

PARENT PERCEPTIONS OF CHILDHOOD HEALTH AND NUTRITION AND
THEIR ROLE IN THE HOME FOOD ENVIRONMENT
IN HAYS COUNTY, TEXAS

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PARENT PERCEPTIONS OF CHILDHOOD HEALTH AND NUTRITION AND
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CHAPTER I

Introduction

Overweight and obesity among school-aged children is an important issue in the United States today. Obesity in the United States has been on the rise for the past two to three decades, affecting not only adults, but increasingly children as well (Berge, et al. 2012; Birch, et al. 2001; Byrd–Bredbenner and Abbot 2009; Moffat 2010; Rahman, Cushing and Jackson 2011; Sallis and Glanz 2006; Wang and Beydoun 2007). According to the Centers for Disease Control and Prevention (CDC), 17 percent of children aged 2–19 in the U.S. are obese (Division of Nutrition 2013). Similar trends were identified in Texas, where 20.4 percent of Texan adolescents aged 10–17 were obese (Combs 2011). And within Hays County in Texas, 39 percent of 3rd through 12th grade students in the Hays Consolidated Independent School District (CISD) were overweight, 16 percent of these students were obese, and 5 percent were severely obese.

State and federal programs have been designed to combat the steady increase in obesity by promoting healthy eating and increased physical activity. On a state level, Texas has implemented the *Nutrition, Physical Activity and Obesity Prevention (NPAOP) Program* based on CDC recommendations (DSHS 2012). On a national level, First Lady Michelle Obama initiated the *Let's Move* campaign which promotes a healthy food availability early for young children; empowering parents and caregivers; providing healthy food in schools; improving access to healthy, affordable foods; and

increasing physical activity” (2013). Additionally, the *National Football League* “NFL Play 60” and *Whole Foods Market* “Marathon Kids” are nationally promoted programs designed to encourage increased physical activity among children. The question is, are these programs effective? And perhaps more importantly, what causes childhood overweight and obesity in the first place?

To address this last question, at least in part, this research aimed to review the causes of overweight and obesity among children in the U.S. generally and to understand what parents know about child health and nutrition including overweight and obesity. This chapter will provide a literature review of the contributing factors to overweight and obesity, as well as a review of parental perceptions of children’s weight statuses. Following this review, the results of my thesis research will be presented in chapter two in the form of a publishable article. This format, rather than a traditional thesis format, was selected to allow the results of this research to be disseminated to a broader audience through publication in local newspapers and popular or academic journals. My goal in conducting this research was to contribute an anthropological approach to understanding childhood health and nutrition from parents’ perspectives to the fields of public health, nutrition, or any agency interested in designing programs aimed at reducing or preventing childhood overweight or obesity.

Overweight and Obese: Are they different?

Childhood overweight is defined as having a body mass index (BMI) between the 85th and 95th percentile for children of the same age and sex. Obesity is defined as having a BMI greater than or equal to the age- and sex-specific 95th percentiles. While

these differences may seem slight, it is important to note that overweight and obesity are distinctly different conditions. Interestingly, the COH report distinguishes between overweight, obese, and severely obese, unlike popular media and literature which often conflates the two terms (Moffat 2010). This conflation results in children being placed into a single category, usually obese, despite these two conditions having different health related outcomes and the fact that overweight children do not always become obese.

Overweight children are said to be *at-risk* for becoming obese and these children often do not exhibit any obvious health risks. In the case of obesity, on the other hand, research has shown that obese children are manifesting adult-associated chronic diseases (Berge, et al. 2012; Byrd-Bredbenner and Abbot 2009; Combs 2011; Keller, et al. 2013; Rietmeijer-Mentink, et al. 2013; Sorof, et al. 2004; Wang and Beydoun 2007). Because of these linked health risks, it is important to briefly examine the factors that have been attributed to this increased prevalence of overweight and obesity in school-aged children.

Cause of Childhood Overweight and Obesity: A Structural Perspective

At this time, public health research is a major contributor to the literature on childhood obesity. A multidisciplinary literature review suggests that the built environment, low socioeconomic status (SES), and increased sedentary behavior are a few of the structural factors contributing to overweight and obesity in school-aged children. While individually each of these factors has a specific role, one factor may act to perpetuate another. The built environment consists of the physical environment in

which people live and work that includes man-made features such as playgrounds, sidewalks, streets and highways, recreation facilities, and even food source accessibility, or alternatively, a lack these features (Hillier, et al. 2011; Rosenkranz and Dzewaltowski 2008; Sallis and Glanz 2006; Wang and Beydoun 2007). If children live in a large urban area with high volume traffic and limited access to recreational areas, they are less likely to participate in physical activities such as walking to school or engaging in activities outdoors and more likely results in increased sedentary behaviors.

Sedentary behavior such as watching television or playing videogames – referred to collectively as screentime, has been associated with increased caloric intake of high-fat, energy-dense food – resulting in reduced physical activity, all of which contribute to weight gain among children (Anderson, Economos and Must 2008; Bellows, et al. 2011; Crooks 2000; Crossman, Sullivan and Benin 2006; de la Haye, et al. 2010; Driskell et al. 2007; Dubois, et al. 2008; Jago, et al. 2005; Moffat, Galloway and Latham 2005; Nelson, et al. 2006; Sallis and Glanz 2006; Wang and Beydoun 2007). Additionally, mothers have reported a concern for safety revolving around the built environment and may therefore indirectly contribute to overweight and obesity when this concern prevents their children from being outdoors unsupervised (Kimbrow et al. 2011). The built environment, in this case, may be directly connected to increased indoor activity and therefore, sedentary behavior.

While sedentary behavior may be connected to the environment in which one resides, both may also depend on SES which has been shown to have an inverse relationship with overweight and obesity (Crooks 2000). Individuals with a low SES often have increased BMIs. Low SES has also been associated with discount

supermarkets, poor food choices, and/or food insufficiency (Alaimo, Olson and Frongillo 2001; Casey et al. 2001; Dubois et al. 2006; Himmelgreen 1997) Neighborhoods with high poverty rates often lack supermarkets, resulting in reliance on local markets or convenience stores which are more expensive and provide limited produce selection (Hillier et al., 2011; Kaufman and Karpati 2007; Powell et al. 2007; Richards and Smith 2007; Wang and Beydoun 2007). This in turn, often results in decreased consumption of nutritious foods and increased consumption of energy–dense foods (Moffat, Galloway and Latham 2005).

Cause of Overweight and Obesity: What do parents say?

Baughcum, et al. suggest parental understanding and involvement is essential in regards to preventing childhood overweight and obesity and state, “for parents to actively engage in obesity prevention efforts with their young children, however, parents must be aware that their children are becoming overweight and must be concerned about the potential consequences” (2000:1380). Few studies address the influence or perceptions of parents; however those that do, indicate parents often are unaware their children are overweight or obese and frequently underestimate the weight of their children (Baughcum, et al. 2000; Crawford, et al. 2006; de la O, et al. 2009; Jain, et al. 2001; Keller, et al 2013; Rietmeijer–Mentink, et al. 2013; Towns and D’Auria 2009). In a study conducted by Crawford, et al. (2006), it was found that 89% of parents of overweight 5–6 year olds were unaware that their children were overweight. Similarly, Baughcum, et al. (2000) found that 79% percent of mothers failed to perceive their overweight child as overweight.

Purpose of this Research

Despite numerous quantitative studies evaluating childhood overweight and obesity, there is limited qualitative data evaluating why parents incorrectly identify their child weight status and indicates an opportunity for further study. Parental understanding, awareness, and involvement are essential in regards to preventing childhood overweight and obesity (Keller, et al. 2013). For this reason, it is important to ascertain a parent's perspective in an effort to understand what prompts parent decision making around food choices. By qualitatively focusing on parents' perspective of the home environment – what works and what does not work for parents – this study seeks to provide a greater understanding of what parents perceive in relation to childhood health and nutrition, childhood overweight and obesity, and any potential difficulties in providing or implementing a lifestyle they would choose.

A. References Cited

- Alaimo, K., with C.M. Olson, and E.A. Frongillo
 2011 Low family income and food insufficiency in relation to overweight in US children – Is there a paradox? *Archives of Pediatrics and Adolescent Medicine* 155(10):1161–1167.
- Anderson, Sarah E, with Christina D Economos, and Aviva Must
 2008 Active play and screen time in US children aged 4 to 11 years in relation to sociodemographic and weight status characteristics: a nationally representative cross-sectional analysis. *BMC Public Health* 8:366.
- Baughcum, Amy E., with Leigh A. Chamberlin, Cindy M. Deeks, Scott W. Powers and Robert C. Whitaker
 2000 Maternal perceptions of overweight preschool children. *Pediatrics* 106(6):1380–1386.
- Bellows, Laura, Sara Silvernail, Lisa Caldwell, Angela Bryant, Cathy Kennedy, Patricia Davies, and Jennifer Anderson
 2001 Parental Perception on the Efficacy of a Physical Activity Program for Preschoolers. *Journal of Community Health* 36:231–237.
- Berge, Jerica M., with Aimee Arikian, William J. Doherty, and Dianne Neumark-Sztainer
 2012 Healthful Eating and Physical Activity in the Home Environment: Results from Multifamily Focus Groups. *Journal of Nutrition Education and Behavior* 44(2):123–131.
- Birch, Leanne L., with J.O. Fisher, K. Grimm–Thomas, C.N. Markey, R. Sawyer, and S.L. Johnson
 2001 Confirmatory factor analysis of the Child Feeding Questionnaire: a measure of parent attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite* 36:201–210.
 Byrd–Bredbenner, Carol, and Jaclyn Maurer Abbot
 2009 Differences in food supplies of U.S. households with and without overweight individuals. *Appetite* 52:479–484.
- Casey, Patrick H., with Kitty Szeto, Shelly Lensing, Margaret Bogle, and Judy Weber
 2001 Children in Food–Insufficient, Low–income Families: Prevalence, Health, and Nutrition Status. *Archives of Pediatric and Adolescent Medicine* 155:508–514.

Centers for Disease Control and Prevention

2013 Basics About Childhood Obesity.

<http://www.cdc.gov/obesity/childhood/basics.html>, accessed April 2, 2013.

2013 Data and Statistics. <http://www.cdc.gov/obesity/data/childhood.html>, accessed April 2, 2013.

Children's Optimal Health.

2012 Hays Consolidated Independent School District Child Obesity By Neighborhood, Elementary, Middle and High Schools. Special Report. Austin: Hays CISD.

Combs, Susan

2011 Gaining Costs, Losing Time: The Obesity Crisis in Texas. Special Report. Austin: Texas Comptroller of Public Accounts, Data Services Division.

Crooks, Deborah L.

2000 Food Consumption, Activity, and Overweight Among Elementary School Children in an Appalachian Kentucky Community. *American Journal of Physical Anthropology* 112:159–170.

Crossman, Ashley, with Deborah Anne Sullivan, and Mary Benin

2006 The family environment and American adolescents' risk of obesity as young adults. *Social Science and Medicine* 63:2255–2267.

de la Haye, Kayla, with Gary Robins, Philip Mohr, and Carlene Wilson

2010 Obesity-related behaviors in adolescent friendship networks. *Social Networks* 32:161–167.

de la O, Angela, with Kristine C Jordon, Karen Ortiz, Laurie J. Moyer-Mileur, Greg Stoddard, Mike Friedrichs, Rachel Cox, Emily C. Carlson, Elizabeth Heap, and Nicole L. Mihalopoulos.

2009 Do Parents Accurately Perceive Their Child's Weight Status. *Journal of Pediatric Health Care* 23(4):216–221.

Department of State Health Services

2012 Nutrition, Physical Activity and Obesity Prevention (NPAOP) Program.

<http://www.dshs.state.tx.us/obesity/NPAOPprogrampage.shtm>, accessed April 2, 2013.

Driskell, Mary–Margaret, with Sharon Dymont, Leanna Mauriello, Patricia Castle, and Karen Sherman

2008 Relationships among multiple behaviors for childhood and adolescent obesity prevention. *Preventive Medicine* 46(3):209–215.

Dubois, Lise, with Anna Farmer, Manon Girard, and Marion Porcherie

2006 Family food insufficiency is related to overweight among preschoolers. *Social Science and Medicine* 63(6):1503–1516.

Hillier, Amy, with Carolyn C. Cannuscio, Allison Karpyn, Jacqueline McLaughlin, Mariana Chilton, and Karen Glanz.

2011 How Far Do Low–Income Parent Travel to Shop for Food? *Urban Geography* 32(5):712–729.

Himmelgreen, David

1997 Poverty, Food Insecurity and Obesity What We Don't Know and Need to Find Out. *Anthropology News* 38(5):12–13.

Jago, R., with T. Baranowski, J.C. Baranowski, D. Thompson, and K.A. Greaves

2005 BMI from 3–6y of age is predicted by TV viewing and physical activity, not diet. *International Journal of Obesity* 29(6):557–564.

Jain, Anjali, with Susan N. Sherman, Leigh A. Chamberlin, Yvette Carter, Scott W. Powers and Robert C. Whitaker

2001 Why don't low income mothers worry about their preschoolers being overweight? *Pediatrics* 107(5):1138–1146.

Kaufman, Leslie, with Adam Karpati

2007 Understanding the sociocultural roots of childhood obesity: Food practices among Latino families of Bushwick, Brooklyn. *Social Science and Medicine* 64(11):2177–2188.

Keller, Kathleen, Annemarie Olsen, Laura Kuilema, Meyermann, and Christopher van Belle

2013 Predictors of parental perceptions and concerns about child weight. *Appetite* 62:96–102.

- Kimbro, Rachel Tolbert, Jeanne Brooks–Gunn, and Sara McLanahan
 2011 Young children in urban areas: Links among neighborhood characteristics, weight status, outdoor play, and television watching. *Social Science and Medicine* 72(5):668–676.
- Let’s Move
 N.d. About Let’s Move. <http://www.letsmove.gov/about>, accessed April 2, 2013.
- Miller, Carla K., and Paul Branscum
 2012 The Effect of a Recessionary Economy on Food Choice: Implications for Nutrition Education. *Journal of Nutrition Education and Behavior* 44(2):100–106.
- Moffat, Tina, T. Galloway, and J. Latham
 2005 Stature and Adiposity Among Children in Contrasting Neighborhoods in the City of Hamilton, Ontario, Canada. *American Journal of Human Biology* 17:355–367.
- Moffat, Tina
 2010 The “Childhood Obesity Epidemic”: Health Crisis or Social Construction. *Medical Anthropology Quarterly* 24(1):1–21.
- Nelson, Melissa C., Dianne Neumark–Stzainer, Peter J. Hannan, John R. Sirard, and Mary Story
 2006 Longitudinal and Secular Trends in Physical Activity and Sedentary Behavior During Adolescence. *Pediatrics*, 2006: 1627–1634.
- Powell, Lisa M., with Sandy Slater, Donka Mirtcheva, et al.
 2007 Food store availability and neighborhood characteristics in the United States. *Preventive Medicine* 44(3):189–195.
- Rahman, Tamanna, with Rachel A. Cushing, and Richard J. Jackson.
 2011 Contributions of Built Environment to Childhood Obesity. *Mount Sinai Journal of Medicine* 78(1):49–57.

Richards, Rickelle, and Chery Smith

2007 Environmental, parental, and personal influences on food choice, access, and overweight status among homeless children. *Social Science and Medicine* 65(8):1572–1583.

Rietmeijer–Mentink, Marloes, with Winifred D. Paulis, Marienke van Middelkoop, Patrick J.E. Bindels, and Johannes C. van der Wouden

2013 Difference between parental perception and actual weight status of children: A systematic review. *Maternal & Child Nutrition* 3–22.

Rosenkranz, Richard R., and David A. Dzewaltowski

2008 Model of the home food environment pertaining to childhood obesity. *Nutrition Reviews* 66(3):123–140.

Sallis, J.F., and K. Glanz

2006 The role of built environments in physical activity, eating and obesity in children. *Future of Children* 89–108.

Sorof, Jonathan M., with Dejian Lai, Jennifer Turner, Tim Poffenbarger, and Ronald J. Portman

2004 Overweight, ethnicity, and the prevalence of hypertension in school-aged children. *Pediatrics* 113(3):475–482.

Taboada, Melissa B.

2012 Hays district tip scales with 39 percent of students overweight. Austin American–Statesman. May 28.

Towns, Nichole, and Jenifer D'Auria

2009 Parental Perceptions of Their Child's Overweight: An Integrative Review of the Literature. *Journal of Pediatric Nursing* 24(2):115–130.

Wang, Youfa, and May A. Beydoun

2007 The Obesity Epidemic in the United States – Gender, Age, Socioeconomic, Racial/Ethnic, and Geographic Characteristics: A Systematic Review and Meta-regression Analysis. *Epidemiologic Reviews* 29:6–28.

CHAPTER II

Parent Perceptions of Childhood Health and Nutrition and Their Role in the Home Food Environment in Hays County, Texas

ABSTRACT

Background: Numerous quantitative studies have attributed the increase in childhood overweight and obesity to the built environment, low socioeconomic status, sedentary behavior, or any combination of the three. Concurrently, qualitative information, including assessments of parents' perspectives of their roles relating to child health and nutrition generally, and child overweight and obesity specifically, is often lacking. The purpose of this research was to add to the existing literature by offering such a qualitative perspective.

Methods: Semi-structured interviews were conducted with parents living in Hays County, Texas. Participation was limited to parents with children between the ages 5 and 10 years. Interviews were audio-recorded, transcribed verbatim and analyzed through content analysis.

Results: Analysis of interview texts suggested that parents in this study had similar understandings of health and nutrition, generally lacked specific knowledge of overweight and obesity, and agreed it is the responsibility of parents to provide for and influence the food choices of their children. Mothers agreed that time, monetary expense, and children's behaviors were seen as barriers to routinely providing a healthy food environment. Among mothers who were successful in living what they perceived to be a healthy lifestyle, planning was essential.

Conclusions: Qualitative assessments of parents' perspectives of child health and nutrition are important because they offer additional insight into the current problem of childhood overweight and obesity in the U.S. In turn, these insights may provide

valuable information to public health personnel, nutritionists and others as programs are designed to reduce and prevent childhood overweight and obesity.

INTRODUCTION

Obesity in the United States has been on the rise for the past two to three decades, affecting not only adults, but increasingly children and adolescents as well (Berge, et al. 2012; Keller, et al 2013; Rietmeijer–Mentink, et al. 2013; Towns and D’Auria 2009). Along with this increased incidence of childhood overweight and obesity, research has shown that obese children, specifically, are manifesting adult–associated chronic diseases (Berge, et al. 2012; Byrd–Bredbenner and Abbot 2009; Combs 2011; Keller, et al. 2013; Rietmeijer–Mentink, et al. 2013; Towns and D’Auria 2009). Unfortunately, studies indicate that parents fail to recognize their children are overweight or obese and therefore show little concern for their children’s weight status (Baughcum, et al. 2000; Crawford, et al. 2006; de La O, et al. 2009; Jain, et al. 2001; Keller, et al 2013; Rietmeijer–Mentink, et al. 2013; Towns and D’Auria 2009). Because of increasing health–related risks affecting school–age children, and this lack of recognition from parents, it is essential to understand how parents interpret their role in childhood health and nutrition and make food choice decisions for their children due to the crucial role they play in preventing childhood overweight and obesity (Keller, et al. 2013).

As nutritional gatekeepers of their home food environments (Rosenkranz and Dziewaltowski 2008; Wansink 2002, 2006), parents’ understanding, awareness, and involvement are critical in providing home environments that fosters healthy eating and prevents childhood overweight and obesity (Berge, et al. 2012; Keller, et al. 2013;

Rietmeijer–Mentink, et al. 2013). Parents' food choice decisions are reflected in their child–feeding practices which are shaped by parenting style, parent food preferences, socioeconomic factors, and even the media and advertising (Brewis and Gartin 2006; Rosenkranz and Dzewaltowski 2008). These child–feeding practices are also culturally constructed based on knowledge and beliefs about food, nutrition and eating. Therefore cultural constructs directly influence what type of foods enter the home, the amount of food provided, and food habits learned through parent modeling, all of which impact children's nutritional status (Birch 1998; Brewis and Gartin 2006; Dettwyler 1989, 1992; Rosenkranz and Dzewaltowski 2008).

For this reason, it is important to ascertain parents' perspectives of their home food environments in an effort to understand what prompts parent decision making in everyday food choices. By qualitatively focusing on parents' perspective of the home environment – what works and what does not work for parents – this study sought to provide a greater understanding of what parents perceive in relation to childhood health and nutrition, childhood overweight and obesity, and any potential difficulties in providing or implementing a lifestyle they would choose.

METHODS

Data for this study were collected via interviews with parents between July and October 2012. Participation was limited to parents living in Hays County, a county in central Texas located between the major metropolitan areas of Austin and San Antonio. As of 2011, the population of Hays County was estimated at 164,050 persons and was 57.7 percent non–Hispanic white and 35.8 percent Hispanic. The median household

income was approximately \$56,557, with 14.9 percent of households living below the poverty level. In 2012 there were seven school districts in Hays County and 24.3 percent of the county population was 17 years of age or younger.

Hays County has not been immune to this increase in overweight and obesity among school-aged children. A recent study by Children's Optimal Health (COH) conducted in collaboration with Hays Consolidated Independent School District (CISD) revealed that, among third through twelfth grade students, 39 percent were overweight, 16 percent were obese and 5 percent were severely obese (Taboada 2012). Children's Optimal Health (2012) used Hays CISD FITNESSGRAM data collected during the 2010–2011 school year and found that obesity was most prevalent among Hispanic students (25%) less prevalent among white students (14%) in grades 3–12.

Parents were recruited to participate in this study through convenience and “snowball” sampling. Flyers were placed in community libraries, a local daycare facility, churches, and disbursed at local community events. The same flyer was posted on social media community pages. Participation in this study was limited to parents who had at least one child between the age of 5 and 10 years. This exclusion criterion was chosen due to the expected role parents play in making food choices for their children at these ages. Between the ages of 5 and 10 years, children are able to verbalize food likes and dislikes, yet parents are still primarily responsible for making the final decisions about the type and quantity of food provided. In cases where a parent had more than one child in this target age range, the oldest child in this age range was identified as the main subject of reference. This was done to maintain consistency in the study and avoid clustering.

Semi-structured interviews were conducted with the parent who identified themselves as the primary decision maker in regards to food choices in their household. Interview topics included what family meals were typically like, how parents defined health, parents' knowledge of childhood overweight and obesity, challenges or obstacles parents felt they faced in relation to providing healthy meals and promoting physical activity, their children's usual daily routines, and parents' perceptions of their own children's weight status.

As part of the interview session, body mass index (BMI) data were collected from the reference child. These data included recording the month and year of the child's birth and measuring his or her height and weight using standard anthropometric techniques. Weight was measured in kilograms to the nearest tenth using a portable digital scale (Healthometer model HDM820-01). Height was measured in centimeters to the nearest tenth using a portable anthropometer (GPM Model 101). To ensure consistency, height and weight were both measured twice and then averaged. BMI was calculated utilizing the Center for Disease Control (CDC) Child and Teen BMI calculator (Division of Nutrition 2012). These data were collected to provide context to the interview regarding parents' perceptions of their children's weight status.

All of the interviews were audio-recorded, transcribed verbatim and analyzed using content analysis. Written consent for interviews and height and weight measurement of children was obtained at the time of the interviews with parents. Verbal assent was obtained from all children before they were measured. Written assent was obtained from children of reading and writing age. Data collection protocols were approved by the Texas State University San Marcos Institutional Review Board.

RESULTS

A total of 19 parents, all of whom were mothers, were interviewed for this study. Demographically, all mothers self-reported their race as Caucasian and were similar in terms of household income and education. The greatest difference between mothers was in the percent that worked full-time (47%), worked part-time (16%) and those who were not employed (37%). See Table 1 for additional information on parents' and children's demographic characteristics.

Parent Understanding

Mothers in this study had similar understandings of what being healthy entails, what overweight and obesity are, and what parents' responsibilities are in regards to their children's health and nutrition. This shared understanding, knowledge, and feeling of responsibility was based both on what mothers had heard in the media or had observed in their communities and on their own personal experiences. In terms of personal experiences in particular, mothers in this study often reflected on their own childhood experiences when discussing activity levels of their children, mealtime practices, or cooking influences, as one mother described, "How [my husband and I] grew up is how we feed our kids. Most of the things I cook are things my mom cooked. You know, like one thing maybe my mother-in-law taught me. But mostly it's the way . . . I grew up eating."

Definition of Healthy

Mothers generally agreed on what the term healthy meant, defining it simply as eating the right foods and exercising. In relation to eating the right foods, mothers

specified the need to eat more whole foods such as fresh fruits and vegetables, consume less red meat, select multigrain products, and eat foods that have “basic vitamins and minerals.” One mother defined healthy as eating “whole food, not processed food. That’s my goal when I think of – I want my children to be healthy and nutritious. I think of the least amount of – I just want real food in their bodies. Minimal processing, [minimal] added sugar; no added colors, no – just food.” Eating the right foods was also commonly associated with feeling good and providing “energy and fuel” for the body, as another mother summed it up:

Healthy to me means you are putting food in your body that your body is going to respond well to.... I kind of tell the kids, your body is a machine – just like a car – if you put the right stuff in your car, your car is going to run correctly. If you put the right stuff in your body, your body is going to run correctly. So healthy to me is eating the right kind of food, getting the right kind of exercise, and also I guess being mentally astute as well.

Mothers’ definitions of healthy also included various associations with foods that were homemade, organic and/or bought at specialty stores such as *Whole Foods* or *Central Market*. Food made at home, including baby foods, jams, yogurt, cookies and soups, was specifically associated with knowing and having control over the ingredients used. This, in turn, resulted in healthier food, as one another mother clarified, “And what you put in it. Like, if I get a cookie out of the cookie jar I know that I put flour, sugar, brown sugar, eggs and vanilla. I know I did that. But if I buy a pack of *Oreo*’s, I don’t even understand half of what’s in there. So to me, it’s not nutritious.” For some mothers organic food was considered healthier because it “doesn’t have hormones” or “chemicals” and, among mothers in this study, buying organic food was often associated with shopping at specialty stores or farmers markets.

In addition to eating the right foods, many mothers believed that being healthy also entails exercising. For one mother, being active implied “good health,” as she described, “Well I think healthy is being in good health, not being sick, obviously. But also being able to be active without being inhibited; being able to go out and do what you want to do without feeling like you’re being held back or limited by your lack of physical fitness.” For other mothers, exercising was defined as playing outdoors, being active as a family by biking or walking together, or even participating in extracurricular activities. According to mothers in this study, all of their children were involved in extracurricular activities at some point during the year and included participating in Girl/Boy Scouts, playing a musical instrument, participating in church activities, and playing individual or team sports outside of school. Because of these after-school activities and children’s homework, most mothers stated screentime during the school year was generally limited for their children, but all of them also recognized that their children’s screentime increased during the summer months.

Knowledge of Overweight and Obesity in Children

As in the case for healthy, there was consistency among mothers when describing their knowledge of overweight or obese; however, this consistency appeared in the form of inconsistency – mothers in this study were unable to offer a concrete definition based on BMI for either terms. Some mothers established that overweight and obese were different and that one was bigger than the other. Others focused on children’s ability to function, as one mother explained, “Obese seems to me to be they are so overweight that they cannot function and they can’t do anything.” When asked about their familiarity with childhood overweight or obesity in general, “I don’t know”

was the most common – and often immediate – response, “Well there’s a lot of fat little kids out there. I don’t know a lot about it other than I know it’s a problem.” Most mothers in this study described obesity as a “problem” in terms of “statistics,” and some referred to it as an “epidemic.” In relation to this, most mothers referenced what they observed in the community or heard on the news, as one mother indicated:

Well, I hear it’s a big problem and I hear a lot about it. I see kids, I see a lot of children that I think look overweight, and it’s troubling. Yeah, I mean, I hear the news and all the – it’s an epidemic and all this stuff. What it is like, 15 percent of kids under [the age of] 5 are overweight or something crazy like that? I mean you hear these crazy statistics. I don’t know how they got them, so I don’t know how valid they are, but they’re definitely scary.

While mothers provided inconsistent definitions of overweight and obesity, their explanations for the causes of these conditions were very similar. At the center of this problem, according to mothers in this study, were poor diets and sedentary lifestyles, as one mother described:

Lack of exercise, movement, eating the wrong stuff, high sugary foods, high carbohydrate type foods which the body converts into sugar; living a sedentary lifestyle. I mean . . . I think the kids being in a classroom all day long really contributes to it because they’re cutting [physical education], they’re cutting other kinds of stuff like that in the schools, which I don’t agree with. Kids should be allowed to move and run and play and not be, not use things like handhelds or videogames as babysitters.

While reduced physical education in schools and increased screentime activity were commonly identified as contributing factors to childhood overweight and obesity, what children ate was also acknowledged as a central issue, as yet another mother elaborated, “Just a lot of convenience foods, pre-packaged items, candy, processed

foods, fast-food. To me, that's the same thing that causes us [parents] to be obese. That we're giving [convenience foods] to our kids, it's not going to have any different effect. If it makes me fat, it's going to make her fat." The idea of prepackaged food and fast-food were commonly reported as poor food choices related to causing overweight and obesity in children and some mothers reported these foods were occasionally provided due to time constraints surrounding meal preparation. In regards to the decrease in physical activity, some mothers also discussed that safety concerns prevented them from allowing their children to play outside unsupervised or walk to school unaccompanied. For mothers in this study, the factors they believe contribute to overweight and obesity in children, poor food choices and lack of physical activity, are in direct contrast to how they defined healthy acknowledging non-processed, whole foods and exercise are preferred over pre-packaged, convenience foods and limited physical activity.

In light of their own children's weight statuses, mothers in this study made comparisons to children in their community generally, their children's peers, or other family members as children for confirmation of their perception of their own child, as one mother indicated, "I think he's average. He was big when he got here. He has always been towards the higher end when you are looking at his classmates but he's an October birthday so some of them are – he's older than some of them." One mother described her child's weight status based on her own, "Again, I feel like I don't have a healthy view on it. I mean, I feel like I see her maybe heavier than you know – because of me. Because of what I've gone through and still go through. So I feel like she's maybe a few pounds overweight?" All mothers in this study – although some hesitantly – accurately identified their children's weight status when compared to BMI calculated

from anthropometric data collected. BMI data indicated that 74 percent of the children were at a healthy weight, 16 percent were overweight and 10 percent were obese, according to CDC definitions.

Although mothers classified their children's weight statuses correctly in this research, many of them expressed concern about their children becoming overweight or obese in the future. Reasons for this concern included family histories of weight problems and not wanting "my kids to feel out of place like I did when I was growing up." Mothers with daughters specifically mentioned concerns about body image and dieting and not wanting to make their children self-conscious by addressing potentially poor eating habits. Mothers who were not concerned about their children's future weight statuses, on the other hand, felt that their "lifestyle and eating habits will not tend them towards child obesity."

Feeling of Responsibility

In relation to the type of food children eat and the amount and type of exercise children engage in, all mothers in this study felt that these issues were ultimately parents' responsibility, as one mother explained:

A child is a parents' responsibility. It's not the school system's. It's not the government's. You had that child. You are responsible for that child. You're bringing that child up in this world to eventually move on so you need to set them up with the right tools to live out there. Saying that someone is... a child that is overweight or obese is somebody's fault, ultimately it's the parent's fault. Maybe ignorance, they may think that what I'm giving my kid is good all along but when they see that their kid is [becoming overweight or obese], they need to do something and take responsibility for it.

This sentiment was particularly applicable in relation to the food children ate. While mothers agreed that they were responsible for doing the grocery shopping and preparing meals, they also agreed that they were important role models for their children's eating habits. All mothers in this study acknowledged parent modeling was a major factor for influencing their children's food choice decisions, as one mother explained, "[Parents] play an enormous role. I think that children eat like their parents and so what they see you doing, how they see you eating is going to be kind of the model for how they eat." Some mothers acknowledged that the modeling children observed was not always positive, as one mother explained:

I know my history and my side of the family, everybody's overweight. And I don't want her – she has eating habits a lot like me. I'm not a meat eater [but] I like to snack and things like that. So, I don't want her to go down the same road that I've gone down and so I'm trying to modify some of those... some of those behaviors that I know are probably the reason for my weight problem. If I fix my eating issues, that hopefully she will sort of follow suit and have better habits too.

In addition to modeling eating habits, mothers in this study also acknowledged that parent modeling was extremely influential to children in terms of living an active lifestyle, as another mother explained, "I don't think I can say I'm going to sit here on the porch you run up and down the sidewalk. That is not going to be – you know, I need to exercise as well." This feeling of being responsible for providing healthy food and encouraging children to be active was directly correlated with mothers' definitions of healthy.

The Lived Experience

Although mothers expressed similar understandings about what being healthy entails, what factors contribute to overweight and obesity in children, and the responsibility they feel in shaping their children's nutritional behavior, not all lifestyles consistently demonstrated what was articulated. While mothers shared similar understandings of what it meant to lead a healthy lifestyle and all acknowledged improvements could be made, mothers fell into two different groups regarding their home food environment: those who were successful and those who were not. Mothers who believed they were leading a healthy lifestyle indicated they had recognized their home food environment was not ideal and have been successful in making changes to prepare healthy meals at home regularly and provide healthy snacks between meals. Mothers who were not successful felt their family's dietary habits could be improved and were in the process of making changes in their home food environment by attempting to modify food shopping habits and paying better attention to food labels. Making dietary changes was a dynamic process for these mothers and no mother fell into either category perfectly all of the time. A small handful of mothers did not express that they were actively seeking changes in their home food environment.

While all mothers in this study agreed that in order for any type of change to be successful it was important to recognize why the changes were necessary, most indicated that recognition was not always easy. Additionally, all mothers agreed on perceived obstacles to providing healthy meals in their home food environment: time, cost, and child behavior. These perceived barriers were most significant for mothers who were not consistently successful in making changes in their dietary practices and had voiced an

inability to plan effectively. On the other hand, mothers who successfully recognized and implemented change in their home food environments attributed these changes to planning which allowed them to budget both time and money, overcoming perceived barriers.

Time, Cost, and Children's Behavior: Why Change is Difficult for Some

While all mothers agreed on what they believed to be challenges to providing healthy and nutritious meals to their families, this shared perception was most significant for mothers who were not successful in consistently implementing dietary changes, yet whose intentions were there. These mothers found it difficult due to three perceived obstacles: lack of time, high costs associated with “healthy” foods, and children’s behavior when attempting change. Time was associated with planning meals, preparing grocery lists and shopping, as well as preparing and cooking meals. The perceived challenge of cost was related to securing “healthy” foods which were identified as fresh, organic, grass-fed and more expensive than convenience, pre-packaged foods. And finally, the perceived barrier of children’s behavior was associated with the negative reactions mothers would encounter when attempting to change children’s food choice options in the home food environment.

The perceived obstacle of time was associated with accessing healthy food choices, planning, and meal preparation, as one mother indicated, “It takes a lot of thought to figure out what you’re going to cook for the week. Make sure you have everything you need. Planning out a healthy meal takes a lot of time.” The feeling of having limited time led some mothers to resort to choosing convenience foods – fast-

food, prepackaged or frozen food – over cooking fresh meals, because preparation of these foods was less time consuming, as one mother described, “There’s probably lots of stuff and I probably feed my kids it just because it’s more of a convenience. Like chicken nuggets – I know those are not the best for them – but by God they love them.” In this case, this mother’s perceived lack of time was used to justify providing foods she knew were “not the best.” Some mothers indicated that it was important or even necessary to shop at specialty grocery stores for healthy food options, which took additional time, as one mother stated, “I don’t have the time to go to a specialty store to get the best produce like *Whole Foods* or *Central Market*.”

Getting the “best produce” was not only associated with taking the time to shop at specialty stores, but with increased costs because “better options cost more.” Some mothers in this study associated organic foods with being the healthier, yet more costly option, as one mother described, “Trying to cut out chemically type foods . . . organic is sometimes twice the price . . . So definitely cost, because if you were really trying to go completely organic, then it would increase our grocery bill a good bit.” Another mother shared her experience with the cost of purchasing fresh produce, “I made a fruit salad for their birthday party – I spent \$35.00 on bits for the fruit salad. Fruit is really expensive and it would be a lot easier to go buy some prepackaged something.” Because healthy food was viewed as expensive, mothers often resorted to convenience foods which saved both time and money, as one mother summed it up, “It’s much less expensive to buy prepackaged food, processed foods [and] hot dogs. [Those] types of thing are much less expensive than buying fresh choices. Canned fruits and vegetables are less than fresh

fruits and vegetables. They are also easier to prepare – dump the can in the pot, warm it up, and you're good to go.”

Along with the challenge of making dietary or lifestyle changes due to perceived time and cost barriers, mothers also ran the risk of being the bad guy in their children's eyes. Some mothers felt they would be labeled as the “Meanest Mom” or would face conflicts if they altered children's food preferences they thought to be unhealthy, and thus avoidance became a barrier to making changes. Mothers admitted to giving in to food choices they may not prefer and sometimes elected to choose the drive-thru rather than “make them ride 20 minutes home screaming and mad.” Some mothers would give in completely for the sake of making “life easier” which entailed allowing their children to eat whatever they wanted because they “need to eat something,” even if this included what the mothers considered less than healthy food options such as candy, pizza, hamburgers, chicken nuggets and soda.

Planning: To Succeed, or Not to Succeed

Mothers in this study who were successful in making dietary changes agreed that for change to be long-lasting it should be introduced slowly and usually required them to make changes in their own behavior first, and then involve their children, as one mother explained:

It's hard at first but you have to – it's a family thing that you go through and it's a process. But you have to involve them in the process. You just don't throw everything out in the house and say I'm just doing this. You have to say – you have to explain to them why and how important it is. And we're all going to do it. And yeah, you have to tell them, yeah, I really want an *Oreo* too but that *Oreo* is not good for me and explain why.

Mothers who were successful also explained that while it took time and effort, they were able to budget both their time and expenses through careful planning, as one mother described:

It always comes down to planning. If you're going to save money; if you're going to lose weight; if you're going to eat healthy – anything – you have to plan ahead. And I tell people, don't feel like you have to plan six months in advance. That's – my own system – it took three solid years for me to get to the point that I could even do that. But in the beginning, it was just doing one week at a time. And it was strictly to save money because we were spending so much money.

Planning was essential to these parents' successes and included planning menus for the week, preparing grocery lists, researching sales, and making the time to cook. Planning helped mothers to not only budget their time, but also budget their money. Mothers in this study found the opportunity to study the weekly grocery store circulars to find the best buys, network with other parents on blogs to find good deals on particular food items, and purchasing extra portions of on-sale items to package for use later by canning or freezing.

DISCUSSION

Food habits are culturally transmitted through "intergenerational ripples" (Brewis and Gartin 2006) and include the differentiation between 'good' and 'bad' foods, the type of food eaten, how food is prepared, the social context of eating food, as well as how food is connected to rituals or celebrations. That is, culture is passed on generationally from parent to child and can be observed when children are taught to recognize that the usual diet consists of culturally specific foods and are encouraged to make morally-based food choice decisions based on what is 'good for you' (Mead

1943b). Therefore, parents' definition of the 'right' and 'wrong' foods is culturally acquired and based on what they themselves learned as children and determines what foods they make available in their home food environment. Most mothers in this study acknowledged selecting and preparing foods based on what they were exposed to as children themselves and made the same food available in their own home environments.

In a review evaluating the role of home food environment on child health and nutrition, Rosenkranz and Dziewaltowski (2008) suggest food habits are associated with the socio-cultural environment that includes customs and traditions of the family, parenting style, family structure, and eating patterns which have been shown to directly influence children's health and nutrition, as well as, weight status (Birch 1998; Birch and Fisher 1998; Brewis and Gartin 2006; Cutting, et al. 1999; Dettwyler 1989, 1992; Hughes and Shewchuk 2012; Keller, et al. 2013; May, et al. 2007; Rosenkranz and Dziewaltowski 2008). These cultural indicators were significant for mothers in this study and were represented by the shared perceptions regarding what it meant to be healthy, specifically how these perceptions were shaped and reflected in their own home food environments.

Mothers in this study had similar understandings of what healthy entails which included eating fresh fruits and vegetables, lean proteins, and engaging in physical activity; this shared perception is similar to findings of previous studies which indicated mothers' definition of healthy was consistent with biomedical and nutritional guidelines for a healthy diet (Brewis and Gartin 2006). In regards to childhood overweight and obesity specifically, mothers in this study also, as a group, generally lacked specific knowledge of the terms, yet had clear ideas about the causes of overweight and obesity

in children. Mothers' inability to clearly differentiate between overweight and obese may be credited to the fact that the two terms are often conflated in popular literature despite the clear cutoff at the 85th and 95th percentiles (Moffat 2010). Moreover, as previous research suggests, parents often fail to recognize their children are overweight or obese. This lack of recognition is associated with lack of concern for weight status and may further contribute to the inability to specifically differentiate between overweight and obese; it is not an immediate concern for these mothers.

Not surprisingly, mothers' limited source of information regarding childhood overweight and obesity was based on what they "heard" and, in this case, is a shared perception influenced by the media. These shared perceptions regarding how healthy is defined, their discussion of childhood overweight and obesity, and the influence of media are culturally constructed around the socio-cultural environment and reflects race/ethnicity, marketing exposure, consumption trends, and family values, traditions, and social circles (Rosenkranz and Dzewaltowski 2008).

In addition to their shared perceptions about health and nutrition and childhood overweight and obesity, mothers in this study overwhelmingly agreed that it is their responsibility to provide for and influence the food choices of their children, which is consistent with a survey-based study by Wansink (2006) identifying mothers as the nutritional gatekeepers of the household, and as such, mothers may not realize the extent of their power over their family's food choices. A national survey conducted by Lewin and Mead in the 1940s suggested that families will eat the food that is placed before them, regardless of preference – conferring power to the cook, or nutritional gatekeeper who procures and prepares food for the household and therefore influence current and

future food habits (Mead 1942a; Rosenkranz and Dzewaltowski 2008; Wansink 2002, 2006).

Consideration of the nutritional gatekeepers' cultural orientation and what they believe to be right and wrong foods determines if they feel their current food choices are nutritionally ideal for them or not and whether or not change is necessary in their home food environment. As mothers in this study admitted, recognizing and acknowledging change in any circumstance can be difficult as a parent, not only for their children, but for themselves as well. A few mothers admitted that the options they were provided as children may not have been the best nutritionally; therefore they try to provide better options for their own children. A few mothers confessed that they do not provide certain "healthy" foods to their children due to their own dislike for particular foods acquired as a child.

Although food choice decisions are culturally situated and based on how parents were raised, it is important for parents to realize these food choices can be changed even if these changes must occur generationally (Mead 1943a). All mothers in this study agreed that making changes in their home food environment could be beneficial. While some mothers were successful, others were not consistently successful, and a few were not actively seeking change in their home food environment. Following the work of Margaret Mead and Kurt Lewin in the 1940s, Wansink (2002) suggests that in order to make effective change in dietary or lifestyle habits, it is important to first identify current barriers; for mothers in this study these barriers included time, cost, and children's behavior.

For those mothers having made or making changes, some were able to overcome the perceived obstacles and some were not able to do so consistently. Mothers in this study who were successful recognized they could improve their home food environment and chose to make changes to provide healthier meal options for their children by creating meal plans, making grocery lists, budgeting, and making time to cook meals – even if this meant doing so on the weekend. These mothers’ successes are consistent with a study conducted by Abbot and Byrd–Bredbenner (2010) who indicate that by planning meals ahead of time, parents are more effective in modifying their children’s diets. By using meal planning tools these researchers found that nutritional gatekeepers could save money, shop for groceries more efficiently, and make fewer return trips for missed items.

For all mothers in this study, healthy food was associated with being costly and reported as a perceived challenge when attempting to provide more fresh foods rather than prepackage convenience foods in the home food environment. While some mothers were able to overcome this obstacle through effective budgeting which included researching ads and taking advantage of sales, others were not because they did not feel they had the necessary time to plan effectively. These results are consistent with a study by Miller and Branscum (2012) who found that price affected food shopping behaviors and the purchase of specific foods. Like some mothers in this study, participants in Miller and Branscum’s study agreed fresh fruits and vegetables were healthier and preferred, although more expensive than frozen or canned products (2012).

While parents often have the best intentions when making food choices, parents’ child–feeding practices may actually contribute to childhood overweight and obesity in

the form of reward and punishment associated with certain foods, resulting in dislike of ‘good for you’ foods (Hughes and Shewchuk 2012; May, et al. 2007; Mead 1943a, 1943b). These rewards and punishments are usually well-intended, but may backfire in the form of negative behavior from their children when attempting to make changes in their home food environment (Hughes and Shewchuk 2012). According to Wansink (2006), children’s negative behavior likely contributes to mothers’ feelings of frustration and the likelihood of them giving in to their children. Further, Scaglioni, et al. (2011) suggest that parents who accommodate children’s potentially unhealthy preferences by giving in to poor food choices, enable children’s avoidance of nutritionally ideal food choices. Some mothers in this study acknowledge frustration and laziness which contributed to them giving in to their children more frequently than they would like to by providing convenience foods and fast-food options they believed to be unhealthy and therefore allowed children’s behavior to be perceived as a barrier to change.

Despite the fact that some mothers in this study are not actively making changes in their home food environment, all mothers acknowledged that improvements could be made and as the primary decision maker regarding food choices, they are responsible for controlling the foods that enter their homes and are provided to their children. While it’s important to know what structural factors contribute to childhood overweight and obesity, it is equally, if not more, important to assess how parents day-to-day activities impact their home food environment decisions to better understand the lived experience of parents.

Although this study provides some insight into mothers’ perceptions of responsibility in their children’s health and nutrition, there are limitations. First, as

qualitative research, the results of this study are not generalizable to the greater population. In terms of SES, for example, this sample was not representative of Hays County, Texas as a whole due to the fact that 95 percent of mothers in this study reported household incomes greater than \$50,000. The average household incomes of families living in poverty, by comparison is approximately \$23,000. Thus, while mothers in this study associated healthy food with being costly, the ability to access these food products may have been based on choice and preference, not particularly inability due to lack of resources. Additionally, while Hispanics represent approximately 36 percent of the Hays County population, no mothers in this study identified themselves as such, allowing an opportunity for further research of a more ethnically diverse sample.

CONCLUSION

Through a qualitative examination of parents' experiences, this study demonstrates that parents share similar perceptions of what it means to live a healthy lifestyle which includes eating the right foods and getting the right kind of exercise, as well as what causes overweight and obesity in children. Mothers in this study also agreed that it is their responsibility to provide for and influence food choice decisions for their children, however, how they used this responsibility differs. Similar to Brewis and Gartin (2006), while mothers in this study verbalized nutritionally correct parent models of child-feeding, some mothers were unable to follow through with the preferred action due to the perceived barriers of time, cost, and children's behavior associated with making changes in the home food environment. Further, child-feeding practices are culturally constructed, often resulting in parents feeding their children in the same

manner as they grew up themselves. Because of this cultural construction, parents are often unable to recognize that these practices may not be the best nutritionally. Knowing how parents view their children's health and nutrition, combined with their lived experience, may provide valuable insight when designing effective programs aimed at reducing and preventing childhood overweight and obesity. For mothers in Hays County, Texas, effective planning tools which will allow them to manage their time efficiently and therefore plan, budget, and prepare healthy meals regularly may be beneficial to mothers and contribute to effective change in the home food environment and ultimately work towards reducing childhood overweight and obesity and improve the overall health and nutrition of children.

A. Appendix

TABLE 1. Participants' demographic characteristics.

Mother, n=19	
Age Range (in years)	28 – 44 (mean 37.4)
Percent non-Hispanic White	100
Highest Level of Education (percent)	
High School	5
Some College	32
College Degree	47
Graduate Degree	16
Household Income (percent)	
\$25–50K	5
\$51–75K	42
>\$75K	53
City of Residence	
Buda	5
Kyle	74
San Marcos	16
Unincorporated Austin	5
Child, n=19	
Percent Female	42
Age (percent)	
5	16
6	5
7	11
8	15
9	42
10	11
Calculated Body Mass Index (percent)	
Healthy ($5^{\text{th}} \leq x \leq 85^{\text{th}}$ percentile)	74
Overweight ($>85^{\text{th}}$ percentile)	16
Obese ($\geq 95^{\text{th}}$ percentile)	10

B. References Cited

- Abbot, Jaclyn Maurer, and Carol Byrd–Bredbenner
2010 A Tool for Facilitating Meal Planning. *Journal for Nutrition Education and Behavior* 42(1):66–68.
- Baughcum, Amy E., with Leigh A. Chamberlin, Cindy M. Deeks, Scott W. Powers and Robert C. Whitaker
2000 Maternal perceptions of overweight preschool children. *Pediatrics* 106(6):1380–1386.
- Berge, Jerica M., with Aimee Arikian, William J. Doherty, and Dianne Neumark–Sztainer
2012 Healthful Eating and Physical Activity in the Home Environment: Results from Multifamily Focus Groups. *Journal of Nutrition Education and Behavior* 44(2):123–131.
- Birch, Leann L.
1998 Psychological Influences on the Childhood Diet. *The Journal of Nutrition* 407S–410S.
- Birch, Leann L., and Jennifer O. Fisher
1998 Development of Eating Behaviors Among Children and Adolescents. *Pediatrics* S539–S549.
- Birch, Leann L., with J.O. Fisher, K. Grimm–Thomas, C.N. Markey, R. Sawyer, and S.L. Johnson
2001 Confirmatory factor analysis of the Child Feeding Questionnaire: a measure of parent attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite* 36:201–210.
- Brewis, Alexandra, and Meredith Gartin
2006 Biocultural Construction of Obesogenic Ecologies of Childhood: Parent–Feeding Versus Child–Eating Strategies. *American Journal of Human Biology* 18:203–213.

Byrd–Bredbenner, Carol, and Jaclyn Maurer Abbot

2009 Differences in food supplies of U.S. households with and without overweight individuals. *Appetite* 52:479–484.

Centers for Disease Control and Prevention

2012 BMI Percentile Calculator for Child and Teen English Version. Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion. <http://apps.nccd.cdc.gov/dnpabmi/>, accessed March 26, 2013.

Children’s Optimal Health.

2012 Hays Consolidated Independent School District Child Obesity By Neighborhood, Elementary, Middle and High Schools. Special Report. Austin: Hays CISD.

Combs, Susan

2011 Gaining Costs, Losing Time: The Obesity Crisis in Texas. Special Report. Austin: Texas Comptroller of Public Accounts, Data Services Division.

Crawford, David, with Anna Timperio, Amanda Teleford, and Jo Salmon

2006 Parental Concerns About Childhood Obesity and the Strategies Employed to Prevent Unhealthy Weight Gain in Children. *Public Health Nutrition* 9(7):889–895.

Cutting, Tanja M., Jennifer O. Fisher, Karen Grimm–Thomas, and Leann L. Birch

1999 Like mother, like daughter: familial patterns of overweight are mediate by mothers' dietary disinhibition. *American Journal of Clinical Nutrition* 69:608–613.

de la O, Angela, with Kristine C Jordon, Karen Ortiz, Laurie J. Moyer–Mileur, Greg Stoddard, Mike Friedrichs, Rachel Cox, Emily C. Carlson, Elizabeth Heap, and Nicole L. Mihalopoulos.

2009 Do Parents Accurately Perceive Their Child’s Weight Status. *Journal of Pediatric Health Care* 23(4):216–221.

Dettwyler, Katherine A.

1989 Styles of Infant Feeding: Parental/Caretaker Control of Food Consumption in Young Children. *American Anthropologist* 91:696–703.

- Dettwyler, Katherine A., and Claudia Fishman
 1992 Infant Feeding Practices and Growth. *Annual Review of Anthropology* 21:171–204.
- Hughes, Sheryl O., and Richard M. Shewchuk
 2012 Child temperament, parent emotions, and perceptions of the child's feeding experience. *International Journal of Behavioral Nutrition and Physical Activity* 9:64.
- Jain, Anjali, with Susan N. Sherman, Leigh A. Chamberlin, Yvette Carter, Scott W. Powers and Robert C. Whitaker
 2001 Why don't low income mothers worry about their preschoolers being overweight? *Pediatrics* 107(5):1138–1146.
- Keller, Kathleen, with Annemarie Olsen, Laura Kuilema, Meyermann, and Christopher van Belle
 2013 Predictors of parental perceptions and concerns about child weight. *Appetite* 62:96–102.
- May, Ashleigh L., with Margaret Donohue, Kelley S. Scanlon, Bettylou Sherry, Karen Dalenius, Patricia Faulkner, and Leann L. Birch
 2007 Child–Feeding Strategies Are Associated with Maternal Concern about Children Becoming Overweight, but not Children's Weight Status. *Journal of the American Dietetic Association* 107(7):1167–1174.
- Mead, Margaret
 1943a Dietary Patterns and Food Habits. *Journal of the American Dietetic Association* 19(1):1–5.
 1943b The Factor of Food Habits. *Annals of the American Academy of Political and Social Science* 225:136–141.
- Miller, Carla K., and Paul Branscum
 2012 The Effect of a Recessionary Economy on Food Choice: Implications for Nutrition Education. *Journal of Nutrition Education and Behavior* 44(2):100–106.
- Moffat, Tina
 2010 The “Childhood Obesity Epidemic”: Health Crisis or Social Construction. *Medical Anthropology Quarterly* 24(1):1–21.

- Rietmeijer–Mentink, Marloes, with Winifred D. Paulis, Marienke van Middelkoop, Patrick J.E. Bindels, and Johannes C. van der Wouden
2013 Difference between parental perception and actual weight status of children: A systematic review. *Maternal & Child Nutrition* 3–22.
- Rosenkranz, Richard R., and David A. Dzewaltowski
2008 Model of the home food environment pertaining to childhood obesity. *Nutrition Reviews* 66(3):123–140.
- Scaglioni, Silvia, Chiara Arrizza, Fiammetta Vecchi, and Sabrina Tedeschi
2011 Determinants of children’s eating behavior.” *American Journal of Clinical Nutrition* 94:2006S–2011S.
- Taboada, Melissa B.
2012 Hays district tip scales with 39 percent of students overweight. Austin American–Statesman. May 28.
- Towns, Nichole, and Jenifer D'Auria
2009 Parental Perceptions of Their Child's Overweight: An Integrative Review of the Literature. *Journal of Pediatric Nursing* 24(2):115–130.
- Wansink, Brian
2002 Changing Eating Habits on the Home Front: Los Lessons from World War II Research. *Journal of Public Policy & Marketing* 21(1):90–99.
2006 Nutritional Gatekeepers and the 72% Solution. *Journal of the American Dietetic Association* 1324–1327.

CHAPTER III

Applied Anthropology

By conducting applied anthropology research, my goal is to disseminate the results of this study in a manner that will be beneficial to the local population, as well as potentially the greater population, through publication. Overweight and obesity is a problem not only nationally, but locally in Hays County, Texas as well. Previous research has quantitatively established that school-aged children are in fact increasingly overweight and obese. This is problematic because overweight children are *at-risk* for becoming obese and obese children are *at-risk* for becoming obese adults. Understanding how parents interpret overweight and obesity and their role in child health and nutrition is essential in preventing overweight and obesity in children, as parents are the main contributors influencing children's eating habits.

Application of this work will begin by providing the results of this research to participating mothers. Allowing mothers the opportunity to examine the results of these findings will enable mothers to gain insight into what other parents in the Hays County say about child health and nutrition, overweight and obesity, barriers to providing healthy meals on a consistent basis, and what works and does not work for other mothers. All mothers in this study agreed upon perceived barriers that prevents or may prevent the provision of healthy meals consistently, and some mothers shared what allowed them to overcome these barriers. Through sharing these results with the mothers

included in this study, my goal is to provide them with a resource that may help them implement changes in their home food environments if they so choose.

Additionally, I plan to disseminate the results of my research through a local newspaper, the Hays Free Press. This will allow parents in the greater Hays County area the opportunity to gain insights into local parents' perspectives on child health and nutrition and hopefully will initiate a broader conversation about childhood overweight and obesity in the larger community. The study completed by Children's Optimal Health (COH) in collaboration with Hays Consolidated Independent School District (CISD) during the 2010-2011 school year found that 39 percent of students in grades 3-12 were overweight, 16 percent were obese, and 5 percent were severely obese. Knowing what works and does not work for parents in this area is significant considering the fact that 74 percent of children in this study attend school in this district. Involving the community in this dialogue through the use of an editorial piece will be beneficial.

Beyond local parents, I also plan to provide the results of my thesis research to local school districts that are planning to implement or have already initiated obesity prevention and reduction programs. In light of the recent report published by Children's Optimal health, Hays CISD, specifically, may find the results of this study particularly relevant and may assist school officials in designing programs aimed at reducing childhood overweight and obesity that may be under consideration as a result of the 2012 COH analysis. These results could be disseminated in a report to the school district board or an oral presentation at a school board meeting. Hays CISD also offers community education courses which would allow the opportunity to inform parents and children, as well as school district officials.

Finally, an additional opportunity for application of this research is through an oral presentation to the San Marcos Area League of Women Voters, a group that sponsored a School Nutrition Study Committee during the 2011–2012 school year in San Marcos, Texas, the county seat of Hays County. The School Nutrition Study Committee designed a survey to assess the nutritional value of school meals and snacks in the San Marcos CISD. The League’s goal was to determine if improvements should be recommended to the school district and if such improvements would be economical. The study was meant to gain information about school meals, breakfast and lunch, from a student and parent perspective. Based on fill-in-the-blank responses of suggested meal changes, the School Nutrition Study Committee intended to determine the economic feasibility of improvements to school meals and snacks. The League of Women Voters believed the league could have a direct impact on the national concern with childhood obesity and school nutrition. Combining the quantitative results of their study with the insight gained from this qualitative research may allow the League to further their agenda to improve school nutrition and reduce childhood obesity.

VITA

Monica Ann Molina was born in San Diego, California, on May 2, 1977, the daughter of Carol Louise Wegener and Santos Lightbourne Molina. After completing her coursework at Southwest High School, San Diego, California, in 1995, she entered San Diego State University. After attending San Diego State University for a short time, she decided to take time off of school. While working full-time, she returned to San Diego State University in 2000 to complete her degree in Chemistry with an emphasis in Biochemistry. During the summer of 2008, she found her passion for Anthropology and added it as a second major. She received her Bachelor of Science from San Diego State University in 2010. In September 2011, she entered the Graduate College at Texas State University–San Marcos.

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