, but also *about* health (e.g., the ability to access information about cholesterol, to understand it, and to apply it to one's own life) (Peerson & Saunders, 2009).

Traditional models of health literacy are not sufficiently comprehensive to line up with the evolving health literacy definitions since very few of these models have integrated the components included in "medical" and "health" literacy models (Sørensen et al., 2012). However, Nutbeam (2000) presents a model that bridges the difference between both views by extending the concept of health literacy to include dimensions which go beyond individual competencies in the medical context. The components of health literacy included in this model are: (1) Functional- the basic skills in reading and writing that are necessary to function effectively in everyday situations, broadly comparable with the content of "medical" health literacy referred to above; (2) Communicative- more advanced cognitive and literacy skills which, together with social skills, can be used to actively participate in everyday situations, extract information, derive meaning from different forms of communication, and apply this to changing circumstances; and (3) Critical- more advanced cognitive skills which, together with

social skills, can be applied to critically analyze information and use this to exert greater control over life events and situations (Nutbeam, 2000).

Research Question

Adopting a poststructuralist lens, this study is framed around a broader scope of health literacy constructs and is guided by the following research question: How do children's functional, communicative, and critical health literacy compare to their conceptualizations of health, healthy bodies, and health practices? The findings from this research can be applied towards the development of policies and programs that encourage accurate, holistic, and beneficial considerations of health, healthy bodies, and health practices and specifically address the aspects of health literacy that emerge as relevant to these conceptualizations.

Methods

Settings and Participants

The sample consisted of 29 youth from a Before and After Care (B&A) program at a public elementary school in the mid-Atlantic region. Creswell (2007) recommends that 20-30 interviews conducted over several visits to a research site are typically required to saturate categories underlying a research topic (i.e., interviews reflect data replication or redundancy). Children who were between the ages of eight and 12 at the time of recruitment were invited to participate (though the sample only included eight-11 year olds since we did not receive consent forms from the few 12 year old children in B&A). Eight to 12 year old children comprise a specific developmental stage called "middle childhood" (Berk, 2003; Collins, 1984; McDevitt & Ormrod, 2002). More than any other developmental period, early and middle childhood sets the stage for health literacy, self-discipline, the ability to make good decisions about risky situations, eating habits, and conflict negotiation (USDHHS, 2014). All study procedures were approved by

the University of Maryland Institutional Review Board (IRB) as well as the school district's research oversight board.

Interview Procedures

Semi-structured one-on-one interviews were conducted with each of the 29 children in private rooms at the school. Thirty-one percent of the participants were eight years old; 34% were nine, 14% were 10, and 21% were 11. Fifty nine percent of the sample was female. Interviews were split between two sessions so that each interview did not exceed 25 minutes. All interviews were audio recorded and conducted by the lead investigator while two undergraduate students took turns serving as note-takers, writing down things such as verbal or body language that was inaudible on the recording.

The interview guide included open-ended questions addressing conceptualizations of health (*What does healthy mean to you?*; *What does unhealthy mean to you*?) and conceptualizations of healthy bodies (*Can you describe a healthy body to me*?). Conceptualizations of health practices were elicited through a task and a follow-up question *(On this sheet of paper, draw an image of a girl/boy doing something healthy/*then s*omething unhealthy*; *Tell me about what you drew*). Some questions and tasks in the interview guide were adopted from a pilot study in which nine children ranging from kindergarten through 3rd grade (from two schools different than the one in this study) were interviewed regarding their constructions of health, obesity, and integration of health practices in everyday life. Other questions were adapted based on previous studies in which researchers elicited children's ideas regarding health, healthy bodies, and health practices (e.g., Atencio, 2010; Beausoleil & Petherick, in press; Burrows, Wright, & Jungerson-Smith 2001; MacNeil & Rail, 2010; Rail, 2009; Wright, O'Flynn, & MacDonald, 2006).

The interview guide also included questions regarding functional, communicative, and critical health literacy. Researchers argue that many of the children's health literacy studies to date have used reading ability as a proxy measure for health literacy rather than focus on a broader set of functional skills (DeWalt & Pignone, 2005; DeWalt & Hink, 2009). The Newest Vital Sign (NVS) is a screening tool for functional health literacy that extends beyond reading ability (Weis et al., 2005). The original NVS asks respondents to look at a nutritional label from an ice cream carton and answer a series of six questions. NVS psychometrics include good internal consistency ($\alpha = 0.76$) and criterion validity ($r_p = 0.59$, $p = .001$) in a sample of adult primary-care patients. Recently, Driessnack, Chung, Perkhounkova, and Hein (2014) explored the feasibility, utility, and validity of using the NVS to assess health literacy in children between the ages of seven and 12. They found that in a sample of 47 parent-child dyads, children were able to complete the NVS in the same time frame and with the same distribution of results and difficulty as adults. However, both parents and children had difficulty with the question that required them to calculate percentages. Moreover, health literacy levels for both parents and children in this sample were above the normative NVS data for adults in Weis et al.'s original study, perhaps because data was collected at a Metropolitan Science center. This suggests that this study would not be generalizable to all populations. Indeed, when Aldoory et al. (personal communication, July 23, 2014) modified the language, reduced the scale from six to four items, and administered the scale to 2nd grade students, children were still not able to understand the quantitative questions related to the ice cream label. Chinn (2011) argues that qualitative measures of health literacy can focus on the detail of how people actually interact critically with health information in real-life situations. Therefore, in this study, participants were given the

same nutrition label from the original NVS instrument (see Figure 4.1), but asked four open-ended questions; two were primarily quantitative and two were qualitative.

Thus far, only a few researchers have attempted to develop scales which measure communicative and critical health literacy. For instance, Ishikawa, Takeuchi, and Yano (2008) evaluated the reliability and validity of such a measure in a sample of 138 adult outpatients with type-2 diabetes; Ishikawa, Nomura, Sato, & Yano (2008) administered a scale to Japanese office workers; and Chinn and McCarthy (2013) piloted a tool in an adult primary care setting. However, the study locations, sample age, premise, and concepts measured in those studies vary significantly from those of interest in this project. Therefore, for this exploratory study, new qualitative measures were developed to evaluate children's communicative and critical health literacy (see Table 4.1 for full Health Literacy interview guide).

Data Analysis Procedures

All recorded interviews were transcribed verbatim, and all transcripts and scanned drawings were uploaded into Atlas.ti, a qualitative data management program (Atlast.ti, 7.5.7 ed, 2015). The analytic steps of Qualitative Description (Neergaard, Olesen, Anderson, & Sondergaard, 2009) were used to analyze the data. The first step involved coding of the data. Prior to data collection, a coding dictionary that included terms related to the research question was developed. Many of these terms were selected based on responses children had provided during the pilot project. The codes in the coding dictionary were given operational definitions to guide the coding process (see Table 4.2 for sample terms and operational definitions). Once data collection was complete, based on an initial reading of all the drawings and transcripts, new codes that were not a part of the initial dictionary were added. With the coding dictionary open in Atlas.ti, transcripts were read and relevant codes were manually assigned to highlighted

passages. Based predominantly on each child's verbal descriptions of what he/she drew, codes were also manually assigned to relevant drawn components (e.g., foods, activities, behaviors, places) and captions (e.g., word bubbles, labels) in each drawing. Data segments were coded using terms under relevant dictionary domains regardless of where in the transcript the data segment was found. For instance, if a child alluded to a conceptualization of health while responding to a health literacy question, this data segment was also coded using a term under the dictionary domain "conceptualizations of health." Once all the drawings and transcripts were coded, an inter-rater reliability check was conducted: two reviewers independently coded the same set of four drawings and four transcripts and a code-by-code comparison of the data was performed to ensure 90% agreement between the raters. Any additional codes that the two raters identified were also added to the coding dictionary. Transcripts and drawings were reviewed again, and as appropriate, re-coded using the final coding dictionary.

Once coding was finalized, the remainder of the data analysis steps were initially performed individually for each child so as to allow us to align each child's functional, communicative, and critical health literacy against his/her conceptualizations of health, healthy bodies, and health practices. First, queries were run to capture narrative segments related to the three health literacy domains for each participant. Second, these coded segments were sorted according to health literacy domain in a separate document. Third, coded segments were consolidated to generate themes for each child's functional, communicative, and critical health literacy. Next, these three steps were repeated for each child's conceptualizations of health, healthy bodies, and health practices. Finally, each child's functional, communicative, and critical health literacy was compared against his/her conceptualizations of health, healthy bodies and health practices. Once the individual level analysis was complete, we looked for commonalities

and differences between participants' data to generate a set of emergent themes for the entire sample. In the section that follows, we summarize how children's functional, communicative, and critical health literacy compare to their overall conceptualizations of health, healthy bodies, and health practices (we refer to these collectively as 'conceptualizations of health').

Results

Functional Health Literacy

Children's conceptualizations of health did not seem to differ based on their responses to the questions *can you tell me how much sugar is in this food?* or *Let's pretend you are allergic to peanuts…could you eat this ice cream?* The themes below focus on the aspects of functional health literacy that had stronger associations with children's conceptualizations of health, healthy bodies, and health practices.

Theme 1: Children's interpretations of the information on the nutrition label coincide with their conceptualizations of health

There were patterns between the information that children noticed on the nutrition label - or how they described this information- and their conceptualizations of health. For instance, when asked to describe the words she understood on the nutrition label, one eight year old girl said:

> Fiber is nutritious because fiber helps your body. Not like fat, because fat doesn't help your body. Sugar means it's very sweet and bad for your body because if you eat too much candy, which has sugar in it, and too much cake, that has sugar in it, you'll be fat.

When asked to describe what the word 'healthy' meant to her, this same participant said:

> Healthy means when a person is eating healthy food…because when you're fat, it means you're eating too much junk food and junk food is bad for you. And if you eat too much junk food you'll get really really really fat.

When asked to describe what she noticed first on the nutrition label, another eight year old girl said "I noticed the…top that says Nutrient Facts. Then I noticed like, sugar…because it's like sugar, and sugar's awesome, but it's bad for you." This same participant said the word 'unhealthy' meant "if you're eating lots of sugar, sweets, and salts." A nine year old boy had a broader interpretation of some of the information on the label. He said "percentage daily value are based on a 2000 calorie diet for daily values…higher or lower depending on your calorie needs." When asked to describe what the world 'healthy' meant to him, he had said "never has too little food, always has about as much as you should."

Theme 2: Children's interpretations of the information on the nutrition label coincide with their personal health experiences or frames of reference

How children described information on the nutrition label coincided with own experiences regarding those nutrients or ingredients. For instance, when asked what she noticed first on the label, a 10 year old girl said "I noticed the ingredients…because usually if I look at the nutrition facts, I look at the ingredients first…because sometimes if I'm sharing it with people and I want to make sure that they're not allergic." Elsewhere in the interview, this same participant shared her experience regarding food allergies:

> One time it happened to one of my friends…they couldn't have peanuts, and so they told the person that my friend couldn't have peanuts and the guy said 'no, no, it doesn't have peanuts in it' but it was really made in a peanut factory so there was like peanut stuff in it, and he got sick after he ate it.

Other children described the nutrients or ingredients in the ice cream based on their own frames of reference. For instance, when asked to describe the word carbohydrates on the label, one nine year old girl said that this meant the ice cream "comes in a box." She said she thought this was the case because "sometimes my mom says when like I'm eating something that came from a box, like spaghetti, she says you need to eat your carbohydrate." One 10 year old boy said carbohydrates listed on the label referred to "like all the grains," protein was "like meat and stuff," and fat meant "like-there's a lot of food." An eight year old boy said "protein is like bread and um, chicken, meat. That's all I can think of." An eight year old girl said the carbohydrates on the label were "like dry food like pretzels. I forget. I think they're like pretzels and they're like things with salt. And they're kind of like dry." When asked, *So if this food has carbohydrates, what does that mean*? she said "Then it is a little bit hard. It's not like totally soft."

Communicative Health Literacy

Children cited the following as their sources of health information: parents (n=24; 83%); health class (n=13; 45%); the doctor (n=11; 38%); school (n=9; 31%); other family members (n=8; 28%); food labels (n=8; 28%); and teachers (n=7; 24%). The following sources were mentioned by five participants (≤17%) or less: books, cafeteria, computer, dentist, friends, grocery store, internet, magazines, news, Scholastic articles, and TV. However, we did not notice many differences in how children conceptualized health based on where they said they extracted health information from, whether they extracted health information from few or many sources, or if they said it was "easy" or "hard" to understand the information these sources gave them. Rather, the aspects of communicative health literacy that were more relevant to children's conceptualizations are summarized below.

Theme 1: Health information children extract align with their conceptualizations of health

There were links between the health information that children said they learn from various sources and their own conceptualizations of health. For instance, one eight year old girl said she learns from her doctor that she should "eat five fruits and vegetables every day and its bad if you eat lots of junk food." Her parents say she should not "eat too much junk food and that's all." When asked how she decides which health information she pays attention to, she said "I kinda combine it, and then I listen to every single thing that they say." In comparison, when asked to describe what the world 'healthy' meant to her, this same participant said "healthy means when a person is eating like vegetables and fruits and not a lot of junk…when you're fat, it means you're eating too much junk food and junk food is bad for you." A nine year old boy said his mom is "always saying 'oh this has too many calories in it', and 'oh this is unhealthy, oh this is healthy, you shouldn't eat too much of this, you are going to eat this every week'." He also learns from health class "about calories and what is unhealthy and what is healthy." He learns from his aunt to "check the back before you get it…see what it has in it…'oh this, it has too many calories'." When asked how he decides which health information to pay attention to, he said "well I kind of pay attention to everything, because I do not want to be a very unhealthy person when I grow up." When asked to describe what the word 'healthy' meant to him, this same participant said healthy foods "don't have too many calories in them or anything." An eight year old boy said his parents told him that "people that eat lots of sweets get overweight." When asked to describe a 'healthy body', this same participant said "they're not fat or overweight."

In contrast, some children who reported receiving broader health information from their sources also seemed to have broader conceptualizations of health themselves. One 11 year old girl said that she learns from health class "information about foods, amounts of foods, different

types of food that you should eat." In her response to what the word 'healthy' meant to her, this same participant said the "right food is a rainbow. So like um eating lots of fruits and vegetables and the right types of carbohydrates and stuff like that...like purple foods, green foods, brownish foods like breads and stuff." An 11 year old girl said she learned from health class that "if a tiny person eats too much food, like they eat as much as a really tall person then that wouldn't be healthy…'cause they need enough to like help sustain a healthy lifestyle. Not too much, not too little." When asked to describe what the word 'healthy' meant to her, this same participant said:

> Balance. Like it depends on who you are. Like if you're super tall and like you exercise a lot more than other people, you need to have like more food so you can develop. But a really tiny person that doesn't need a lot of food and doesn't exercise that much, they don't really need a lot of food if they don't exercise that much and they're really tiny.

An eight year old girl described health information she asked her doctor about:

> …most of my friends are skinnier than me, and only me and two sisters that I know are like bigger. I asked about that when I went to the doctor and she says that everyone is made differently.

When asked to describe what the word healthy meant to her, this same participant said "there are different kinds of healthy...like bodies...because sometimes people are skinny and they're healthy and sometimes people are bigger and they're still healthy."

Theme 2: Health information children apply in their own lives aligns with their conceptualizations of health

They way children described applying the health information they receive also seemed to have similarities to their conceptualizations of health. For instance, when asked if she uses the health information she gets, one 11 year old girl said "yeah…I'm careful of what I eat." When

asked what the word ‘unhealthy’ meant to her, this same participant said “you just eat randomly, don't watch what you're eating.” Another 11 year girl provided an example of how she makes use of the health information she receives by looking for ‘good’ or ‘bad’ amounts:

> …if I’m like shopping with my mom and she’s like ‘go buy cereal for yourself,’ I won’t get things like Cinnamon Toast Crunch cause that is like loaded with sugar. I’m not allowed to eat things like Cocoa Puffs and all the chocolate stuff is disgusting, so usually I look to see how much sugar there is in it and how much fat there is in it and to see if it’s a good amount or a bad amount.”

When asked to describe what the word ‘healthy’ meant to her, this same participant said “you don’t have too little of something or too much of something. It’s at the right area of like good.” When asked how she uses the health information she receives, another 11 year old girl said “I definitely watch what I eat. I do seven and a half hours of swimming each week. So that’s a lot of exercise.” When asked what the word ‘healthy’ meant to her, this same participant said “like eating different foods in moderation I guess and making sure that you get enough exercise.” An 11 year old boy described not only how he uses the health information he receives, but how he encourages others to do so as well: “like sometimes I ride my bike or go outside and play and exercise. Sometimes I give them like an example of how to do it…like they could go ride their bike or go outside and play for a little bit...like my own family or my cousins.” This same participant said that the word ‘healthy’ meant to “go outside, play, exercise, you know, all that...ride safely, if you ride anything.” When asked to draw a picture of a boy doing something healthy, this participant described how he drew “three kids riding a bike, a scooter, a little baby car, and skateboard.” He said he decided to draw this “because it’s one of the ways to get healthy and get fit…outdoors, out there, outdoor fun.”

Critical Health Literacy

Theme 1: Children tend to believe the health information they receive when it matches their own health experiences or conceptualizations

Children were more likely to believe health information that that coincided with their own experiences or conceptualizations of health. For instance, when asked how she decides if the health information she receives is correct, one nine year old girl reflected on how following her parents' advice led to her achieving a desirable outcome: "because I do what (my parents) tell me and I don't get, like, overweight," Another nine year old girl described how her teacher says "not to eat too much candy." She believes it because "like I follow it and it's true" (though she did not clarify what was true about it). An 11 year old girl said she makes sure that the health information she receives is "logical. I mean, 'cause I know enough about it to think like 'oh, wait, that doesn't make sense' or 'OK. I understand that. It makes sense'." The 10 year old girl described earlier (whose friend with the peanut allergy bought the juice that was made in a peanut factory) explained how based on this negative experience, she does not always trust sales people because "sometimes, the sales people just tell you things about your food that aren't true because they just want you to buy them. They just want the money. They don't really care about who you are." Another eight year old girl described how she believes it is true that there is a relationship between what you eat and your body size based on her observation:

> …because a girl in my class, I mean, yea, she is not skinny, but not like fat. She's sort of like that (shows size with her arms). Um, she's not as skinny as me and for her lunch, she has chips and juice and all these unhealthy stuff…and all the unhealthy stuff has sugar. So, I sort of know it's true.

When asked to describe what the word 'unhealthy' meant to her, this same participant also said "if you eat a lot of unhealthy stuff…well you might be a little chubbier."

Theme 2: There is a relationship between how actively children participate in their own health decisions and their conceptualizations of health

When asked *do you make decisions about your own health?*, only three of the 29 children (10%) said that they do not make their own health decisions (their parents make decisions for them); 26 of the 29 children (90%) said they do make their own health decisions or that they make decisions with their families. Though there were not distinct differences in conceptualizations of health between the children who responded "no" to this question and the children who responded "yes," overall, the children who appeared to more *actively* participate in making decisions about their own health (e.g. what to eat, what foods to purchase, when to participate in physical activity, etc.) had broader conceptualizations of health in comparison to children did not as actively participate in these decisions.

For instance, one 11 year old girl described how she makes decisions about her own health: "I think to myself, like especially when we have the school lunches, 'this is probably not healthy, so I'm not going to like eat all of it'." She also explained what she does when she encounters varying health information: "I kind of sort through it myself…try to find other sources to see…and then if there's more sources supporting one answer than another." When asked what someone does to be 'unhealthy', this same participant took the opportunity to clarify that:

> Nobody actually tries to be unhealthy...because like everybody wants to be healthy because they want to keep their body in good shape and intact and stuff…maybe like even though they don't want to be unhealthy they never really get around to doing all the

> healthy things so they end up doing unhealthy things too because they're not really considering everything they do…um maybe they think the unhealthy things are healthy because sometimes different like fast food places have ads on TV saying that they are healthy and stuff and also maybe like all the friends were like 'oh that's healthy' or something.

Another 11 year old girl described how she makes health decisions on her own and with her family:

> My family gets together and we decide what we're gonna eat for the next week and if I'm sick, my mom will be like 'you can go downstairs and watch TV or go outside. You do what you want to do.' So then I'll be like 'let's see, which one would be better for me?' and then I say 'I'm going to lay down or I'm going to go sit outside and read a book rather than going to watch TV'…at a sleepover, they'll be like 'let's stay up till 5 o'clock in the morning,' and if I have like a synchronized swimming meet the next day, I'll be like 'you know what? I'm going to go to bed early 'cause I need my energy. It's not good to stay up too late.'

When asked to describe what the word 'healthy' meant to her, this same participant spoke about factors beyond food and activity choices:

> Well it means eating good foods that won't make you sick or and eating different foods in moderation… uh reading a book is healthy…cause unhealthy and healthy doesn't just mean what's good in exercise and food, it's also just what's good and bad for you...like holding things that are way too heavy on your back for a long amount of a time; like a heavy backpack is unhealthy for you and you could hurt your body….something that could hurt you or something like that.

Another nine year old girl talked about how she participates in her own health decisions:

> When I go to the grocery store and other places to get food…my parents usually depend on me to pick out stuff for me and my sister. My sister just like hangs out with my parents…they push the cart and then I'm just like picking out stuff to have for dinner and lunch, and they depend on me to pick out some good.

When asked to describe what a 'healthy body' looks like, this same participant highlighted that the answer to this question was not straightforward:

> I don't really know how to explain healthy bodies. There's many different ways that you can be healthy, like have a healthy body…sometimes if you eat a lot of junk food and stuff and you get kind of overweighted, like something like that, that's not really a healthy body. But even if you are overweighted and you eat a lot of healthy foods that's a healthy body....like it depends on what you eat, that's a healthy body.

In contrast to children who more actively participate in their own health decisions, when asked if he makes his own health decisions, one nine year old boy said "No no" and that just his parents make decisions about his health. When asked how he decides if the health information he receives is correct, he said he just listens to everything his teacher and parents tell him because they are "smart." When asked to describe the word 'unhealthy' meant to him, this same participant had a more simplistic response that alluded to the direct relationship between health behaviors and body size: "you don't go outside…because if you don't go outside, you're going to get like really fat just sitting there." Similarly, when asked to draw a picture of a boy 'doing something unhealthy', this boy described his drawing as "a kid that's watching TV while eating cake…'cause they're going to get fat." When asked who makes decisions regarding her health, another eight year old girl said "Um, my parents. Sometimes me because sometimes I watch too

much TV." When asked what the word 'unhealthy' meant to her, this same participant also suggested the narrower, direct relationship between food, body size, and health: "you eat junk food a lot and not really vegetables and fruits a lot of the time, so you may get fat…'cause when you're healthy you're usually not fat, and not skinny." When asked why being fat is unhealthy, she said "because when you're fat, it means you're eating too much junk food and junk food is bad for you. And if you eat too much junk food you'll get really really really fat." She also said that she thinks she is healthy "because I'm not fat, or skinny."

Discussion

To our knowledge, this is one of the first studies to empirically examine children's functional, communicative, *and* critical health literacy, let alone to explore the relationship between these constructs and children's conceptualizations of health, healthy bodies, and health practices. In many ways, the findings revealed that health literacy had some bearing on the way children came to "know" health information. With regards to functional health literacy, it appeared that making *meaning* of written health information was more relevant to the way children conceptualized health than their 'factual' understandings of the information (e.g., identifying how much sugar was in the food). With regards to communicative health literacy, it seemed that more than where and how many sources they extract health information from, *what* information children extracted – and how they applied this information to their own lives- was more pertinent to their conceptualizations of health. It was interesting to note that though all of the children in the sample attended the same school, ate in the same cafeteria, and had exposure to health class, they reported learning different health information from these sources (if at all). Finally, an examination of children's critical health literacy revealed that children who played

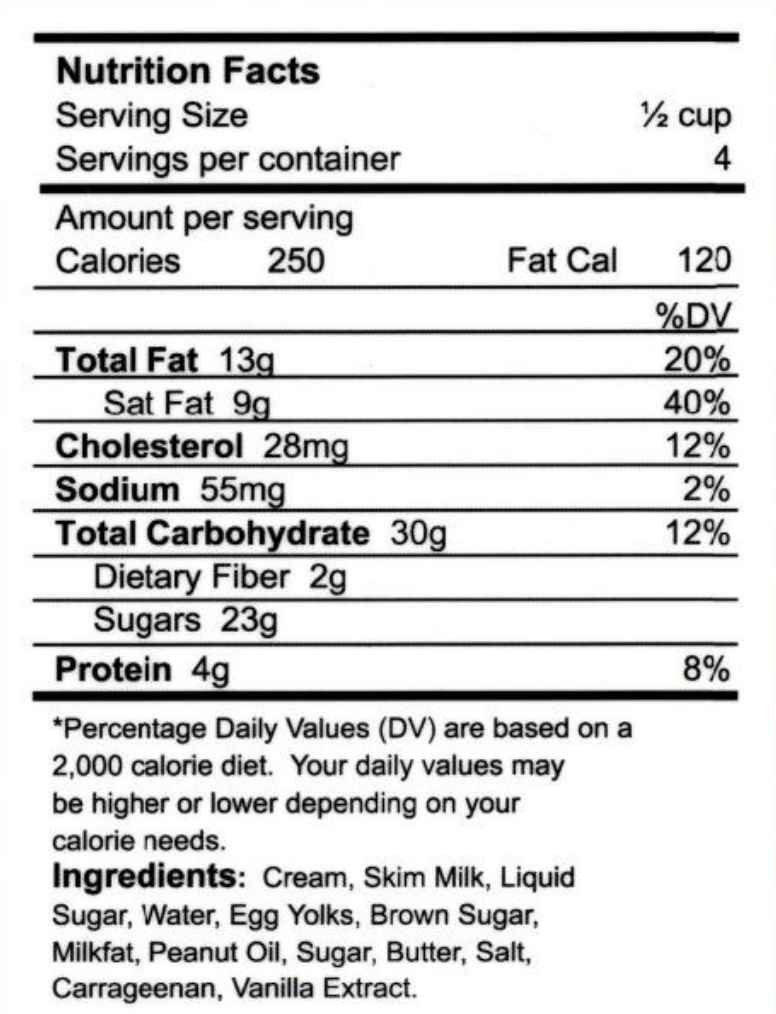
more active roles in their own health decisions also had broader concepts of health when compared to children who seemed to play a less active role.

Study findings can be applied towards developing health literacy and communication skills of children and those in their social networks (e.g., health practitioners, teachers, parents). As Rudd (2015) suggests, an understanding of health literacy, requires attention to individuals' embeddedness within multiple layers of physical, social, and political systems. Thus individual-level health promotion programs and interventions must co-occur with broader efforts. A focus on larger enabling or constraining structures is required to ensure children: 1) can make accurate and meaningful connections between the health information they encounter and their own lives; 2) are equipped with the appropriate tools to extract and apply accurate and meaningful health information to their own lives; and, 3) are empowered to more critically examine the bias in health communications and actively participate in their own health decisions.

Due to the nature of the data collected, we were not able to justifiably assign each child a health literacy score or quantify the amount of children whose conceptualizations of health aligned (or contradicted) with certain aspects of health literacy. However, evaluating health literacy constructs qualitatively allowed the children to "speak" for themselves. We were able to capture nuances and collect rich contextual data in order to gain a deeper understanding of the various ways children interact with the health information they encounter. Though outside the feasibility of this project, future studies may also consider collecting data regarding health literacy and/or communication skills from other individuals in children's social networks (e.g., health practitioners, teachers, parents) to gain an even broader perspective of how health literacy is related to children's conceptualizations of health, healthy bodies, and health practices. Finally, we cannot conclude whether it is aspects of children's health literacy that help shape their

conceptualizations of health *or* if it is children's conceptualizations and experiences of health that influence how they interpret, communicate, critically analyze, and apply health information. Moreover, there may be other individual, social, or environmental level variables that influence *both* children's conceptualizations of health as well as their health literacy. Further research is warranted to explore the directionality of these relationships.

Figure 4.1: Nutritional Label



Nutrition Facts

Serving Size	½ cup
Servings per container	4

Amount per serving

Calories	250	Fat Cal	120
			%DV
Total Fat	13g		20%
Sat Fat	9g		40%
Cholesterol	28mg		12%
Sodium	55mg		2%
Total Carbohydrate	30g		12%
Dietary Fiber	2g		
Sugars	23g		
Protein	4g		8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Table 4.1: Health Literacy Interview Guide

Section	Construct Addressed	Interview Questions
1. Functional Health Literacy	Reading and writing skills	(Show the nutrition label). *Do you know what this is? What is it?*
	Reading and writing skills	*What did you notice first on here?*
	Reading and writing skills	*Can you point to the words you understand? Can you tell me what they mean?*
	Reading and writing skills	*Can you find the word sugar? Can you tell me how much sugar is in this food?*
	Reading and writing skills	*Let's pretend you are allergic to peanuts. WHERE on this label would you LOOK to see if you could eat this ice cream? Could you eat this ice cream?*
2. Communicative Health Literacy	Extract information	*Where do you get information about health from?* (Ask the following after participant provides answers) *Anyone else or anywhere else*?
	Extract information	*What information about health do you get from* _____ (each source)?
	Extract information	*When you get information about health from different people or places, how do you decide which information to pay attention to?*
	Derive meaning from different forms of communication	*Is it easy or hard to understand the health information you get from* _____ (each source)*?* (Based on answer, ask the following for each source mentioned by the participant) *What makes it hard/easy to understand?*
	Apply new information to changing circumstances	*Do you use the health information you get?* (If yes) *How do you use it?*
3. Critical Health Literacy	Critically analyze information	*Are there times when the information you get about health is different depending on where or who you get it from* (If yes) *Can you give me an example?* (After participant responds, ask the following) *Any other examples?*
	Critically analyze information	*How do you decide if the health information you get is correct?*
	Using information to exert greater control over life events and situations	*Do <u>you</u> make decisions about your <u>own</u> health?* (If yes) *Can you give me an example?* (After participant responds, ask the following) *Any other examples?*

Table 4.2: Sample codes and operational definitions from final coding dictionary

Domain	Code	Operational Definition
Conceptualizations of Health	Fruits and veggies	Reference to fruits and vegetables in description of 'healthy' or 'unhealthy'
	Unhealthy foods are…	Description of what unhealthy foods are in response to what is 'healthy' or 'unhealthy'
Conceptualizations of Healthy Bodies	Fat	Reference to 'fat' when describing body size
	Different sizes	Reference to idea that bodies come in different sizes
Conceptualizations of Health Practices	TV	Reference to watching TV when describing healthy or unhealthy practices
	Physical activity	Reference to physical activity when describing healthy or unhealthy practices
Functional Health Literacy	What was first noticed on the label	Description of what participant notices first on the nutrition label
	Sugar content of food	Response to how much sugar is in the food
Communicative Health Literacy	Extract parents	Reference to extracting health information from parents
	Understand Internet	Reference to understanding health information obtained from the internet
Critical Health Literacy	Trust	Reference to trusting a source of health information
	Make own decisions about health	Reference to making own decisions regarding health

CHAPTER 5: DISCUSSION

There is a need for a deeper understanding of how children conceive health, healthy bodies and health practices as well as the factors that shape these conceptions.

To address this knowledge gap, this dissertation study was guided by a poststructuralist framework and utilized qualitative methodology to explore (1) children's conceptualizations of health, healthy bodies, and health practices; (2) how the dominant obesity discourse compares to these conceptualizations; and (3) how children's functional, communicative, and critical health literacy compare to these conceptualizations.

Study 1

Manuscript 1 examined children's conceptualizations of health, healthy bodies, and health practices as well as the association between the dominant obesity discourse and these conceptualizations. Findings suggest that while the dominant obesity discourse did play a role in influencing children's conceptualizations, children's subjectivities were influenced by oppositional or alternative discourses, as well.

Dominant Obesity Discourse

Children's conceptualizations of health, healthy bodies, and health practices did at times reflect arguments within the dominant obesity discourse i.e., the assumption that weight and disease are related in a linear fashion and an emphasis on personal responsibility for "healthy lifestyle choices" and the maintenance of "healthy weights" (Tylka et al., 2014)). Still, in certain cases, children interpreted and communicated these arguments through their own lenses and ways of "knowing." This was most apparent when children were describing *why* it was unhealthy to be the 'wrong' weight or body size. Though many children endorsed this belief, very few said that the negative consequences of being the "wrong" weight had to do with health outcomes.

Rather, it seemed that when children were asked to consider why it was unhealthy to be the 'wrong' size or weight, they seemed to rely on explanations that were generated from their own lived experiences. For instance, they talked about negative consequences in terms of impediments to playing sports and running fast. One explanation for this may be that children are starting to learn from their primary and proximal sources of health information (e.g., parents, teachers, books, media, etc.) that weight and health are related in a negative, linear fashion. However, these sources may not describe the *mechanisms* through which weight causes ill health. Therefore, children instead rely on their own cognitions when asked to reflect on *why* this relationship must be true.

Children alluded to the idea that people should be held personally responsible for their lifestyle choices by emphasizing the importance of particular diet and physical activity regimens. It was interesting to note that children's ideas of 'healthy' foods and beverages seemed narrower and more limited than their descriptions of 'unhealthy' foods and beverages. Often, 'healthy' foods included fruits and vegetables while 'unhealthy' foods included a much greater variety of items. It is possible that children are taught that fruits and vegetables are healthy but are not directly taught that other foods –or even dishes prepared with fruits and vegetables *in* them- are healthy. Children also categorized foods as dichotomously 'healthy' or 'unhealthy'. One possible explanation for this is that they felt putting labels on health practices made the concept of 'health' more 'tangible'. Yet, categorizing lifestyle decisions this way could actually make 'health' more *in*tangible or harder to attain for individuals who, for a variety of reasons, are not able to consume a 'healthy' diet or consume foods and beverages outside of the 'healthy' category. Seeing as how children primarily included raw, unprepared dishes in their descriptions of a 'healthy' diet, it did not seem that this narrow definition reflected their own – let alone

others' – dietary practices. Children also emphasized the value of performing certain types and amounts of physical activity (e.g., walking or running a certain amount every day) and often regarded those who did not participate in these activities as 'lazy,' 'inactive' bodies.

It is, indeed, important to have a balanced diet and engage in physical activity. Yet, children rarely accounted for individual, social, or structural factors that might impede someone from eating or exercising in healthy ways, amounts, and environments. It is likely that the reason children emphasize taking personal responsibility for lifestyle decisions –as well as the need to categorize these lifestyle decisions as either 'healthy' or 'unhealthy'- is informed by larger discourses around them. This idea of personal responsibility is not limited to the dominant obesity discourse, but rather, prevalent in explanations regarding health and bodies, especially in the media (Rail, 2009; Saguy & Almeling, 2008).

Children's conceptualizations of health, healthy bodies, and health practices also implied that it is one's personal responsibility to maintain a healthy weight (e.g., having the 'wrong' weight means you ate too much junk food, did not get the proper nutrients, etc.) when in fact body size and weight can be influenced by genetic, economic, social, cultural factors (e.g., Schwartz, 2012; Silventoinen, Rokholm, Kaprio, & Sørensen, 2010; Sumithran et al., 2011). While children's narratives did communicate elements within the dominant obesity discourse, in very rare instances did they mention the word 'obesity' itself in describing health or bodies. In some instances, children found ways to talk "around weight" (e.g., illustrating body by showing it with their arms instead of describing it in words). Thus, along with being influenced by the dominant obesity discourse, children are also aware that talking about weight (and especially overweight) is not always socially acceptable. This in itself suggests the stigma associated with

being the ‘wrong’ weight or size (i.e., it is undesirable and therefore ‘mean’ or inappropriate to call someone fat or overweight).

Oppositional or Alternative Discourses

Though children’s conceptualizations of health did seem to be informed by the dominant obesity discourse, there were instances in which their conceptualizations were oppositional to it as well. For instance, a couple of children suggested that you could be healthy even if your body was not the ‘right’ size (and that it depended more on maintaining a healthy lifestyle). Some children even specified factors other than diet or activity choices (e.g., medicine you’re on) that could affect your body size and external variables (e.g., TV, friends) that could impact one’s lifestyle decisions. Though less frequent, there were some instances in which alternative discourses about health that extended beyond diet, physical activity, and body size emerged in children’s conceptualizations of health (e.g., having fun, going to school, reading a book). One explanation for why and when children’s conceptualizations included factors that opposed or were beyond the dominant obesity discourse may be that these children have themselves had experiences which challenged the discourse (e.g., being ‘bigger’ than their friends and having the doctor validate that this was OK because everyone is ‘different’). Additionally, children may have heard or learned of these oppositional or alternative discourses in their social environments. Overall, certain dimensions of health (e.g., mental health) still seemed to be missing from children’s conceptualizations of health, healthy bodies, and health practices.

Implications

Though there are dominant discourses around health and bodies, children are also influenced by oppositional or alternative discourses through their family, social, and school environments as well as through their own experiences. Therefore, children do not always

interpret and internalize information regarding health and bodies through the same lenses. Furthermore, the children in the study sample are in a specific developmental period –middle childhood– in which they and the other key players in their lives are negotiating a complex and fast-changing world (Borland, Laybourn, Hill, & Brown, 1998). In middle childhood, children are also beginning to classify, serialize, predict, and generalize information they receive regarding health and bodies and are increasingly aware of social, cultural, and physical differences that influence health and bodies (Berk, 2003; McDevitt & Ormrod, 2002; Salkind, 2004; Scales, Sesma & Bolstrom, 2004). Therefore, children's negotiations of ideas regarding health and bodies may also be fluid since these ideas themselves are often changing, and at times, contradictory to one another. Still, further investigation is required to explore when and why do children take up the dominant obesity discourse, oppose it, or take up alternative discourses altogether. Specifically, we should investigate if there are systematic differences that determine what information children attend to in the environments they navigate. Findings from studies such as this one can inform efforts to raise awareness about the problematic effects of the dominant obesity discourse and promote alternative discourses which embrace a more holistic view regarding health.

Study 2

Manuscript 2 explored how children's functional, communicative, and critical health literacy compare to their conceptualizations of health, healthy bodies, and health practices. To our knowledge, this is one of the first studies to empirically examine children's functional, communicative, *and* critical health literacy, let alone to explore the relationship between these constructs and children's conceptualizations of health, healthy bodies, and health practices. In many ways, the findings revealed that health literacy had some bearing on the way children came

to “know” health information. It is also possible that children’s conceptualizations of health themselves influence how they understand, extract, and apply health information (i.e., their health literacy).

Relationship between Conceptualizations of Health and Health Literacy

With regards to functional health literacy, children’s interpretations of the information on the nutrition label appeared to align with their conceptualizations of health. Specifically, some children placed an emphasis on the same things on the label (e.g., sugar) as they mentioned in their descriptions of ‘health’ or ‘unhealthy’ (e.g., unhealthy means eating lots of sugar, sweets). Comparing children’s conceptualizations of health against their functional health literacy revealed notable patterns, yet it is not clear from children’s responses whether it is their interpretation of written health information that influences their conceptualizations of health or whether it is their conceptualizations of health (e.g., perceptions regarding which nutrients that you should consume, avoid) that influences how children interpret the health information that is presented to them (e.g., noticing first the nutrients they feel they should avoid/consume). Children’s interpretations of the information on the nutrition label also seemed to coincide with their own health experiences or frames of reference. This finding suggests that children’s subjective engagement with health information (e.g., spaghetti is a carbohydrate and it comes in a box) serve as lenses through which they interact with that health information, even when that health information is presented in a different form (e.g., this ice cream has carbohydrates, so it too must come in a box).

With regards to communicative health literacy, children reported learning health information from a variety of sources. Most often, children reported receiving health information from their parents or school. Less often, children mentioned learning health information from

sources such as friends, TV, and other media. It would be worth exploring objectively whether children actually do not frequently receive health information from the sources they cited less often, or if they are just inattentive to the health information communicated from these sources. Overall, the sources that children said they extracted health information from, the number of sources of health information they had, or whether they said it was easy or hard to understand the health information they received did not seem to influence children's conceptualizations of health. There were, however, patterns between the health information that children extracted – as well as how they applied this health information to their own lives – and their conceptualizations of health. This speaks to the notion that health discourses that children have access to and how children apply these discourses in their own lives can influence their cognitions of health and bodies. Though all of the children in the sample attended the same school and had exposure to the same cafeteria, health class, physical education class, and perhaps classroom teachers, whether or not children reported learning health information from these sources – and what health information they learned – varied across the sample. Again, this could be due to the differences in health discourses that children are exposed to through their various personal and social environments as well as their individualized meaning making from the health information they are exposed to.

Finally, an examination of children's critical health literacy revealed that children who played more active rather than passive roles in their own health decisions had broader, more holistic concepts of health that either extended beyond or were oppositional to dominant ideas regarding health and bodies. One possible explanation for this is that children who take more active roles in their own health decisions have an additional, personal 'lens' through which to interpret, evaluate, and apply health information as opposed to interpreting, evaluating, and

applying this health information through the lenses of *other* individuals (e.g., parents, other family members) who make health decisions for them. These findings may be an extension of Freire, Piaget, and Vygotsky's arguments (Borzekowski, 2009) that literacy can allow children to achieve ownership and empowerment over their own lives and increase ability to improve health on their own.

Implications

From a poststructuralist perspective, children create their subjectivities through the discourses they have access to (Rail, 2002; Weedon, 1997; Wright, 2001). Applied in the context of health literacy, Rudd (2015) suggests that we should consider individuals within multiple layers of physical, social, and political systems. Specifically, she argues that we must investigate which definitions and measures of health literacy acknowledge the interactions among individuals, health information, and norms, policies, and practices within institutions and choose a definition that shifts the attention towards supporting access to information and the active engagement of people (Rudd, 2015). Therefore, instead of applying the findings from studies such as this exclusively to individual-level health promotion programs and interventions, we need to focus on larger enabling or constraining structures (e.g., families, schools, policies, health institutions). Such efforts will facilitate the creation of environments in which children: can make accurate and meaningful connections between the health information they encounter and their own lives; are equipped with the appropriate tools to extract and apply accurate and meaningful health information to their own lives; and are empowered to more critically examine the bias in health communications and actively participate in their own health decisions. Though beyond the feasibility of this research, future studies might consider collecting data regarding health literacy and/or communication skills from other individuals in children's social networks

(e.g., health practitioners, teachers, parents) to gain an even broader perspective of how health literacy is related to children's conceptualizations of health, healthy bodies, and health practices.

Applications for the Field

The findings from this dissertation study can help inform the development of health recommendations, policies, and curricula that promote health, healthy bodies, and health practices in a broader, more holistic, less weight-focused way. Having a better understanding of how children conceptualize health –as well as the factors that shape these conceptualizations– can provide a starting point for these efforts. Public health practitioners should acknowledge that children are inevitably influenced by various discourses regarding health and bodies, and seize the opportunity to influence their developing understandings through the power of lived experiences and ways of knowing (Wright, 2009).

Health at Every Size (HAES) is one model for designing, policies, programs and practices that promote health in a more holistic way. The HAES model offers a broader perspective on health and well-being that does not focus on weight (Bacon & Aphramor, 2011; Gregg & O'Hara, 2007; Robison & Carrier, 2004; Shelley, O'Hara, & Gregg, 2010; Tylka et al., 2014). At the individual level, applying the HAES approach can include engaging in behaviors that are sustainable and that support children's well being (e.g., finding playful ways to move that are not tied to weight loss, looking for direct ways to improve health that do not require a thinner body). At the policy level, incorporating a HAES philosophy may mean providing environments that support the well-being of children of all sizes (e.g., recess for all ages, end to weight discrimination in schools). In the health care setting, incorporating HAES could include providing health recommendations and interventions without discrimination or bias (e.g.,

assisting patients in developing long-term health practices rather than pursuing weight loss) (Tylka et al., 2014).

So far, randomized controlled trials that have compared HAES programs to conventional obesity treatment have demonstrated that HAES is associated with improvements in physiological measures, health behaviors, and psychosocial outcomes (Bacon & Aphramor, 2011). However, these trials have only included adult women as participants. There have been a few children's health promotion programs that incorporated principles of body acceptance and addressed body dissatisfaction (Kater, Rohwer, & Londre, 2002; Leibman, 2005; Lobel, 1996). Though these programs demonstrated positive effects on children's well-being, including reducing body size discrimination, engaging in healthy lifestyle behaviors, improving self-image, and being able to think critically about media messages regarding appearance, only one of them used HAES as the specific framework. Furthermore, these programs predominantly focused on the health and behaviors of individual children. Researchers and practitioners should think critically about how best to apply a HAES approach towards children's health promotion that acknowledges the structural factors that shape children's health and wellbeing and are not solely focused on the individual child. Utilizing knowledge regarding how children conceptualize health, healthy bodies, and health practices – as well as how their conceptualizations compare to the dominant obesity discourse and health literacy – in an application of HAES can make for even stronger, more tailored recommendations, policies, and curricula.

Strengths and Limitations

This study had a variety of strengths. First, the study took a critical lens towards the dominant obesity discourse. This is important, considering the potential harms and inaccuracies within its assumptions. Second, the study was innovative in that it explored the role of health

literacy constructs in relation to children's conceptualizations of health, healthy bodies, and health practices. Limited health literacy research has been conducted with children, let alone in the context of critical obesity scholarship. Third, the study applied a poststructural framework, providing a sound theoretical grounding and unique lens through which to collect and interpret the data. Fourth, data quality was enhanced by a mixed methods approach to the data collection (e.g., drawings and open-ended questions) to elicit responses. This allowed children to express thoughts and ideas that may not be captured through quantitative measures. Encouraging the children to share their perspectives through their own voices – without prompting or constraining their responses– allowed for the collection of richer, less biased, and more contextualized data. Data quality was also increased because the researcher had an established relationship with the research site and general knowledge regarding: subjects taught in the classroom; food choices offered during the school day and Before and After Care (B&A); and facilitated physical activities during the school day and B&A. This information was helpful in being able to understand the context behind participants' responses when they made references to things like school and B&A.

The study had limitations as well. First, there is a limitation in generalizability since participants constituted a small, select sample of children from a specific school in the mid-Atlantic region. Though the school itself had a racially diverse student body (of the 614 students enrolled at the school in the 2013-2014 academic year, 31% were African American, 22% were White, 33% were Hispanic, and 7% were Asian), there was less racial diversity in sample itself. Though we did not formally collect demographic data (other than age and gender) from the participants, based on our observations, the sample was about 70% white. Future research can be conducted with children from similar or different demographic groups from other regions of the

country. Second, among the eight to 12 year old children in B&A, it is possible that the children who were eligible and agreed to participate in the study differed from those who were ineligible and did not agree to participate. To minimize this limitation, the study had liberal eligibility criteria and posed minimal burden to participants. Third, the children (participants) were considerably younger in age than the researcher (interviewer); therefore, the data could have been biased if the children felt as if they were being 'tested' and needed to provide the 'right' or socially desirable responses to interview questions. To reduce this possibility, the researcher used non-leading question prompts, reminded the children repeatedly that they were not being tested and that there are no "right" or "wrong" answers, and asked the participants to only provide their own thoughts and experiences. Fourth, since this was an exploratory study, the majority of the questions and tasks in the interview guides were developed and used for the first time. Though these questions and tasks were based on previous, similar studies, instrumentation could be a limitation if we were not able to capture the information we intended to collect. To minimize this limitation, pilot testing was performed prior to data collection. Also, children were asked follow-up or clarifying questions if they misunderstood a question or if they did not provide sufficient detail in their responses. Finally, though this poses a slight deviance from the poststructuralist approach, established qualitative analysis methods (e.g., uniform coding procedures, inter-rater reliability check) were used to mitigate the possibility of ambiguity in interpreting the data that was collected.

Appendix I: Methods

Study Overview

The study was informed by a poststructuralist approach and was guided by an overall research question: what are children's conceptualizations of health, healthy bodies, and health practices? As two exploratory sub-questions, the study also explored: 1.) how the dominant obesity discourse compares to these conceptualizations; and 2.) how functional, communicative, and critical health literacy compare to these conceptualizations. There is limited research which examines children's conceptualizations of health, healthy bodies, and health practices and the potential factors which may shape these conceptualizations. Thus, findings from this study can inform the development of recommendations, policies, and curricula which offer a broader perspective on health and well-being and do not focus on weight.

Conceptual Framework

Epistemology refers to how we as inquirers come to know the realities that we are trying to comprehend (Daly, 2007). There are two main epistemological approaches: objectivist and subjectivist. An objectivist epistemology is rooted in the belief that there is a concrete, knowable reality that exists independently of our thought processes. A subjectivist epistemology is rooted in the notion that all knowledge is constructed through a meaning-making process in the mind of the knower (2007). The research questions in this study are more closely in line with a subjectivist epistemology. The way in which children conceptualize health, healthy bodies, and health practices is not always the result of pure 'science.' Instead, these understandings are shaped by many factors, including personal experiences, opinions, and societal and environmental influences. Informed by subjectivist epistemology, this study adopted a poststructuralist approach, which allows for an understanding of subjectivity, or what influences and informs people's judgments about truth or reality, as 'decentered', or not dependent entirely on the individual (Rail, 2002; Weedon, 1997; Wright, 2001).

Overall Strategy and Rationale

This study employed qualitative methodology. Qualitative research methods allow for an in-depth exploration of participant beliefs, perceptions, and behaviors (Devers, 1999). Qualitative data collection allows for understanding of complex dynamics, including: 1.) internal processing of information in the context of needs, motivations, and pressures; and 2.) what potentially prompts particular behaviors (Ragin, Nagel, & White, 2004). These data are not easily accessible from a survey or questionnaire. Qualitative methodology allows children to "speak for" themselves (Becker, 1996), which is imperative when eliciting their own conceptualizations of health, healthy bodies, and health practices. In addition to interviews, children's conceptualizations of healthy and unhealthy practices were elicited through a drawing activity. Mahmood et al. (2012) posit that while interviews are an effective way to learn about an individual's thoughts, the information is constrained by the limits of language. Children tell their stories in multiple ways and attending to visual and verbal narratives together provides a richer understanding of experience (e.g., Einarsdottir et al., 2009). Combining conversation and arts provides rich data that is particularly relevant for researchers investigating how children interpret ideas regarding health (Gonzalez-Rivera & Bauermeister, 2007).

Study Sample

The sample consisted of 29 children between the ages of eight and 11 who were enrolled in a Before and After Care (B&A) program at a public elementary school located in the mid-Atlantic region. Creswell (2007) recommends that 20-30 interviews conducted over several visits to a research site are typically required to saturate categories underlying a research topic. Saturation entails bringing participants into the study until no new data appears to be generated; i.e., interviews are reflecting data replication or redundancy (Bowen, 2008; Miles & Huberman, 1994). In order to complete the number of interviews required for saturation, and also to ensure children in the study sample would understand the topics addressed during data collection, B&A staff suggested recruiting students between eight and 12 years of age (though we did not receive consent forms back from the few 12 year old children in the program). Eight-12 year old children comprise a specific developmental stage called "middle childhood" (Berk, 2003; Collins, 1984; McDevitt & Ormrod, 2002). Borland, Laybourn, Hill, and Brown (1998) conclude that:

> *Middle childhood is a period when children and the other key players in their lives negotiate an increasingly complex and fast-changing world…..with the marked physical dependency of early childhood over and the transitions to economic and other forms of autonomy still some way off, it is a time when children, parents and others have to manage a range of tensions and competing principles* (p. 173).

Although there is variation due to individual, cultural, socio-economic, and geographic differences, child development research identifies specific characteristics shared by most eight-to-12- year-olds. For instance, eight-12 year old children are: concrete thinkers, who can classify, serialize, predict, and generalize; increasingly aware of social, cultural, and physical differences; increasingly self-aware and self-critical; increasingly aware of their own appearance; and in or nearing puberty (Berk, 2003; McDevitt & Ormrod, 2002; Salkind, 2004; Scales, Sesma & Bolstrom, 2004). More than any other developmental period, early and middle childhood sets the stage for health literacy, self-discipline, the ability to make good decisions about risky situations, eating habits, and conflict negotiation (USDHHS, 2014). Therefore, middle childhood was a relevant and appropriate age period in a study which aimed to explore how children conceptualize health, healthy bodies, and health practices. More recent literature reveals that children are entering puberty earlier than in the past. Girls start puberty sometimes as young as seven or eight and boys as young as nine or 10 (Herman-Giddens et al., 2012). Therefore, it was possible that some children in the sample would already have entered puberty while some may have not. If the findings from this study revealed developmental differences between older and younger children within the sample, the analysis would have been bifurcated. However, this was not the case.

Children were recruited from a particular elementary school since the researcher had a positive, pre-existing relationship with the teachers, staff, and the principal at the school. She had conducted several site visits, spending time with, and observing, the students and staff during B&A hours. The researcher also spent 20+ hours volunteering for the ESOL program to further familiarize herself with the school, teachers, and to build rapport. Furthermore, this elementary school has a racially diverse student body: of the 614 students enrolled at the school in the 2013-2014 academic year, 31% were African American, 22% were White, 33% were Hispanic, and 7% were Asian. The B&A program takes place from 7 a.m. to 7:45 a.m. (before school starts) and 1:55 p.m. to 6 p.m. (after school ends). During B&A, children are provided snacks, do

homework, play games in the gymnasium or outside, and work on activities in the multipurpose room. Data collection was conducted during B&A only so as to not disrupt the normal school day schedule.

Recruitment and Consent Process

To ensure the school's investment and approval for this project, the school principal was contacted and a letter of support was acquired. The data collection procedures were also explained to the B&A coordinator. Prior to beginning data collection, all necessary materials, including interview scripts and consent forms, were be submitted to the Institutional Review Board at the University of Maryland College Park as well as the Prince George's County Board of Education. Upon receiving approval from both oversight boards, the B&A coordinator personally distributed parental consent forms to parents of all children in B&A who were between eight and 12 years of age at the time the consent forms were distributed. Parents were informed of a due date to return the consent form, and if they liked, they could sign it and return it to the B&A coordinator that same day. The form clearly indicated that the study was only for children between eight and 12 years of age. All consent forms included detailed information about the study procedures, risks, and benefits to participating. The parental consent forms discussed the purpose of the study and study procedures, including examples of tasks and questions that the children would respond to, and discussed how the data is kept confidential. The consent forms also provided information about the possible risks, benefits, compensation provided, and participants' right to withdraw from the study at any time. Parents were asked to return signed consent forms to the B&A coordinator. Up to the first 30 students whose parents/guardians returned a signed consent form would be invited to participate in the study. Upon receiving signed consent forms, the B&A coordinator informed the researcher via email and/or in-person meetings. The B&A coordinator received a total of 29 signed consent forms and all 29 children were invited to (and did) participate

Children were asked to provide assent prior to participating in the project (there were different assent forms for children younger than 12 years of age and children 12 and over). The child assent forms were written in language accessible to children in the study population. They described the purpose of the study and made clear to the children that they were not required to answer any questions they felt uncomfortable answering. The assent forms also explained that should participants want to stop and return to their normal B&A activities at any time, they could.

Participant Eligibility

To be eligible for the study, children must have met all of the following criteria: (1) were between the ages of eight and 12 (2) were enrolled in B&A (3) agreed to have the interviews audio-recorded (4) provide parental consent and verbal or signed assent.

Primary Data Collection Strategy

Phase 1: Children's conceptualizations of health, healthy bodies, and health practices

In the first phase of the project, one-on-one interviews were conducted with each child to elicit his/her conceptualizations of health, healthy bodies, and health practices. These interviews were conducted in a private location inside of the school, but away from the regular B&A activities. Children were asked to provide assent before each interview began. Each interview was audio-recorded and a two trained undergraduate students took turns serving as note-takers.

The undergraduate students were recruited through the College Park Scholars Global Public Health Program and were interviewed and trained by the researcher. The note-takers' main responsibilities were to capture body language and context that could not be captured on the audio-recording (e.g., making note of shrugs, nods, and head shakes; writing down what a participant said if she/he mumbled during a part of the interview). Since the participant's body type could influence his/her responses to the questions, the note-takers also made note of the participant's general body type (small, medium, or large build). The interview questions and tasks were adopted based on those asked in the pilot project as well as in previous studies in which researchers elicited children's ideas regarding health, healthy bodies, and health practices (e.g., Atencio, 2010; Burrows, Wright, & Jungerson-Smith, 2002; MacNeill & Rail, 2010; Wright, O'Flynn, & MacDonald, 2006). During the interview, an exploratory drawing activity was also facilitated to elicit children's conceptualizations of healthy practices (children were later asked to draw their conceptualizations of unhealthy practices during the Phase 2 interview). Each interview (including the drawing activity) lasted between 15 and 25 minutes. Interview transcripts were transcribed verbatim by the researcher and trained undergraduates. The drawings were scanned for data analysis purposes.

Phase 2: Children's functional, communicative, and critical health literacy

Children who completed Phase 1 of the project were invited to participate in a Phase 2 interview. Phase 2 interviews took place within two months of each child's Phase 1 interview. In this phase, one-on-one interviews were conducted with each child to evaluate his/her functional, communicative, and critical health literacy. These interviews were conducted in a quiet location inside of the school but away from the regular B&A activities. Children were asked to provide assent before each interview began. Each interview was audio-recorded and trained undergraduate students took turns serving as note-takers.

Thurs far, only a few researchers have attempted to develop scales which measure functional, communicative and critical health literacy (Chin & McCarthy, 2013; Ishikawa, Nomura, Sato, & Yano, 2008; Ishikawa, Takeuchi, &Yano; 2008). However, the study locations, age range of the samples, premises, and concepts measured in these studies varied significantly from those of interest in this dissertation project. Therefore, these scales could not simply be replicated or adapted. Rather, it was more appropriate to develop measures for functional, communicative, and critical health literacy that were suitable for children and reflected Nutbeam's definitions of each of these constructs. Chinn (2011) argues that qualitative measures of health literacy can focus on the detail of how people actually interact critically with health information in real-life situations. For this reason, and because this was an exploratory study, the health literacy items were primarily qualitative in nature.

Rather than develop a measure of functional health literacy from scratch, an existing tool that measures this construct among children was modified. Though there is no gold standard to evaluate functional health literacy, the Newest Vital Sign (NVS) is an evidence based screening tool for functional health literacy that extends beyond reading ability (Weis et al., 2005). The original NVS asks respondents to look at a nutritional label from an ice cream carton and answer a series of 6 questions (e.g., "If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?" "Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings. Is it safe for you to eat this ice cream?"). The NVS psychometrics include good internal consistency ($\alpha = 0.76$) and criterion validity ($r_p = 0.59$, $p = .001$) in a sample of adult primary-care patients. Recently, Driessnack et al. (2014) explored

the feasibility, utility, and validity of using the NVS in children between the ages of 7 and 12. They found that in a sample of 47 parent-child dyads, children were able to complete the NVS in the same time frame and with the same distribution of results and difficulty as the adults. However, both parents and children had difficulty with the question that required them to calculate percentages. One caution specific to this study was the mean NVS scores for both parents and children in this sample were above the normative NVS data for adults in Weis et al.'s original study, perhaps because data from the child-parent dyads was collected at a Metropolitan Science center. Thus, the results from this study cannot be generalizable to all populations. Aldoory et al. (personal communication, July 23, 2014) adapted the NVS by simplifying the language and reducing the scale from six to four items. When they administered this version to 2nd grade students in a Worcester County, Maryland elementary school, the children were still not able to understand the quantitative questions related to the ice cream label. Accordingly, in this dissertation study, participants were asked to look at the same nutrition label from the original NVS instrument, but were asked open-ended questions. Because there are currently no measures of communicative and critical health literacy that have been used with children, new qualitative measures were developed for these constructs.

Each interview lased between 15 and 25 minutes. For the purpose of data analysis, interview transcripts were transcribed verbatim by the researcher and trained undergraduates. The drawings were scanned for data analysis purposes.

Data Analysis Procedures

Coding Procedures

Prior to data collection, a draft coding dictionary was created, which included terms organized under six domains pertaining to each of the three types of conceptualizations (i.e., "health," "healthy bodies," and "health practices") and each of the three types of health literacy (i.e., "functional," "communicative," and "critical"). Many of these terms were selected based on responses children had provided during a pilot project. The codes in the coding dictionary were given operational definitions to guide the coding process. Once data collection was complete, based on an initial reading of all the drawings and transcripts, new codes that were not a part of the initial dictionary were added. With the coding dictionary open in Atlas.ti, transcripts were read and relevant codes were manually assigned to highlighted passages. Based predominantly on each child's verbal descriptions of what he/she drew, codes were also manually assigned to relevant drawn components (e.g., foods, activities, behaviors, places) and captions (e.g., word bubbles, labels) in each drawing. Once all the drawings and transcripts were coded, an inter-rater reliability check was conducted: two reviewers independently coded the same set of four drawings and four transcripts and a code-by-code comparison of the data was performed to ensure 90% agreement between the raters. Any additional codes that the two raters identified were also added to the coding dictionary. Transcripts and drawings were reviewed again, and as appropriate, re-coded using the final coding dictionary.

Manuscript 1

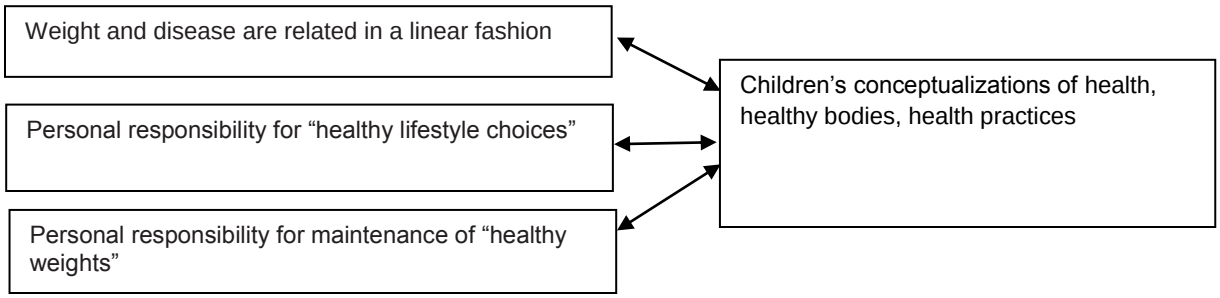
Once coding was completed, queries were run to search for narrative segments related to each of the three domains of conceptualizations ("health," "healthy bodies," and "health practices"). These coded segments were sorted according to domain in a separate document. Next, coded segments under each domain were consolidated and emergent themes addressing conceptualizations of health, healthy bodies, and health practices were generated. How

children's conceptualizations compared to the dominant obesity discourse were addressed in the Discussion.

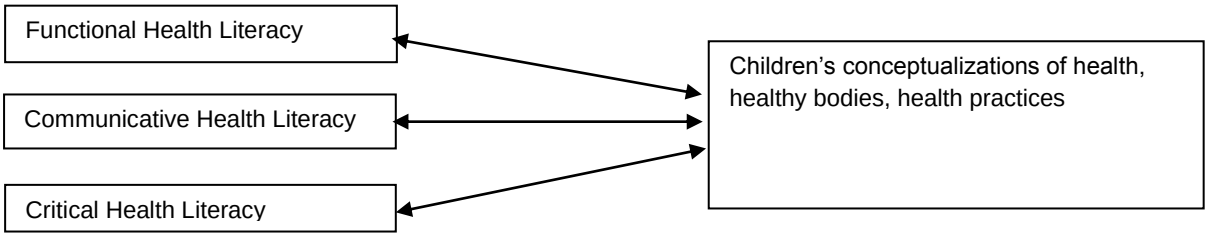
Manuscript 2

One coding was finalized, data analysis steps were performed individually for each child so as to allow for a comparison between each child's functional, communicative, and critical health literacy against his/her conceptualizations of health, healthy bodies, and health practices. First, queries were run to capture narrative segments related to the three health literacy domains for each child. Second, these coded segments were sorted according to health literacy domain in a separate document. Third, coded segments were consolidated to generate themes for each child's functional, communicative, and critical health literacy. Next, these three steps were repeated for each child's conceptualizations of health, healthy bodies and health practices. Finally, each child's functional, communicative, and critical health literacy was compared against his/her conceptualizations of health, healthy bodies and health practices. Once the individual level analysis was complete, we looked for commonalities and differences between participants' data to generate a set of emergent themes for the entire sample.

Appendix II: Conceptual Models



Model to be evaluated in sub-question 1: How does the dominant obesity discourse compare to children's conceptualizations of health, healthy bodies, and health practices?



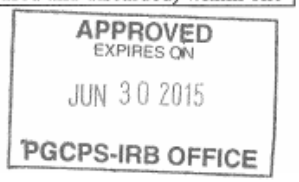
Model to be evaluated in sub-question 2: How do functional, communicative, and critical health literacy compare to children's conceptualizations of health, healthy bodies, and health practices?

Appendix III: Consent and Assent Forms

Initials _____ *Date* _____

Parent Consent Form

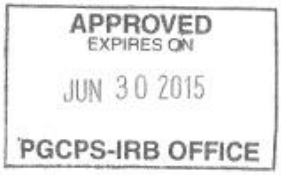
Project Title	**Children's Conceptualizations of Health, Healthy Bodies, and Health Practices**
Purpose of the Study	This research is being conducted by Krishna Bhagat at the University of Maryland, College Park. We are inviting your son/daughter to participate in this research project because he/she is **8 years of age (on or before April 1, 2015)** and participates in Before/After Care (BAC) at University Park Elementary School. We want to do this project so we can learn about your child's ideas of health and healthy bodies. We will use his/her answers to the questions to help us come up with messages about health and healthy bodies that are safe and helpful to him/her and other children.
Procedures	The procedures involve your son or daughter's participation in 2 one-on-one interviews with the researcher. The interviews will be conducted before or after school during a time that is convenient for your son/daughter and will not interfere with student activities. Each of the interviews will last about 20-25 minutes. Your son/daughter will be asked to draw picture of a girl or boy doing something 'healthy' and 'unhealthy.' Interviews will also include questions to answer (orally). Examples of questions are: 1.) What does the word 'healthy' mean to you? 2.) Would you say you do things that are healthy? Like what? 3.) Where do you learn information about health from? The information shared by your son or daughter during these interviews will be kept confidential. The conversations will be digitally recorded to allow the researcher to capture information in detail. These recordings will not be shared with the parents of the children participating in the study, as to protect the confidentiality of the children. Recordings will be destroyed within one year. To thank your child for participation in the study, we will host a celebration (with healthy snacks and drinks) at the end of the research study.
Potential Risks and Discomforts	There are no known risks to participating in this study. While we do not anticipate addressing any sensitive issues, if your son or daughter ever does feel uncomfortable answering any of the questions, he/she may refuse to answer or stop participating at any time.
Potential Benefits	There are no direct benefits to your child for participating in this study. Other possible benefits to your son/daughter include having the chance to explain his/her thoughts, feelings and ideas about health and healthy bodies, with the knowledge that his/her answers may be used to help create meaningful and enjoyable programs or campaigns that address these issues for children. We also hope that, in the future, other people might benefit from this study through improved understanding of how children perceive health and healthy bodies and where these perceptions come from. More specifically, we hope this research might be used to improve health care policies and programming that do not always reflect the complexities surrounding these issues.
Confidentiality	Any potential loss of confidentiality will be minimized because we are not collecting your son/daughter's personal information during the interviews. We will do our best to keep his/her personal information confidential. To help protect his/her confidentiality: (1) his/her name will not be included with any public presentation of the collected data; (2) a code will be placed on moderator notes and other collected data; and (3) only the researcher team will have access to identifying information. This research project involves making an recording of conversations. This recording will allow the researchers to make sure participant thoughts and opinions were captured accurately. Electronic files, including recordings, will be stored on the researchers' password protected computers. Recordings will be destroyed (demagnetized/erased and discarded) within one



University of Maryland College Park

Initials _____ *Date* _____

	year of the study. All other physical data (e.g., paper) related to this project will be stored in a locked file cabinet. If we write a report or article about this research project, your son/daughter's identity will be protected to the maximum extent possible. His/her information may be shared with representatives of the University of Maryland, College Park or governmental authorities if he/she or someone else is in danger or if we are required to do so by law.	
Right to Withdraw and Questions	Your son/daughter's participation in this research is completely voluntary. You or your son/daughter may choose for him/her not to take part at all. Your son/daughter may stop participating at any time. If your son/daughter decides not to participate in this study or stops participating at any time, he/she will not be penalized or lose any benefits to which he/she would otherwise qualify. If you or your son/daughter decide to stop his/her participation in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator: **Krishna Bhagat at 630-885-9169 or knbhagat@umd.edu.**	
Participant Rights	If you have questions about your son/daughter's rights as a research participant or wish to report a research-related injury, please contact: **University of Maryland College Park** **Institutional Review Board Office** **1204 Marie Mount Hall** **College Park, Maryland, 20742** **E-mail: irb@umd.edu** **Telephone: 301-405-0678** This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.	
Statement of Consent	Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to have your son/daughter participate in this research study. If you would like, you will receive a copy of this signed consent form. **If you permit your child to participate, please sign your name below and return this form directly to the Before and After Care staff at your earliest convenience since recruitment will occur on a rolling basis. If you have more than one child who is 8 years of age (on or before April 1, 2015), please include the name of each child you permit to participate below.**	
Signature and Date	**YOUR NAME [Please Print]**	
	YOUR SIGNATURE	
	YOUR CHILD'S/CHILDREN'S NAME(S) [Please Print]	
	DATE	



University of Maryland College Park

Initials _____ *Date* _____

Student Assent Form
(For use with students older than 12 years of age)

PROJECT TITLE: Children's conceptualizations of health, healthy bodies, and health practices

PURPOSE OF THE PROJECT

- **Who is doing the project? Ms. Krishna Bhagat,** who is a student in the School of Public Health at the University of Maryland, College Park.
- **Who can participate?** We are inviting you to be a part of this project because you are part of the Before and After Care Program.
- **Why are we doing the project?** We want to do this project so we can learn about your ideas of health and healthy bodies. We will use your answers to the questions to help us come up with messages about health and healthy bodies that are safe and helpful to children like you.

PROCEDURES

- **What will we do?** The project will take place at University Park Elementary School during the Before and After Care Program. We will ask you to sign this form before you can be a part of the project. We will have two to three conversations, each lasting about 20-25 minutes. You will draw a picture of a (boy or girl) doing something healthy. During our conversations, we will also talk about your ideas concerning health and healthy bodies. You can explain your ideas in your own words. For example, we might ask you questions like this:
  1. What does the word 'healthy' mean to you?
  2. Would you say you do things that are healthy? Like what?
  3. Where do you learn information about health from?

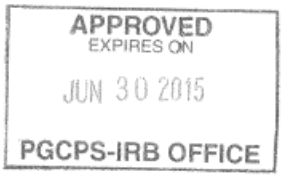
  At the end of this project, we will have a celebration to thank you for participating in this project.

POTENTIAL RISKS

- **Do you need to worry about risks or feeling uncomfortable?** We do not think that there are risks to being a part of this project. However, if you feel uncomfortable answering any of the questions, you do not have to answer them. You can also stop the conversation all together at any time.

POTENTIAL BENEFITS

- **What will you get from this study?** There are no direct benefits to participating in this study. Other benefits to you include having the chance to explain your thoughts, feelings and ideas about health and healthy bodies and knowing that we might use what you tell us to improve activities that have to do with health and healthy bodies.



Initials _____ *Date* _____

CONFIDENTIALITY

- **Will you mention my name?** Your personal information (for example, your name) will be not be collected during our conversation. We will do our best to keep your personal information confidential. To help make sure this happens: (1) your name will not be included with any public presentation (for example, posters, presentations, or papers) of the information we collect; (2) a code (number or "fake" name) will be placed on information we collect from you; and (3) only the researchers will be able to see the information that identifies you. We will not share what you tell us during our conversation with your parents or guardians.
- **Where will we keep the information we collect from you?** This research project involves making a recording of our conversations. This recording will allow the researchers to make sure your thoughts and opinions were captured accurately. Electronic (computer) files, including recordings, will be stored on computers with passwords on them. Recordings will be destroyed (demagnetized/erased and discarded) within one year of the study. All other physical data (e.g., paper) related to this project will be stored in a locked file cabinet.
- **What will you do with the information?** If we write a report or article about this research project, your identity (ex. Name) will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are asked to do so by law.

RIGHT TO WITHDRAW AND QUESTIONS

- **What if you want to quit?** Your participation in this project is completely voluntary (up to you). You may choose not to take part at all. If you decide to participate in this project, you may stop participating at any time. If you decide not to participate in this project or if you stop participating at any time, you will not be in trouble or be penalized in any way. If you decide to stop taking part in the project, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the researcher, **Krishna Bhagat, at 630-885-9169 or knbhagat@umd.edu.**

PARTICIPANT RIGHTS

- **What are your rights?** If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:

University of Maryland College Park
Institutional Review Board Office
1204 Marie Mount Hall
College Park, Maryland, 20742
E-mail: irb@umd.edu
Telephone: 301-405-0678

This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

Initials _____ *Date* _____

STATEMENT OF CONSENT

- Your signature indicates that you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. If you would like, you will receive a copy of this signed consent form.

If you agree to participate, please sign your name below.

Signature and Date	**NAME OF PARTICIPANT [Please Print]**	
	SIGNATURE OF PARTICIPANT	
	DATE	

University of Maryland College Park

Oral Student Assent Form
(For use with students 12 years of age and younger)

Ms. Krishna Bhagat is doing this project to help her understand children's ideas about health and healthy bodies. She is inviting you to be a part of her project because you are in the Before and After Care Program. To be part of her project, you will talk to her two or three times. Each time, you will talk for about 20-25 minutes. You will draw a picture of a (boy or girl) doing something healthy. Ms. Krishna will also ask you some questions like this:

1.) What does the word 'healthy' mean to you?
2.) Would you say you do things that are healthy? Like what?
3.) Where do you learn information about health from?

Ms. Krishna will not share what you say during the conversation with your parents or guardians and she will not ask for your name during our conversation. If at any time you feel you want to stop the conversation, you can let Ms. Krishna know. Do you agree to participate in this project?

Appendix IV- Research Oversight Boards' Approval Letters

PGCPS
Great By Choice

Kola K. Sunmonu, Ph.D.
Director, Dept. of Research & Evaluation

February 18, 2015

Ms. Krishna N. Bhagat
9002 Breezewood Terrace, #301
Greenbelt, MD 20770

Dear Ms. Bhagat:

Your application to conduct the research titled "*Children's Conceptualizations of Health, Healthy Bodies, and Health Practices*" has been reviewed by the Prince George's County Public Schools' research application reviewers. Based on the examination, I am pleased to inform you that the Department of Research & Evaluation has granted conditional authorization for you to proceed with your study.

While we are cognizant that your project spans multiple school years, this authorization extends through the 2014-2015 school year only. In order to collect data during subsequent school years, you must submit a written request for an extension and that request must be approved. Each request for extension must be accompanied with a status report of the study. Further, you will be required to obtain new signed consent forms from parents of participating students. The district reserves the right to withdraw approval at any time or decline to extend the approval if the implementation of your study adversely impacts any of the school district's activities.

If the conditions summarized above are acceptable to you, please secure written approval of the principal of University Park Elementary School on the enclosed Principal Permission to Conduct Research Study form. The original signed copy of the form should be forwarded to my attention and a copy given to the respective principal. Regarding the Parental/Guardian Consent letter, please be aware that only approved copies (stamped '**APPROVED**') can be distributed to your target subjects. We re-affirm that you may only collect data on students for whom you have signed Parental Consent letters. Should you revise the Parental Consent Letter or any other document submitted with your application, the revised documents must be approved by this office before being used in the evaluation.

All research personnel that will interact directly with students must be fingerprinted and cleared before such interactions will be allowed. Copies of the fingerprinting reports must be submitted to the principal of University Park Elementary School. While the fingerprinting will be conducted at the district's fingerprinting office, you will be responsible for all related costs. For additional information regarding the fingerprinting process of this group of individuals, please

contact Ms. Mary Norris either by telephone at (301) 952-6775 or via her email address at mary.norris@pgcps.org.

Finally, it is important that the procedure detailed in the proposal submitted be followed while conducting your research. An abstract and one copy of the final report should be forwarded to the Department of Research & Evaluation within one month of successful defense of your dissertation.

Do not hesitate to contact me if you have any questions. I can be reached at 301-780-6807 or by email, kolawole.sunmonu@pgcps.org. I wish you success in your study.

Sincerely,

Kola K. Sunmonu, Ph.D.
Director, Department of Research & Evaluation

KKS:kks

Enclosures

cc: Lisa D. Price, PMP, CGPM, BSP, Executive Director

UNIVERSITY OF MARYLAND
INSTITUTIONAL REVIEW BOARD

1204 Marie Mount Hall
College Park, MD 20742-5125
TEL 301.405.4212
FAX 301.314.1475
irb@umd.edu
www.umresearch.umd.edu/IRB

DATE:	March 25, 2015
TO:	Krishna Bhagat, M.P.H.
FROM:	University of Maryland College Park (UMCP) IRB
PROJECT TITLE:	[705755-3] Children's Conceptualizations of Health, Healthy Bodies, and Health Practices: the Relationship to the Weight-Centered Health Model
REFERENCE #:	
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
APPROVAL DATE:	March 25, 2015
EXPIRATION DATE:	February 10, 2016
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # *6 & 7*

Thank you for your submission of Amendment/Modification materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Prior to submission to the IRB Office, this project received scientific review from the departmental IRB Liaison.

This submission has received Expedited Review based on the applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Unless a consent waiver or alteration has been approved, Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of February 10, 2016.

Please note that all research records must be retained for a minimum of seven years after the completion of the project.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

Appendix V- Interview Protocol

Phase 1 (Children's Conceptualizations of Health, Healthy Bodies, and Health Practices)
Interview Script

Now I would like to ask you some questions about your health.

Conceptualizations of Health

1. What does the word 'healthy' mean to you?
2. What does the word 'unhealthy' mean to you?
3. Do you think you are healthy? Why/why not?

Conceptualizations of Healthy Bodies

1. Can you describe a healthy body to me?

Conceptualizations of Health Practices

1. (Give the participant a blank sheet of paper, some markers, and crayons). On this sheet of paper, draw an image of a (girl/boy, to match participant's gender) doing something healthy. You may use pictures and words.

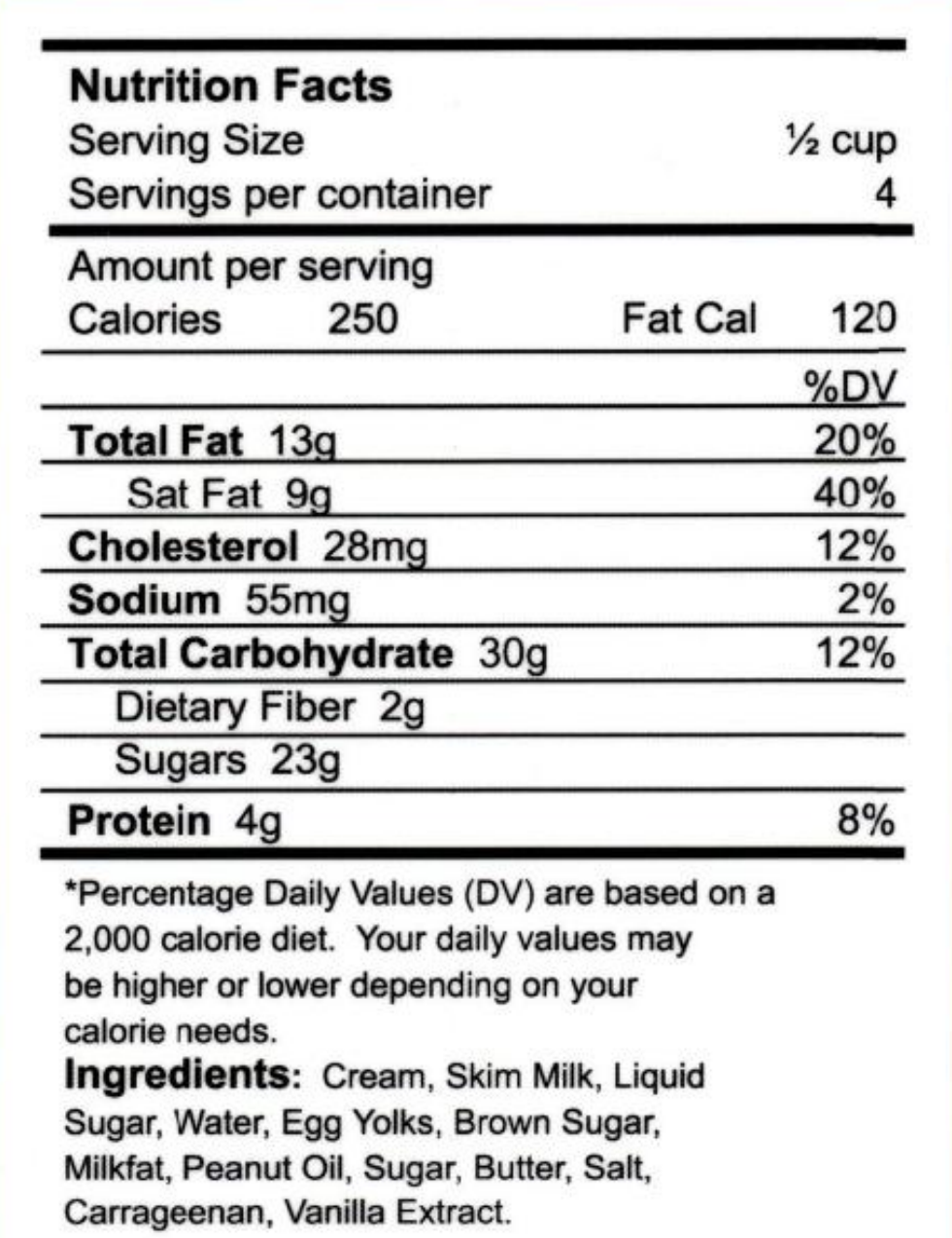
(After the participant has finished drawing):

2. Tell me about what you drew.
3. What else does a person do to be healthy?
4. What does a person do to be unhealthy?
5. Would you say you do things that are healthy?
6. (If yes to previous question), like what?
7. Do you do any unhealthy things?
8. (If yes to previous question), like what?

Phase 2 (Functional, Communicative, and Critical Health Literacy) Interview Script

*Interviewer: Last time, when we talked, I asked you to draw a picture of a (girl/boy) doing something healthy. Here is the picture you drew (show the participant his/her picture from Phase 1). This time, I'd like you to draw a picture of a girl/boy doing something 'unhealthy.' (Once the participant is done), Tell me about what you drew.

Now I want you to look at this for a minute (show ice cream nutrition label).



Nutrition Facts

Serving Size	½ cup
Servings per container	4
Amount per serving	
Calories 250	Fat Cal 120
	%DV
Total Fat 13g	20%
Sat Fat 9g	40%
Cholesterol 28mg	12%
Sodium 55mg	2%
Total Carbohydrate 30g	12%
Dietary Fiber 2g	
Sugars 23g	
Protein 4g	8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Section	Construct Addressed	Interview Questions
1. Functional Health Literacy	Reading and writing skills	(Show the nutrition label). *Do you know what this is? What is it?*
	Reading and writing skills	*What did you notice first on here?*
	Reading and writing skills	*Can you point to the words you understand? Can you tell me what they mean?*
	Reading and writing skills	*Can you find the word sugar? Can you tell me how much sugar is in this food?*
	Reading and writing skills	*Let's pretend you are allergic to peanuts. WHERE on this label would you LOOK to see if you could eat this ice cream? Could you eat this ice cream?*
2. Communicative Health Literacy	Extract information	*Where do you get information about health from?* (Ask the following after participant provides answers) *Anyone else or anywhere else*?
	Extract information	*What information about health do you get from* _____ (each source)?
	Extract information	*When you get information about health from different people or places, how do you decide which information to pay attention to?*
	Derive meaning from different forms of communication	*Is it easy or hard to understand the health information you get from* _____ (each source)*?* (Based on answer, ask the following for each source mentioned by the participant) *What makes it hard/easy to understand?*
	Apply new information to changing circumstances	*Do you use the health information you get?* (If yes) *How do you use it?*
3. Critical Health Literacy	Critically analyze information	*Are there times when the information you get about health is different depending on where or who you get it from* (If yes) *Can you give me an example?* (After participant responds, ask the following) *Any other examples?*
	Critically analyze information	*How do you decide if the health information you get is correct?*
	Using information to exert greater control over life events and situations	*Do <u>you</u> make decisions about your <u>own</u> health?* (If yes) *Can you give me an example?* (After participant responds, ask the following) *Any other examples?*

Appendix VI: Coding Dictionary

CONCEPTUALIZATIONS OF HEALTH, HEALTHY BODIES, AND HEALTH PRACTICES		
Category	**Code name**	**Description of code**
General attributes or descriptions of drawing	**Another individual**	Including another individual in drawing
	Dark	Drawing is dark
	Because I like it	Drew activity or behavior b/c they like it
	Others cheering on	Other individuals in the drawing are cheering on
	Because I do it	Drew activity or behavior b/c they do it
	Drew it because it's the first thing I thought of	Drew activity b/c that's what they thought of first
Comments related to healthy and unhealthy bodies (but not specifically related to weight)	**Healthy bodies come in different sizes**	Reference to bodies coming in different sizes
	Healthy body digests properly	Reference to healthy body digesting properly
	Healthy body has muscles	Reference to healthy body having muscles
	Healthy body is	General reference to what a healthy body is
	Healthy body is in balance	Reference to a healthy body being in balance
	Healthy body is in shape	Reference to a healthy body being in shape
	Healthy body works out	Reference to a healthy body working out
	Healthy body has good taste buds	Reference to healthy body having good taste buds
	Healthy body doesn't get sick right away	Reference to healthy body not getting sick
	Health means body systems are healthy	Reference to healthy body having proper function
	Male and female have different bodies	Reference to healthy body depending on gender
	There is such thing as a right size for a person	Reference to there being a right size for a person
	Unsure what a healthy body is	Not being sure what a healthy body looks like
	Healthy is being fit	Reference to healthy body being fit
	Healthy is fit and fit is healthy	Reference to relationship between fit and healthy
	Definition of fit	General reference to what 'fit' is
	Healthy body has good eye sight	Reference to healthy body having good eye sight
Comments related to food and drink	**Balancing healthy and unhealthy things**	Reference to having to balance healthy with unhealthy
	Beans	Reference to beans in description of healthy or unhealthy food
	Caring about health means watch what you eat	Reference to watching what you eat
	Diet	General reference to diet
	Drinking soda is unhealthy	Reference to drinking soda in definition of unhealthy or unhealthy practices
	Drunk	Reference to someone being drunk
	Eating at the right time	Reference to the importance of eating at the right time
	Eating bad foods consistently is unhealthy	Reference to consistently eating bad foods in definition of unhealthy or unhealthy practices
	Fast food	General reference to fast food
	Feel better when you eat healthy food	Reference to feeling better when you eat healthy food
	Food and activity choices reflected in body	Reference to how food and activity choices are reflected in you body
	Food pyramid	Reference to food pyramid
	Fruits and veggies	Reference to fruits and vegetables
	Going out to eat	Reference to going out to eat
	Health is eating healthy foods	Reference to eating 'healthy' foods
	Health is eating vitamins	Reference to vitamins
	Healthy means drinking milk	Reference to milk
	Healthy is beyond food and activity	Reference to health practices beyond food and activity choices
	Healthy foods are	General reference to what healthy foods are
	Healthy foods make your body grow	Reference to 'healthy' foods making body grow
	Healthy foods are organic	Reference to 'organic' in description of healthy foods
	Healthy is eating (all) your food	Reference to 'eating all your food' in description of healthy
	Healthy means drinking water	Reference to drinking water in description of healthy
	Healthy means getting enough fat	Reference to 'getting enough fat' in description of healthy
	Healthy means having a balanced diet	Importance of a 'balanced diet' in description of healthy

	How much fat (consumed) is OK	Defining how much fat is 'OK' to eat
	If I packed my lunch I would pack	Description of what they would pack if they packed their own lunch
	Junk food	Reference to junk food (general or specific)
	Healthy foods are less distinct	Reference to 'healthy' nutrients/ingredients rather than foods themselves
	Unhealthy foods are less distinct	Reference to 'unhealthy' nutrients/ingredients rather than foods themselves
	Meat is not good	Reference to meat not being healthy to consume
	Meat is good	Reference to meat being healthy to consume
	My plate	Reference to 'My Plate' in description of healthy or unhealthy
	Potato chips	Reference to potato chips in description of healthy or unhealthy food
	Protein	Reference to protein in description of healthy or unhealthy food
	Reward for eating healthy foods	Reference to receiving a reward for eating healthy
	There are distinctly nutritious things	Identifying distinctly healthy foods and drinks
	There are distinctly unhealthy things	Identifying distinctly unhealthy foods and drinks
	Unhealthy food is fake	Reference to unhealthy food being fake
	Unhealthy foods are	General reference to what unhealthy foods are
	Unhealthy foods have chemicals	Reference to unhealthy foods having too many chemicals
	Unhealthy foods have too many calories	Reference to unhealthy foods having too many calories
	Unhealthy foods have too much fat	Reference to unhealthy food having too much fat
	Unhealthy foods make you feel bad	Reference to unhealthy food making you feel 'bad'
	Sugar is bad for teeth	Reference to sugar being bad for your teeth
	Unhealthy is eating bad foods	General reference to 'bad foods' in description of unhealthy
	Unhealthy is not eating (all) your food	Reference to idea that not eating all your food is unhealthy
	Unhealthy is not getting enough water	Idea that not getting enough water is unhealthy
	Unhealthy means eating sweets	Eating sweets is unhealthy
	Vegan vegetarian	Reference to being vegan or vegetarian
	Healthy is well fed	Reference to being 'well fed' in definition of healthy
	Well fed is	Definition of what 'well fed' is
	Watching what you eat	Reference to watching what you eat in definition of healthy or unhealthy
	Healthy is getting the right amount of food	Reference to getting the right amount of food in definition of healthy
	Not exactly sure why sugar is unhealthy	Not being sure of the reason why sugar is unhealthy (just that it is)
	What makes unhealthy foods unhealthy	Description of what makes unhealthy foods unhealthy
Comments related to weight specifically	**Consequences of being overweight**	Identification of the consequences of being overweight
	Consequences of being underweight	Identification of the consequences of being underweight
	Don't remember where (he/she) learned overweight is bad	Not remembering where they learned overweight is bad (just that it is)
	Health body and weight are related	General reference to weight in relation to a healthy body
	Healthy body isn't fat	Reference to a healthy body not being fat
	Not sure why overweight is bad	Not remembering why being overweight is bad (just that it is)
	Healthy body isn't skinny	Reference to a healthy body not being skinny
	Other factors could lead to overweight	Reference to factors other than food/activity that could lead to overweight
	Overweight is unhealthy	General reference to overweight not being healthy
	Why someone gets fat	Explanation for why someone gets fat
	Unhealthy means you may get fat	Reference to idea that being unhealthy means you may get fat
	Weight	General reference to weight in description of bodies
	Where learned that overweight is bad	Description of where they learned overweight is bad

General comments related to health or healthy	**A little bit of TV is OK**	Idea that watching a little bit of TV is 'OK'
	Environmental influences	Reference to environmental influences on health
	Exercise is	Definition of what exercise is
	Having energy is healthy	Reference to having 'energy' in definition of health
	Going to bed on time is healthy	Reference to going to bed on time in definition of health
	Having a job is healthy	Reference to having a job being healthy
	Health includes not wasting money	Reference to not wasting money in definition of health
	Health is a thing	Reference to health being a 'thing'
	Healthy is being outside	Reference to being outside in definition of health
	Health is doing something healthy	Reference to health practices in definition of health
	Health is having fun	Describing health as 'having fun'
	Health is safety	Reference to safety in description of health
	Healthy is happy	Reference to being 'happy' in description of health
	Healthy is having physical ability	Reference to physical ability in description of health
	Healthy means balance	Reference to having balance in description of health
	Healthy means everything is ok	Reference to everything being 'OK' in description of health
	Healthy means going to the doctor	Reference to going to the doctor in description of health
	Healthy means helping your brain	Reference to helping your brain in description of health
	Healthy means not littering	Reference to not littering in description of health
	Healthy means not sick	Reference to not being sick in description of health
	I am healthy because	Explanation for why they are healthy
	Healthy is hygiene	Reference to hygiene in description of health
	Physical activity is healthy	Reference to physical activity in description of health
	How much physical activity	Description of how much physical activity one should perform
	Physical activity should be balanced	Reference to the idea that physical idea should be balanced
	Playing with friends	Reference to playing with friends
	Sports	Reference to sports in description of health
	You can do healthy things inside	Reference to idea that healthy things can be done inside
General comments related to unhealthy	**Being unhealthy inhibits you from doing things**	Reference to idea that being unhealthy stops you from doing things
	Can't do unhealthy things	Reference to idea that it is not possible to do unhealthy things
	Unable to explain what 'unhealthy' means	Can't explain what healthy is
	Having cancer is unhealthy	Reference to cancer in description of unhealthy
	Being on a computer is unhealthy	Reference to being on a computer in description of unhealthy
	Bored	Reference to doing unhealthy things when bored
	Diabetes is unhealthy	Reference to diabetes in description of unhealthy
	Don't remember why	Reference to not remembering why something is unhealthy
	Dying hair unhealthy	Reference to dying hair in description of unhealthy
	Getting sick is unhealthy	Reference to getting sick in description of unhealthy
	I am not unhealthy but	Saying they are not unhealthy (but providing a disclaimer)
	I am unhealthy because	Description of why they are unhealthy
	I don't do unhealthy things	Saying they do not do unhealthy things
	Being inside is unhealthy	Reference to being inside in description of unhealthy
	It's not so bad when I do it	Saying that an (unhealthy) thing is not so bad when they do it
	Know what unhealthy looks like	Reference to the idea that they 'know' what unhealthy looks like
	Littering is unhealthy	Reference to littering in description of unhealthy
	Nobody tries to be unhealthy	Saying that nobody actually tries to be unhealthy
	Sedentary unhealthy	Reference to being sedentary in description of unhealthy
	Texting unhealthy	Reference to texting in description of unhealthy
	Unhealthy is always getting sick	Reference to getting sick in description of unhealthy
	Unhealthy is disgusting	Reference to unhealthy being disgusting
	Unhealthy is lazy	Reference to being lazy in description of unhealthy
	Unhealthy is male	Reference to the idea that males are unhealthy

	Unhealthy is not being fit	Reference to not being fit in description of unhealthy
	Unhealthy is not satisfying	Reference to idea that being unhealthy is not satisfying to them
	Unhealthy is opposite of healthy	Saying that unhealthy is the opposite of healthy
	Unhealthy is stereotypical American	Reference to a 'stereotypical American' in description of unhealthy
	Unhealthy is tired	Reference to being tired in description of unhealthy
	Unhealthy is unhappy	Reference to being unhappy in description of unhealthy
	Unhealthy means body not working properly	Reference to idea that being unhealthy means your body is not working properly
	Unhealthy means not caring about your health	Reference to not caring about your health in description of unhealthy
	Unhealthy means off balance	Reference to being 'off balance' in description of unhealthy
	TV	General reference to TV in description of unhealthy
	Why is TV unhealthy	Explanation for why watching TV is unhealthy
	Video games are unhealthy	Reference to video games in description of unhealthy
	Why is not having a job unhealthy	Explanation for why not having a job is unhealthy
	Unhealthy is an abundance	Reference to an abundance of certain behavior(s) in description of unhealthy
	Why someone would be unhealthy	Explanation for why someone would be unhealthy
	Individual responsibility	Attributing individual responsibility over unhealthy behaviors
	Marketing technique	Reference to marketing techniques in description of unhealthy
Items that don't fit anywhere else	**Inspires me**	Reference to doing something because it inspires them
	Not listening to parents	Reference to not listening to one's parents in description of health or unhealthy

FUNCTIONAL HEALTH LITERACY		
Category	**Code Name**	**Description of code**
Reading/Writing skills	**Identifying what nutrition label is**	Their response when asked if they know what the label is
	What they notice first on the label	Description of what they noticed first on the food label
	Describing info on nutrition label	Any description of what they understand off of the food label
	Sugar in food	Answer to the question “how much sugar is in this food?”
	Peanut allergy question	Answer to the peanut allergy question

COMMUNICATIVE HEALTH LITERACY		
Category	**Code Name**	**Description of code**
Extract health information	**Extract books**	Reference to getting health information from books
	Extract cafeteria	Reference to getting health information from cafeteria
	Extract computer	Reference to getting health information from computer
	Extract dentist	Reference to getting health information from dentist
	Extract doctor	Reference to getting health information from doctor
	Extract family	Reference to getting health information from family
	Extract food labels	Reference to getting health information from food labels
	Extract friends	Reference to getting health information from friends
	Extract grocery store	Reference to getting health information from grocery store
	Extract health class	Reference to getting health information from health class
	Extract internet	Reference to getting health information from internet
	Extract magazines	Reference to getting health information from magazines
	Extract news	Reference to getting health information from news
	Extract own experiences	Reference to getting health information from own experiences
	Extract parents	Reference to getting health information from parents
	Extract Scholastic	Reference to getting health information from Scholastic magazine
	Extract school	Reference to getting health information from school
	Extract teachers	Reference to getting health information from teachers
	Extract TV	Reference to getting health information from TV
	Deciding which health info to pay attention to	Description of how they decide which health information to pay attention to
Derive meaning from information	**Getting confused about health info**	Reference to being confused about health information received
	Understand books	Reference to understanding health information from books
	Understand dentist	Reference to understanding health information form dentist
	Understand doctor	Reference to understanding health information from doctor
	Understand family	Reference to understanding health information from family
	Understand food labels	Reference to understanding health information from food labels
	Understand friends	Reference to understanding health information from friends
	Understand grandparents	Reference to understanding health information from grandparents
	Understand health class	Reference to understanding health information from health class
	Understand health info	General reference to understanding health information
	Understand internet	Reference to understanding health information from internet
	Understand magazines	Reference to understanding health information from magazines
	Understand news	Reference to understanding health information from the news
	Understand parents	Reference to understanding health information from parents
	Understand scholastic	Reference to understanding health information from Scholastic
	Understand school	Reference to understanding health information from school
	Understand teachers	Reference to understanding health information from teachers
	Understand TV	Reference to understanding health information from TV
Apply information	**Apply doctor**	Reference to applying health information from doctor
	Apply health info carefully	Reference to applying health information carefully
	Don't apply health info	Reference to not applying health information from a source
	Apply health info general	General reference to applying health information
	Apply health info to others	Reference to using health information to help others
	Apply parents	Reference to applying health information from parents
	Apply TV	Reference to applying health information from TV
	Why apply health info carefully	Explanation for why they apply health information carefully

CRITICAL HEALTH LITERACY		
	Code Name	**Description of code**
Analyze health information	**Analyze general**	General reference to analyzing health information
	Because they don't lie	Reference to knowing health information they get is correct b/c the source they are referring to “doesn’t lie”
	Check health info	Reference to when they check whether the health information is correct
	Distrust store people	Reference to distrusting people at a store
	Don't pay attention to those who may be lying	Reference to not paying attention to health information from those who may be lying
	Health info different or same	General response to whether health information they receive from different sources is ever different (or is it the same)
	Just believe health info	Reference to just believing all the health information they receive
	Look up health info on internet	Reference to looking up health information on the internet to see if it is true
	Trust adults	Reference to trusting health information from adults
	Trust books	Reference to trusting health information from books
	Trust doctor	Reference to trusting health information from the doctor
	Trust family	Reference to trusting health information from family
	Trust grownups	Reference to trusting health information from grownups
	Trust health info	General reference to trusting health information
	Trust health info because of education	Reference to trusting health information due to source’s education
	Trust health info because of experience	Reference to trusting health information because of source’s experience
	Trust parents	Reference to trusting health information from parents
	Trust teacher	Reference to trusting health information from teacher
	Deciding health info is correct	General response to how they decide if health information they receive is correct or not
Use health information to exert greater control	**Making own decisions about health**	Reference to them making their own decisions about health
	Parents make decisions about health	Reference to parents making health decisions for them

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