Title
Obesity Risk among Preschoolers: The Role of Parental Stressors and Children's Emotional Regulation Skills

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Publication Date
2016

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Obesity Risk among Preschoolers:

The Role of Parental Stressors and Children's Emotional Regulation Skills

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy in Public Health

by

Mienah Zulfacar Sharif

2016

ABSRACT OF THE DISSERTATION

Obesity Risk among Preschoolers:

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Mienah Zulfacar Sharif

Doctor of Philosophy in Public Health

University of California, Los Angeles 2016

Professor Gilbert Chee-Leung Gee, Chair

Childhood obesity is associated with adverse health outcomes across the lifecourse. Accordingly, there is growing interest in psychosocial correlates of child obesity, including the role of stress and a child's social-emotional development on obesity risk. This dissertation examined the association between two parental stressors, relationship quality and parenting stress, on preschooler's emotional regulation skills and their obesity risk. Inspired by the Risky Families Model, the overarching theoretical argument and research questions this dissertation addresses is whether higher levels of parental stressors lead to poor emotional regulation skills of the child, and if poor emotional regulation skills contribute to increased risk of child obesity. In addition, this dissertation assessed whether certain parenting resources, including the number of household routines and socioeconomic resources, served as protective factors.

I used data from the Early Childhood Longitudinal Study-Birth Cohort which provides a nationally representative sample of children born in the United States in 2001. To include a

more comprehensive analysis of obesity risk, I examined 8 outcomes: frequency of family meals, soda consumption, fast food consumption, fruit consumption, vegetable consumption, sleep duration, odds of exceeding the 2 hour guideline for daily screentime and weight status (obese/not obese). I conducted multivariate Ordinary Least Squares regression , logistic regression, or negative binomial regression to show the relationship between 1) each parental stressor and a child's emotional regulation skills, 2) a child's emotional regulation skills and 8 obesity risk factors and 3) each parental stressor and the 8 obesity risk factors. For each analysis , I included measures of sociodemographic characteristics, socioeconomic resources, child-level characteristics and parent-level characteristics as covariates. Additionally, I tested whether protective factors moderated these associations including interaction terms.

Analyses were based on an analytic sample of 4,000 co-residential mother-father dyads at the preschool wave. In general, the results suggested that parental stressors were associated with a child's emotional regulation skills and obesity risk. However, these associations often became non-significant once parent-level characteristics that influence family functioning, or the general social-emotional climate of the household, were added to the models. Thus, the findings indicated that parent-level characteristics including maternal depressive symptomology, conflict resolution styles and the number of household routines may influence a child's behavior and obesity risk above and beyond the specific stressors this dissertation focused on. In addition, the overall findings also suggest that the relationships between parental stressors and child outcomes vary by parental gender as the associations are stronger among mothers than fathers. The results did not support the hypothesis that parenting resources moderated the association between the parental stressors and a child's emotional regulation skills, but there was partial support for

moderation when examining the association between a child's emotional regulation skills and the obesity risk factors.

This dissertation contributes to the literature on psychosocial correlates of child obesity by highlighting the importance of examining familial characteristics that influence the general social-emotional climate of the household and the role of parents' gender to better understand how the family environment and specific behaviors and practices influence early childhood health and development.

The dissertation of Mienah Zulfacar Sharif is approved.

Alice Ann Kuo

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University of California, Los Angeles

2016

DEDICATION

This dissertation is dedicated to children around the world who have been denied their human rights--including their right to a childhood. Fighting for your rights and for a better reality for future generations are my ultimate inspirations.

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Acknowledgements

This dissertation was supported by a Pre-Doctoral Fellowship through the National Institute of Aging (R24HD041022) and the California Center for Population Research (T32-AG033533, PI: Costa). I also want to thank Dr. Bergen Nelson for helping me access the data.

I am grateful for the support from my dissertation committee. I owe the completion of this degree to the encouragement and guidance I received from Gilbert Gee, Deborah Glik, Anne Pebley, Patrick Heuveline and Alice Kuo. I appreciate how you all emphasized the real-world relevance of my research questions and findings. I can't thank you each enough for your grounded approach towards research and mentorship. Gil, you took me on as your student when I was uncertain, myself, if I could/would finish. Your encouragement motivated me and you are the reason I finished this dissertation. I feel lucky for the personal and academic advice you have provided me with. I hope to "pay it forward" to others in the future who, like me, needed help "shaking off" the self-doubt and negative noise from others and redirecting that energy towards pursuing their goals. I also want to express gratitude to Deborah Glik and Michael Prelip who have been my academic "mom" and "dad." Thank you for all the support and opportunities you provided me with. Deborah Glik and Alice Kuo, thank you for giving me a sense of belonging not only in the program but in the field of community health sciences. Chandra Ford, working with you and Jenn on the Black Lives Matter paper was one of the most rewarding experiences I had in graduate school. Thank you for reminding us that being successful in academia doesn't mean we have to lose sight of our passion nor our commitment to social justice. I'd like to thank Joni Ricks who helped me at each stage of the analyses and endured my moments of pure (statistical) confusion and my "but why" questions throughout the whole process. You truly have a gift and I feel lucky to have met you at this stage. You taught me pretty much all I know about

conducting secondary data analyses. I want to thank Dr. Suzanne Bianchi who has been an inspiration throughout this whole process. Working with you was my first exposure to conducting secondary data analyses and I appreciate your nurturing, patient and grounded approach with a student like myself who had no idea what she was doing. Your work has set the foundation for my own research agenda and getting to meet you was one of the biggest gifts I received while being at UCLA. I hope to keep the spirit of your research on gender equality alive. I also want to thank my undergraduate advisors at Smith College, Martha Ackelsberg and Nola Reinhardt. You both made a huge impact on me personally and academically. You both were the first two people who even brought up the idea of me pursuing a Ph.D. Throughout the years, I have yet to see an even close match to your level of mentorship nor the academic rigor of your teaching styles. You both set the bar high for the educator and mentor I hope to be. I hope to make you both proud.

In all honesty, this dissertation would have not been possible without my "village." I am overwhelmed and deeply touched by the support I have received from the following people: Shemra Rizzo, Joseph ("Joe") Mango, Jennifer Tang, Starr Banks, Caroline Elson, Jeremiah Garza, Goleen Samari, Sylvia Zamora, Lauren "Texas" Perry, Brittany Morey, Akilah Wise, Alani Price, Johanna Cardenas, Melissa Kelley, Angie Denisse Otiniano Verissimo, Nell Wollner, Kiyomi Tsuyuki, Rebecca ("Becca") Pauly, Alysa Phillips, Christi Peterson, Sonja Perryman, Jessie Gaskell, Sophia Savage, Kristen Kieley, Vivan Alfonso, Michelle Maurer, Vito Zulfacar Sharif, Ed Mitchell, Lauren Perez and Missy Rawnsley. You've each inspired and motivated me to finish in different ways and at different times. You've kept me grounded along the way and have made me laugh and feel "whole" when I was feeling lost and far from myself.

Most importantly, you've reminded me of my values, my commitment to social justice and what "really matters" in life.

Lastly, I want to thank my "family," both biological and fictive kin. I could go on for pages about how you've each supported me and how much you mean to me. Your love and energy are evident throughout the pages of this dissertation: EJU (Elinam Dellor, Jackie Torres, Uchechi Mitchell), I'm so grateful for our personal and professional sisterhood. Jesse Jack McGowan (like I've always said, at the very least, you deserve a P and half an "h" after all of this), Jennifer Garcia (I met you as my "academic crush" and now you're a "favorite" on my cellphone, who would have ever known?), Hector Alcala (my brother from another mother, meeting you is one of the best things that have happened to me while at UCLA), Alvaro Vela, Hannah Coleman and Wiley: I will never forget all the delicious home-cooked meals and finishing this dissertation in the warm and welcoming house you've built together. Chu Chu, thank you for staying up with me late at night and on the weekends to watch YouTube videos on statistical analyses, for making me laugh when I panicked about my null findings and for bringing pure joy and a sense of comfort in my life every day. So long as you're around, Chu Chu, there is no such thing as a bad day. Lastly, Mama and Adda, what a journey it has been down this "river," continent to continent, since '82. We've been through so much, yet, we have stuck together. I am forever grateful for work ethic and the sense of resilience and humor you've instilled in me. You are my pillars and everything I am and everything I do is because of you both. I hope you're proud of me.

F.T.W.H.

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PEER-REVIEWED PUBLICATIONS

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Chapter 1: Introduction

The obesity epidemic is currently one of the most critical public health issues and policy concerns in the United States (U.S) (Dietz, 2015). The most recent analyses of the National Health and Nutrition Examination Survey (NHANES) indicate that over one-third (32%) of children ages 2-19 were overweight and 17% are obese (Dietz et al. 2015; Skinner et al., 2014; Ogden, et al. 2016). Although a recent study showed that obesity rates have stabilized among preschoolers, the rates are still alarmingly high as nearly 10% of children ages 2-5 are obese (Ogden et al., 2012) and rates of severe obesity among young children are increasing over time (Skinner et al. , 2014). Obesity among preschool-age children is associated with an increased risk of obesity later on in life (Klebanov et al., 204; Lo et al. 2014;Pan et al. 2012), Anderson et al., 2009; Anderson et al. 2012; Hughes et al., 2015; Hughes et al. 2015)

Gaps in the Literature

Most childhood obesity prevention efforts have focused directly on improving dietary habits by increasing access to fruits and vegetables or changing parental behavior to encourage more physical activity among school-aged children. However many of these obesity prevention efforts have been deemed largely ineffective (Anderson & Whitaker, 2010; Parks et al., 2012; Aparacio et al., 2016), especially given the fact that most dietary habits are established before children enter school (Cunningham et al., 2014; Dev et al., 2013). Although it is widely recognized that the home environment is highly influential in a child's health and development, most research on familial determinants of child obesity has focused on food consumption and feeding practices leaving other facets of the home environment largely understudied.

Researchers are urging that studies that go beyond the issues of eating, dietary intake and meal context to assess the broader family context, defined in this dissertation as the social and

emotional climate of the household (Bost et al., 2014; Sleddens et al, 2011; Kitzmann et al., 2008). These factors influence not only dietary behaviors but also a child's social-emotional development, including stress responses, which impact both obesity risk and a child's health and development more generally. These indicators of family functioning and family dynamics can help explain the varying effects of obesity prevention programs (Kitzmann et al., 2008). For example, Kitzmann and colleagues (2008) argue that households with more negative emotional climates are less likely to adopt or maintain healthful behaviors (both related and unrelated to dietary intake) associated with reducing a child's obesity risk. Moreover, the growing interest in the role of household routines (Anderson & Whitaker, 2010) and sleep (Jones et al., 2014) underscore that behaviors and practices within the household can influence obesity beyond the eating, dietary intake and feeding context.

Many researchers now point to a wide range of stressors (including financial and social) within the family (Puder & Munsch, 2010; Parks et al., 2012; Schmeer, 2012; Garasky et al., 2009; Shankardass et al., 2014; Suglia et al., 2012) and a child's emotional regulation skills (Bost et al., 2014; Graziano et al., 2010; Frankel et al. 2012) as influences of early childhood obesity risk. This is because stress can influence parenting styles. This is supported by recent studies positing that it is not just the specific activity or behavior between a parent and child that influences the child's weight but the overall dynamic and interactions between family members that has more of an effect on not only dietary behavior but on a child's stress responses, including their emotional self regulation (Bost et al., 2014; Frankel et al., 2012).

Motivated by the growing body of research on stress and obesity risk among adolescents and adults, there is growing interest in the intersection between social-emotional development and their physical health in the first few years of life. This dissertation adds to this body of

literature by examining the role of emotional regulation on obesity risk among preschool-aged children. Emotional regulation can also be conceptualized as a child's ability to handle their emotional responses to stressors and/or emotional experiences in a socially acceptable and appropriate manner (Morris et al., 2007). Emotional regulation influences the type of (i.e. anger, sadness) and intensity of emotions a child expresses (Morris et al., 2007).

This line of research integrates concepts from sociology, developmental psychology and public health to advance our understanding of the psychosocial correlates of obesity with the goal of identifying how early childhood exposure to stress impairs a child's social-emotional development to increase their obesity risk. This dissertation, guided by the Risky Families Model, contributes to the literature by elucidating novel stress-related risk factors parental relationship quality and parenting stress that place some children at a higher risk of obesity.

Specific Aims and Overview of Dissertation

The goal of this dissertation was to address three research aims to help fill the gaps in the literature on how parental stressors and emotional regulation skills can influence a preschoolers' obesity risk. The following three aims were addressed by conducing secondary data analysis of the Early Childhood Longitudinal Study Birth Cohort (ECLS-B), a nationally representative sample of children born in the US in 2001.

Specific Aim #1. The first aim examined the association of parental stressors (parenting stress and parental relationship quality) on a preschooler's emotional regulation skills. This aim also assessed household routines and socioeconomic resources as potential moderators.

Specific Aim #2. The second aim assessed the relationship between emotional regulation skills and obesity risk among preschoolers (measured by seven behavioral indicators and one weight

status indicator). This aim also tested household routines and socioeconomic resources as potential moderators.

Specific Aim #3. The third aim tested the relationship between parental relationship quality and a preschooler's obesity risk. This aim also assessed whether the main association is partially mediated by a child's emotional regulation skills. Lastly, this aim examined the relationship between parental relationship quality at earlier time points and a child's risk of being obese at preschool.

The dissertation is organized as follows. Chapter 2 provides an overview of the main constructs this dissertation covered. This chapter introduces the consequences and etiology of childhood obesity as well as demographic changes and family life in the US that may influence child obesity. In addition, this chapter describes how parents influence both emotional regulation skills and child obesity in general as well as how parental stressors influence both of these outcomes. Chapter 3 provides an overview of the theoretical framework used to guide the dissertation and presents a conceptual model. This chapter also includes the research questions for this dissertation. Chapter 4 reviews the dataset, research design, variables and analytic methods used to model each research question. Chapter 5 provides an overview of the characteristics of the sample used in the analyses as well as descriptive statistics on the main variables of interest. In Chapters 6, 7 and 8, I present results for the nested weighted regression models for each of the aims respectively. Lastly, Chapter 9 presents a discussion of findings along with the strengths, limitations and public health implications of the present study.

CHAPTER 2: Literature Review

This chapter presents an overview of the central constructs and arguments that guided this dissertation. First, I present an overview of the consequences and risk factors for obesity and general description of demographic changes that are relevant to the current study. Then I introduce each of the main constructs tested in this dissertation and explain how they relate to each other. First, I discuss how parents influence child obesity, in general. Next, I specifically discuss how parental stress as well as the two indicators of stress this dissertation focused on, parental relationship quality and parenting stress, influence child obesity risk. I then review how parents influence a child's emotional regulation skills and describe how emotional regulation skills may influence child obesity risk. Lastly, I introduce additional factors that can influence both emotional regulation skills and child obesity including parental resources that can act as protective factors to buffer the adverse effects of parental stress on child outcomes.

Consequences of Child Obesity

Children typically gain weight during the first year of life followed by a period of either weight loss or stabilization until about age 6, after which weight starts to increase again and continues into adolescence and adulthood (Klebanov et al., 2014; Lo et al., 2014). This period of time when BMI-for-age starts to increase after reaching its lowest point is known as the "adiposity rebound" (Whitaker, et al., 1998). However, early adiposity rebounds, occurring before the age of 5, such as those indicated by the high rates of obesity among preschool-age children, is a critical concern as it is associated with increased risk of obesity later on in life (Lo et al., 2014; Klebanov et al., 2014; Dietz et al., 2015).

The health consequences of childhood obesity can persist throughout the lifecourse. In childhood, obesity is also associated with higher risks of type 2 diabetes, sleep apnea, asthma,

and gastro-esophageal reflux (i.e., heartburn) (Fradkin et al., 2015). Obese children are more likely to be obese adults (Dietz et al., 1998; Hughes et al. 2015; Klebanov et al., 2014), and severe adult obesity is more common among adults who were obese children. Longitudinal studies have established that obesity among preschool aged children is associated with a wide range of health risks in adulthood including certain types of cancers, diabetes, as well as high blood pressure and high cholesterol (Freedman et al., 2007; Whitaker et al., 1998; Lo et al., 2014).

Moreover, obesity results in excessive societal and economic costs. Obesity-related diseases will add $48–66 billion per year to healthcare costs and substantial loss of productivity, estimated around $390–$580 billion, due to lost work days or absenteeism (Wang et al., 2011). Obese children are also at a greater risk for social and psychological problems (Puhl & Latner, 2007) such as poor self-esteem and discrimination due to weight bias among peers, educators and even parents (Davison & Birch, 2001). The experiences of weight bias and its consequences may impede social, emotional and academic development and may also exacerbate adverse health outcomes that children already face (Puhl & Latner, 2007; Washington, 2011). For example, the discrimination and social consequences of childhood obesity may impact one's feelings of self worth and career aspirations resulting in lower levels of education and higher levels of poverty among adults who were obese as adolescents (Clarke et al., 2010). Moreover, should current obesity trends continue, it is projected that the current generation of children will be the first to have shorter life expectancies than their parents (Klebanov et al., 2014).

Etiology of Obesity

Energy Balance

The etiology of obesity is multifaceted. The most direct explanation is based on the concept of energy balance. Energy balance occurs when the amount of energy consumed equals the amount of energy expended. The two main component(s) of energy balance are: energy intake through dietary habits and energy expenditure through physical activity (Dietz & Gortmaker, 2001; Davison & Birch, 2001; Aparacio et al., 2016). When the amount of energy consumed is greater than the amount expended, the storage of energy as fat can cause an increased level of fat in the body, which leads to weight gain (Dietz & Gortmaker, 2001).

The most commonly studied risk factors for child obesity are those directly relating to energy balance including: fast food consumption (characterized in nutrient-poor food high in salt and saturated fat), sugar-sweetened beverage (SSB) consumption (drinks full of "empty calories" and high levels of sugar considered risk factors for type 2 diabetes and metabolic syndrome). However, recently, researchers have also recognized the complex etiology of obesity in current social and cultural environments. For example, daily screentime exposure (i.e. television, DVDs/videos, computers, tablets, videogames) has increased substantially over the past two decades, and is associated with both increased sedentary behavior and child obesity (Bost et al., 2014; Jones et al., 2014). Moreover, screentime is considered a risk factor for obesity because of the unhealthy advertisements children are exposed to (Jones et al., 2014). In regards to the latter point, the American Academy of Pediatrics suggests no more than 2 hours of screentime per day for children (ages 2 and above) (American Academy of Pediatrics, 2001). A growing body of literature is also focusing efforts on sleep habits and child obesity, and evidence suggests that this association is strongest among young children (Hart et al., 2013; Jones et al., 2014). Shorter

sleep duration is associated with higher caloric intake and weight status (Hart et al., 2013) and, among preschoolers, is associated with weight status later in childhood (Jones et. al 2014).

A second approach to understanding obesity risk comes from the lifecourse perspective that posits that the timing of experiences in early life may have long-term effects on obesity outcomes (Dixon et al., 2012). Epigenetic studies suggest that experiences in utero may impact a person's genetic expression, leading to greater obesity risk that can be passed from generation to generation (Gluckman & Hanson, 2008; Savage, Fisher & Birch, 2007). The dramatic increases in childhood obesity over the last 30 years are unlikely to be due genetics (Savage, Fisher & Birch, 2007), however, these assertions highlight a need to widen the scope of public health efforts towards understanding first understanding larger demographic changes that shape familial, social and environmental factors and second, how changes within the family influence energy balance, stress exposure and obesity (Savage, Fisher & Birch, 2007).

Demographic Changes and Family Life in the United States

Historical and social contexts often frame how we conceptualize family life. A discussion of how the family environment influences child health and development is incomplete without recognition of the demographic changes that have changed the dynamics and realities of American families.

For example, since the 1950's the US has experienced increased rates of divorce (at least until 1980), a postponement of the age of first marriage and higher rates of cohabitation (Bianchi, 2014). In addition, there has been a rise in non-marital childbearing and a rapid incline in single-parenthood, predominantly among mothers, (Bianchi, 2014; Bianchi & Milkie, 2010) but the share of single fathers is also growing (Bianchi, Raley & Casper, 2012). Thus, in the US today, there is no longer one, single, dominant family structure. Another demographic change

since the 1960s that has changed family life in the US is the increase in women's employment in the formal labor force (Bianchi et al., 2010; Bianchi et al., 2012).

Employment, particularly among mothers, has implications for family processes that can influence child's health. Guided by Role-Strain theory, researchers explain this is largely because traditional norms and beliefs about gender roles continue to prevail despite the increase in women's educational attainment and participation in the formal labor force and the increase in fathers' time spent with children and on child-rearing tasks. As a result of the gendered care burden on mothers, mothers employed in the formal workforce may have less time, physical and emotional energy for various activities (e.g. preparing a family meal, reading and singing to a child) that are associated with a child's optimal health and development. Moreover, the concept of work-family spillover can help the relationship between unequal division of household chores and lower marital quality among dual-earner couples (Cooklin et al, 2015). Thus, increasing pressure on women to fulfill their roles within the formal labor force as well as within the household can not only impact their own mental and physical health but also impact their stress levels by limiting their time with children and compromise marital relationships. Moreover, it is imperative for more public health efforts to investigate the potential contributions these trends may have on disparities, particularly in regards to childhood obesity as changes in American family structures and processes may have also had inequitable effects on more vulnerable population groups.

Scholars posit that norms and behaviors in regards to parenting have coincided with the changes in gender relationships and demographic trends (Lang et al., 2014). Specifically, there is more emphasis on engaging in, or involving, fathers in child development and health research (Lang et al., 2014; Cabrera et al., 2011; Khandpur et al., 2014; Frankel et al, 2015; Cole et al.,

2008). Research on fathers, albeit limited, has demonstrated that fathers influence children's obesity risk including a study by Wake and colleagues (2007) that found that father's parenting style influenced a child's weight, physical activity levels and dietary behavior but found no association among mothers. Moreover, there is evidence that the dietary intake of mothers and fathers are correlated with behavior of one parent influencing the other thereby signaling the importance of taking the behavior of both parents into account when examining the household's influence on child behavior (Walsh et al., 2014). Despite recent evidence that fathers are, in fact, involved in the organization of their child's food consumption including a study based on national data found that 72% of fathers with co-residential children under the age of 5 reported eating a meal with their child every day, child obesity research in the United States has not kept up with the changes in family life as much of the literature still is highly "maternal-centric" (Khandpur et al., 2014). Interestingly, most studies on fathers' influence on young children's obesity risk are based in Australia (Wake et al., 2007; Freeman et al., 2012; Morgan et al., 2014; Walsh et al., 2014; Walsh et al., 2015). Thus, this dissertation is one of limited students using nationally representative data to examine the role of fathers in preschooler obesity risk in the U.S.

Parenting and Child Obesity

The family environment plays a critical role in a child's risk of obesity. Davison and Birch (2001) explain that, "all risk factors for the development of childhood overweight have their initial beginnings in the family of origin." Thus, in recent years there is increasingly emphasis on the role of primary caregivers on a child's early diet and weight status (Tanner et al., 2014; Khandpur et al., 2014; Wake et al., 2007). This is because the first few years of life can illuminate how children transition to a modified adult diet and how these earliest experiences

influence the development of dietary preferences, dietary behavior and obesity risk over the lifecourse (Anzman, Rollins & Birch, 2010). During the first five years of life, parents influence how children learn "what, when and how much to eat" (Savage, Fisher & Birch, 2007). By the age of 3, children no longer eat based on deprivation or hunger as their dietary intake becomes increasingly influenced by parental cues (Birch, Savage & Ventura, 2007).

Research on childhood obesity has identified several ways in which parents can influence their child's weight status. For example, parents create the home food environment, which in turn influences a child's exposure and access to certain foods (Savage, Fisher & Birch, 2007; Hughes et al., 2015). Children are born with a genetic predisposition to prefer sweet tastes and eventually develop a liking for salty tastes but are less likely to prefer bitter and sour tastes (Savage, Fisher & Birch, 2007). Therefore, parents can provide their children with a more balanced diet by exposing them to more healthful food and limiting access to food high in sugar and salt. Parents also shape their child's dietary preferences and behavior by modeling (Frankel et al., 2012; Davison & Birch, 2001; Aparacio et al., 2016).

Parental feeding practices also influence their child's obesity risk. Despite the current obesegenic food environment, common feeding practices include using food (often energy-dense and high in salt and sugar) as a reward, pressuring children to "finish your plate" and restricting access to certain foods are all associated with child overweight (Frankel et al., 2012). These practices prompting a child to eat based on these external cues, including emotions and parental praise, can override a child's response to their own satiety level, thereby increasing risk of overeating and also of being overweight (Frankel et al., 2012; Rhee et al., 2008).

Parents also provide the opportunities for family meals associated with higher levels of fruit and vegetable intake and lower BMI levels (Rhee, 2008; Skelton et al, 2012; Fiese et al.,

2016). The context of the family meal is an opportunity for parents to help their children develop positive eating behavior, including self-regulation, and model healthy dietary behavior (Frankel et al., 2012; Fiese et al., 2016).

Family Stress, Child Development and Child Obesity

Family Stress

Although there is a growing interest in the role of the family in childhood obesity, much of the research on the family context has focused on specific parenting practices, or behavior, particularly in the feeding/eating context (Shloim et al., 2015; Hughes et al., 2015; Rhee, 2008; Frankel et al., 2012). Given that familial characteristics in general, including behaviors that occur outside the eating context, influence a child's health and behavior, there is a need for more research on the social emotional climate of the household. One potential strategy for addressing this gap in the literature is to study how familial, or household, stress influences early childhood obesity.

Family stress is defined as ''pressure or tension in the family system" and stressors and ''stressor events" are conditions and occurrences that provoke change in the family system (Garasky et al., 2012). Family stress and stressors can arise from individuals, households, and contextual factors external to the family (Garasky et al., 2012). Family stressors that have been identified to contribute to a child's obesity risk include: financial strain, marital disruption/changes in family structure, poor parental marital quality, poor parental mental health, chronic physical health conditions, domestic violence, child abuse, substance abuse, lack of cognitive stimulation and emotional support, housing issues, and parental incarceration (Garasky et al., 2012). This dissertation focuses on two novel familial stressors; parenting stress and parental relationship quality.

Parenting stress, defined as "the negative mental response attributed to the self and/or the child created by a series of appraisals made by each parent in the context of his or her level of commitment to the parent role" (Abidin, 1992), is influenced by a dynamic interplay of household, parental, child and environmental factors (Williford et al., 2007; Walton et al., 2014). Parenting stress is conceptualized as a "mismatch between the perceived demands of parenting and the resources available to meet those demands" (Williford et al., 2007). There is a robust body of literature associating parenting stress with a myriad of adverse child outcomes including emotional regulation (Williford et al., 2007), cognitive development, literacy skills, academic achievements and social competence (Crnic et al., 2005; Molfese et al., 2010). Moreover, it is well established that parenting stress is associated with maladaptive parenting practices, characterized by lower levels of engagement with children as well as less warm and secure parent-child interactions (Williford et al., 2007; Walton et al., 2014), that compromise a child's social emotional development.

Poor **parental relationship quality**, defined as "parents not getting along and experiencing high levels of conflict" (Waldfogel et al., 2010), is a chronic psychosocial stressor for both parents and children (Troxel & Matthews, 2004; Waldfogel et al., 2010). Poor parental relationship quality is associated with less optimal parenting practices and styles, which then adversely affects the child's behaviors, development and health (Waldfogel et al., 2010; McCoy et al., 2013; Berger & McLanahan, 2015).

The effect of parental relationship quality on children's health suggest that children in two-parent households with high levels of conflict are at a higher risk of obesity than their peers in two-parents households with lower levels of conflict (Troxel & Matthews, 2004). Even more striking is that weight outcomes for children in two-parent households with high levels of

conflict are indistinguishable from children in single-parent homes, a consistent predictor of child obesity (Musick & Meier, 2010). This is explained by the higher levels of stress and impaired parenting practices children are exposed to in households with poor parental relationship quality. This has led family researchers to challenge the preponderance of research exclusively focusing on the effects of family structure (i.e. single vs. dual-headed households) on child development as findings suggest that marriage dissolution can, in fact, be beneficial for children in households with high levels of parental conflict (Brown, 2010; Arkes, 2012).

Little research has focused on how parenting stress on preschoolers' obesity risk (Walton et al., 2014; Parks et al., 2016) and there are no published studies on the effect of parental relationship quality on obesity risk at that young of age. However, studies on other indicators of parental stress provide potential explanations, or pathways, about how parenting stress and relationship quality might influence a child's behavior and thereby their obesity risk.

Parental stressors may contribute to a child's obesity risk through several mechanisms largely arising from the reduced time spent with children and less effective parenting strategies that arise from higher levels of stress. Briefly, parental stress can increase a child's obesity risk via: 1) increased energy balance due to provision of less healthful diets including high levels of fast food consumption (Parks et al., 2012), 2) less healthy behavior and weight gain among parents which can then influence children's (health-related) attitudes and behaviors, 3) lower likelihood of modeling and engaging in physical activity (Parks et al., 2012) and higher rates of watching television (Bost et al., 2014), 4) the increase of stress responses of children as a result of exposure to parental stress, (Shankardass et al., 2014) and 5) less household routines which can decrease a child's likelihood of engaging in obesity risk factors and is associated with lower BMIs (Arkes, 2012; Parks et al., 2012; Jones et al., 2014).

Child Development: Emotional Regulation Skills

As noted above, parenting stress can directly influence a child's obesity risk by impairing parenting practices that limit a child's opportunities to engage in health-promoting behaviors and modeling of maladaptive coping mechanisms for stress, including emotional eating, that influence children's behaviors as well. However, parental stress can also indirectly influence obesity through the child's emotional regulation skills.

The family context is considered the most influential context for a child's psychosocial development (Flouri et al., 2015; Morris et al., 2007, Muniz et al., 2014; Berge & McLanahan, 2015). By the second half-year of life, an infant's individual differences in emotional regulation, defined as "internal and external processes involved in initiating, maintaining, and modulating the occurrence, intensity, and expression of emotions" (Morris et al., 2007), become apparent and are also increasingly influenced by parents (Frankel et al., 2012). Emotional regulation can also be conceptualized as a child's ability to handle their emotional responses to stressors and/or emotional experiences in a socially acceptable and appropriate manner (Morris et al., 2007). Emotional regulation influences the type of (i.e. anger, sadness) and intensity of emotions a child expresses (Morris et al., 2007). Emotional regulation strategies are often classified as either maladaptive/ineffective or adaptive/effective (Aparacio et al., 2016).

Children learn to regulate their emotions via observation of their parents' emotional regulation, specific parental behaviors relating to a child's emotions including how parents socialize their children to regulate their emotions, and the overall social-emotional climate of the family (Morris et al., 2007). Parents facilitate the development of emotional regulation by responding to distressed children in a supportive and consistent way as early as the infant stage (Frankel et al., 2012; Frankel et al., 2015). Evidence for these claims have been substantiated by

work with rats showing that pups that received more maternal care, expressed in the form of licking and grooming during the first week of life, showed lower levels of stress hormones compared to rats whose mothers licked them less as pups (Shonkoff et al., 2012). Moreover, parents help children regulate their emotions by how they respond to and comfort their child's expression of negative emotions and how they arouse positive emotions through playing and other stimulating interactions (Frankel et al., 2012; Aparacio et al., 2016). Development of emotional regulation is also influenced by physiological dysregularities as a result of a child's direct experience of stress as well as indirectly through parental stress.

Parental stress is associated with less optimal parental emotional regulation (i.e. conflict resolution) as well as worse parenting practices in regards to addressing children's emotions (Morris et al., 2007), both of which are critical for a child's development of positive emotional regulation skills. This is because stress can "drain" parents of emotional and physical energy that can have a negative "spill-over effect," such as a parent being more cold, unresponsive, irritated and/or angry with their child (Troxel & Matthews, 2004). Stress can also impair a child's development of emotional regulation skills via a decrease in household routines/rules (Muniz et al., 2014). Exposure to stressors can also undermine a children's sense of emotional security and their ability to regulate their emotions (Troxel & Matthews, 2004; Morris et al., 2007). As a result, children are more likely to become highly emotionally reactive or are less emotionally secure and therefore less open to expressing emotions, both of which are considered indicators of poor emotional regulation skills (Morris et al., 2007).

There is a robust body of evidence documenting that poor parental relationship quality, is associated with compromised emotional regulation skills in children (Frankel et al., 2015; Troxel & Matthews, 2004; Morris et al., 2007). Potential explanations of these findings are that poor

parental relationships are associated with less time spent on child-rearing tasks and with children (Troxel & Matthews, 2004; Musick & Meier, 2010; Fagan & Lee, 2014) both of which are critical for a child's optimal social-emotional and physical health. Moreover, poor parental relationship quality is considered a strong correlate of parenting stress (Fagan & Lee, 2014).

Recent studies demonstrate a relationship between poor emotional regulation skills, higher levels of engagement in obesity risk factors and lower engagement in obesity protective factors (Anzman-Fresca et al., 2012; Anzman-Frasca et al., 2013; Bost et al., 2014; Hughes et al., 2015). Children who have lower emotional regulation skills may lack the ability to resist food, even in the absence of hunger, thereby increasing their food consumption leading to weight gain (Anzman-Fresca et al., 2012; Bost et al., 2014). On the other hand, studies have found that delay of gratification, meaning the ability to resist the temptation for a reward and wait for a later reward later, decreases a child's likelihood of becoming obese (Hughes et al., 2015). This is supported by recent findings among children ages 2-5, (Graziano et al., 2010; Anderson & Whitaker, 2010) suggesting that children with poor emotional regulation are more likely to eat in the absence of hunger, with their eating in response to a stressor, thereby increasing their BMI (Anderson & Whitaker, 2010). Eating in response to stress can also increase obesity risk because stress is associated with an increased preference for foods high in fats and added sugar (Miller et al., 2013). Another explanation for this relationship is that parents use food to soothe the emotions of children with poorer emotional regulation skills, and as a result, children learn to associate food with emotions, or "emotional eating" (Anzman-Frasca et al., 2012; Aparacio et al., 2016) and then increase their caloric intake. To date, the effect of emotional regulation and obesity risk among young children is a largely understudied topic (Hughes et al., 2015; Aparacio et al., 2016) and existing studies have neglected any potential moderators and mechanisms.

Potential Moderators: Parental Resources (Household Routines and Socioeconomic Resources)

It remains unknown whether the effects of parenting stress on early childhood obesity are uniform across households or whether there are certain resources some families may have to buffer the adverse effects of these stressors. This dissertation aimed to examine the moderating effect of two types of parental resources: 1) socioeconomic resources and 2) household routines.

Household Routines

There is growing interest in the role of household routines/ on child health and development (Anderson et al., 2012; Haines et al., 2013; Zajicket-Farber et al., 2012; Fiese & Bost, 2016). It has been argued that families who can coordinate and maintain household routines have higher levels of "family functioning" and are associated with positive developmental outcomes for children, including positive emotional regulation skills (Zajicket-Farber et al., 2012). Maintaining household routines is another resource parents can utilize to more effectively cope with stress as studies have found that routines are associated with higher levels of parenting self-efficacy and can help improve both the parent's level of warmth and support for their child as well as improve the overall parent-child relationship (Fiese & Winter, 2010).

A large body of research suggests that family meals, a routine often considered a proxy for family functioning, are associated with lower BMIs and healthier dietary habits (Rhee, 2008). An emerging approach to child obesity research is the study of additional family rules/routines including: sleeptime, bedtime and food (Muniz et al., 2014; Anderson & Whitaker, 2011; Jones et al., 2014). Rules and routines reflect a level of family organization and regularity that facilitate a child's optimal development and health outcomes, including positive emotional

regulation skills (Zajicket-Farber et al., 2012) and lower obesity risk (Muniz et al., 2014; Anderson & Whitaker, 2011; Jones et al., 2014). Children who are exposed to rules/routines have a lower likelihood of engaging in obesity risk factors including inadequate sleep, excess food intake and television watching (Jones et al., 2014; Anzman et al., 2013, Anderson et al., 2012) and are less likely to be overweight/obese (Jones et al., 2014).

Recent studies suggest a dose-response relationship between rules/routines and a child's obesity risk (Parks et al., 2012). For example, Anderson & Whitaker (2010) found that a preschooler's body mass index (BMI) decreased with each additional household routine (e.g. bedtime routine, family meal and screentime rules). Thus, exposure to household routines/rules may serve as protective factors and offset the adverse effects of parental stress on child's outcomes. Recently, Zajicek-Farber and colleagues (2014) found that engagement in household routines served as a buffer in the relationship between parenting stress and preschooler's emotional regulation skills. However, this study was based on a sample of low-income families participating in Head Start that further highlights the need to examine the moderating role of household routines in a large, nationally representative sample.

Socioeconomic Resources

Given the extensive body of research showing that living in lower socioeconomic households is a risk factor for negative health and developmental outcomes for children (Conger et al., 2010; Gunderson et al., 2011; Chen & Miller, 2013; Mistry et al., 2012), one could argue that parents with higher levels of education and/or income have more access to resources (including social and financial capital) to foster their child's health and development than their counterparts with less education and/or income. Considering that socioeconomic status (SES), and how it relates to family functioning and child development, is one of the most widely studied

topics in social science research (Mistry et al., 2008), I hypothesized that the detrimental effects of parental stressors on a child's emotional regulation skills, as well as the relationship between a child's emotional regulation skills and obesity risk, would be stronger for children whose parents had lower levels of education and/or lower household income.

Parents with less income and education are exposed to more stressors (Suglia et al, 2012; Zajicek-Farber et al., 2012; Evans & Kim, 2013), which also increase a child's exposure to chronic stress (Evans & Kim, 2013). Low-income parents also have fewer resources to cope with stress and tend to have less time with their children all of which can lead to parents practicing (and modeling) maladaptive coping strategies, (Evans & Kim, 2013), an impairment in the parent-child relationship and a reduction in the child's sense of emotional security (Chen & Miller, 2013). For example, low-income children whose parents talk less often to them are more likely to have poorer emotional regulation skills as the limited interaction with their parents can compromise their development of appropriately expressing emotions (Evans & Kim, 2013). This can help explain why low-income children are at a higher risk of developing poor emotional regulation skills (Mathis et al., 2015; Haines et al., 2013; Zajicek-Farber et al., 2012; Evans & Kim, 2013; Puder & Munsch, 2010).

The disproportionate rates of obesity among low-income children have been widely documented (Jones-Smith et al., 2014; Cameron et al., 2015; Cunningham et al., 2014; Lee et al., 2014; Hughes et al., 2015; Suglia et al., 2013; Pan et al., 2012). The hypothesized pathways explaining the relationship between socioeconomic resources and a child's emotional regulation skills are also related to a child's obesity risk. For example, low-income parents have less resources to carry-out household routines/rules that can both help foster positive emotional regulation skills (Zajicek-Farber et al., 2012) and reduce child obesity risk (Chen & Miller, 2013;

Jones et al., 2014; Anzman et al., 2013). Children in low-income neighborhoods are also at a higher risk of being obese because of limited access to (safe) spaces to engage in physical activity (Bethell et al., 2010; Salois et al., 2012) Also, living in low-income neighborhoods does not facilitate maintaining healthy dietary practices considering they are characterized as having a preponderance of convenience stores and fast-food restaurants and far fewer food outlets that provide healthful food, including fresh fruit and vegetables (Fradkin et al., 2015). Thus, the effects of parental stress on child's emotional regulation skills and obesity risk may be more detrimental among children in households with lower levels of socioeconomic resources.

Additional Factors

Parental stressors, child's emotional regulation skills and a child's obesity risk do not operate within a vacuum but are influenced by additional factors operating at various levels. Accordingly, this study also accounts for important sociodemographic and other characteristics as described below:

Sociodemographic Characteristics

Differences in child obesity risk between **racial/ethnic groups** has been widely documented (Haines et al., 2013; Ogden et al., 2012) with African American, Pacific Islander and Latino children being at higher risk of being obese than their White and Asian counterparts. **Parental age** is commonly included as a covariate in child obesity research, however, there are limited studies using nationally representative data on how parental age influences a child's obesity risk. A recent study from the United Kingdom (Goisis, 2015) suggests that mothers giving birth at age 40 or above is associated with an increased risk of child obesity.

Gender differences are not widely documented in obesity research among preschoolers; however, a recent study found that boys had higher obesity rates than girls (Lo et al., 2014).

However, there are noted differences in emotional regulation by gender as preschooler boys are more likely to exhibit externalizing behavioral problems than girls (Caughy et al., 2016) and have lower emotional regulation skills (Chaplin & Aldao, 2013), however, these studies are based on small sample sizes signaling the need for such research using nationally representative samples. **Regional** differences may be important; school-aged children living in the South have higher rates of being obese, and children in the West have lower rates, relative to children in other parts of the U.S. (Singh et al., 2010)

Child Characteristics

Children who have **been breastfed** are less likely to be obese than their peers who have never been breastfed (Guerrero et al., 2015; Yan et al., 2014) although the findings are not universal (Modrek et al., 2016). **Child behavioral problems** are associated with increased levels of parenting stress and can decrease a child's emotional regulation skills over time (Williford et al., 2007). Findings on the association between **low birthweight** and child obesity risk are mixed with some studies suggesting that low birthweight children who gain weight more rapidly in the first two years have an increased risk of obesity (Klebanov et al., 2014) whereas others find no association by birthweight status and child obesity risk (Cunningham et al., 2014). Children receiving **childcare outside the home** has become a focus for obesity prevention (Natale et al., 2014) given that preschoolers, on average, spend 28 hours per week and consume up to three-quarters of their daily energy intake at childcare settings outside the home (Liu et al, 2016). Moreover, some findings suggest that food made available to children at childcare settings are of poor nutritional quality and that children are not given sufficient opportunities to engage in physical activity (Liu et al, 2016).

Parental Characteristics

I hypothesized that children who have parents with more destructive **conflict resolution styles** (characterized as verbal hostility, physical aggression, non-verbal anger and withdrawal (Cummings et al., 2012) are at a higher risk of obesity. This is supported by evidence that the way in which parents resolve conflict can have more of an effect on children's behavioral problems (Cummings et al., 2014) and social adjustment (McCoy et al., 2013) than parental conflict itself. **Maternal depression** is associated with higher obesity risk for children via less optimal parenting practices including lower levels of breastfeeding and higher levels of screentime for children (Lampard et al., 2014). There is increasing focus on the role of **household routines** on child obesity risk as recent studies have found that routines are protective factors against child obesity in children as young as preschoolers (Anderson & Whitaker, 2010; Haines et al., 2013). An increase in the number of routines a preschooler participates in is also associated with higher emotional regulation skills (Muniz et al., 2014).

Chapter 3: Theoretical Framework, Conceptual Framework and Research Questions

Theoretical Framework: Risky Families Model

This dissertation was guided by the Risky Families Model developed by Repetti and colleagues (2002) that provides a framework for understanding how exposure to stressors in the family can influence the development of chronic disease. In this dissertation, I apply the Risky Families model to obesity risk among young children by also exploring how chronic stressors impact a child's emotional regulation skills.

The model presumes that exposure to stress is inevitable. However, stable and supportive relationships within the family, primarily between a child and the caregiver, can help offset the adverse effects of stress and in fact help develop positive responses to stress. This is because the family is primarily responsible for the development and care for a child in the child's first few years of life. In "healthy" families, a child develops with a sense of security that they can rely on their environment for their wellbeing, emotional and physical safety (Troxel & Matthews, 2004; Repetti, Taylor & Seeman, 2002). As a result of these positive experiences and interactions, children can develop emotional regulation skills and also adopt behaviors that allow them to take care of their emotional and physical safety themselves, independent of their caregivers (Troxel & Matthews, 2004; Repetti, Taylor, Seeman, 2002).

Families characterized as "risky," on the other hand, are more prone to family stressors such as conflict, violence, anger, and relationships lacking warmth and support (Repetti, Taylor & Seeman, 2002). These stressors can impair a child's physiological and behavioral development, and contribute to negative mental and physical health outcomes. The cumulative effect of these behavioral and biological responses to a risky home environment is associated

with a wide range of adverse mental and physical health outcomes, including depression, hypertension and cardiovascular disease (Loucks et al., 2011; Carroll et al., 2013).

Children raised in a risky home environment have limited availability to and responsiveness of caregivers, detrimental to the parent-child relationship and the child's development of emotional understanding, including the ability to express emotions in an acceptable manner, as well as other coping mechanisms for future stressful events (Frankel et al., 2012; Troxel & Matthews, 2004; Repetti, Taylor & Seeman, 2002). Thus children living in a risky home environment have a higher likelihood of adopting maladaptive coping strategies (Repetti, Taylor & Seeman, 2002; Repetti, Robles & Reynolds, 2014) and engaging in "health-threatening" behaviors, including alcohol and drug abuse, and promiscuous sexual behavior, to help relieve the stress associated with growing up in a risky family. One explanation for this is that members of risky families may be less able or less likely to talk about emotions, whereas such conversations are associated with improved emotional understanding. Similarly, in risky family settings, caregivers may not attend enough to a child to discourage their adoption of deleterious behaviors.

Risky Families and Child Obesity

Studies on the relationship between early childhood exposure to psycho-social stressors and preschooler obesity risk hypothesize the following pathways explaining how risky family environments can influence preschooler's obesity risk (Dalton et al, 2008; Boynton-Jarrett, et al, 2010). First, parents in stressful or conflict-ridden home environments may be less available to facilitate health behaviors that can reduce a child's obesity risk including provision of healthy food, regular bedtimes and limiting screentime. Also, the parent and/or child may use food to

soothe the child's emotions, thereby facilitating the development of using food as a maladaptive coping mechanism (or "emotional eating") for future stressful events.

Moreover, studies among children and adolescents have demonstrated how chronic exposure to stress, compounded by the limited availability of a supportive caregiver, can result in increased dietary intake, particularly of foods high in fats and added sugar (Garasky et al., 2009; Miller et al., 2013; Jones et al., 2014; Bost et al., 2014), impair sleeping routines, and decrease physical activity (Troxel & Matthews, 2004); all known risk factors for obesity.

Conceptual Framework

Figure 2.1 depicts the conceptual framework that guided this dissertation and how this dissertation adapted the Risky Families model. The model shows that this dissertation hypothesized that parental stressors can influence a child's obesity risk: (1) directly (2) indirectly via dysregulation of physiological systems and (3) indirectly via emotional self-regulation skills. Moreover, this model depicts the role of household routines and parental socioeconomic resources as potential protective factors in each of the main relationships tested. This conceptual model motivated the 3 aims of this study and their corresponding hypotheses.

Specifically, from Aim 1 I tested the relationship between parental stressor and a child's emotional regulation skills. I hypothesized that greater levels of parental stress would decrease a child's emotional regulation skills. Moreover, I tested whether parenting resources (measured by socioeconomic resources and household routines) buffered the relationship.

Next, in Aim 2, I tested the relationship between a child's emotional regulation skills and a child's obesity risk. I also tested whether the same parenting resources (socioeconomic resources and household routines) served as protective factors in the main relationship.

Lastly, in Aim 3, I tested the relationship between all three main constructs in the conceptual model: parental stressors, child's emotional regulation skills and child's obesity risk. Specifically, this aim assessed the association between parental stressors and a child's obesity risk and examined whether this relationship was mediated by child's emotional regulation skills.

Research Questions

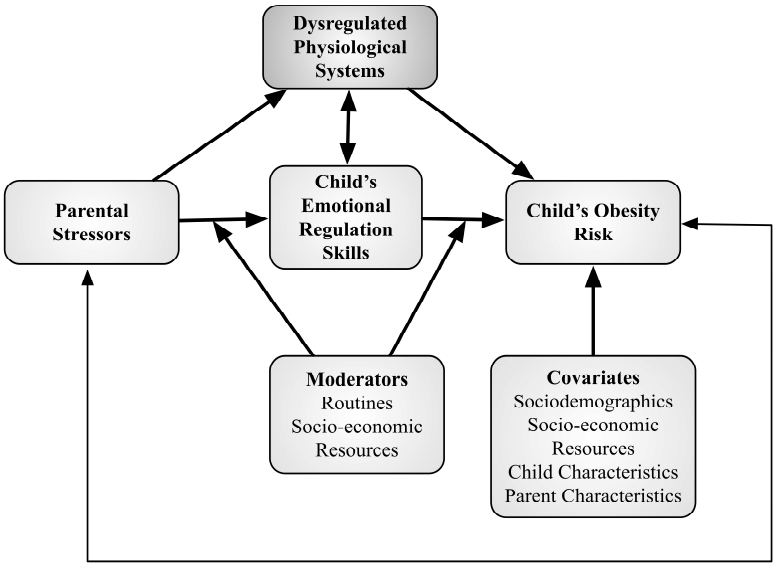
This dissertation addressed the following 3 research questions:

1. Are parental stressors associated with a preschool-aged child having lower emotional regulation skills, and do parenting resources buffer this association?

2. Are lower emotional regulation skills associated with obesity risk for preschool-aged children, and do parenting resources buffer this association?

3. Are parental stressors associated with obesity risk for preschool-aged children? Does this relationship hold true for parental stressors at earlier time points? Is this association mediated by a child's emotional regulation skills?

Figure 3.1 Conceptual Framework Guided by Risky Families Model



- Parental stressors are operationalized as: parenting stress and parental relationship quality (maternal and paternal report of: happiness in relationship and conflict).
- All outcomes are measured when children are preschool-aged.
- Obesity risk is operationalized as: Obese/Not Obese, sleep duration, soda intake, fast food consumption, screentime, number of family meals, vegetable consumption, fruit consumption.
- Socioeconomic resources are operationalized as parental (maternal and paternal) education and household income (median-centered).
- Darker-shaded box denotes that this is not a measured variable in the analyses as data were based on survey data. Although not a focus of this dissertation it is important to recognize that ongoing exposure to parental stress can result in dysregulated physiological systems as it leads to chronic arousal of the hypothalamic-pituitary-adrenal (HPA) axis, which regulates the feedback of cortisol. Continuously elevated cortisol levels can lead to increased dietary intake and can also impede the function of metabolic processes because cortisol interferes with leptin, a hormone important for regulating satiety (Gunderson et al., 2011).

CHAPTER 4: Methods

Description of the Data Set

The analyses were conducted using the Early Childhood Longitudinal Study-Birth Cohort, Birth Cohort (ECLS-B), sponsored by the Department of Education. The ECLS-B is a multiple-method, multiple-respondent study that focuses on children's home and educational experiences from birth through their entry into kindergarten and is based on survey and observational data. The study focuses on characteristics of the child, including their health experiences, and their family environment such as their early learning and care. There are three waves of data: 9-month wave, 2-year wave and preschool wave (approximately 4 years of age). There are additional data available from each child's birth certificate.

Data are collected from mothers, fathers, children, early care and education providers, and teachers. There are also observational videos recording parent-child interactions, audiotapes of children's natural language expression and observations of child care settings. The ECLS-B is one of the few national studies to assess fatherhood and fathers' parenting practices and attitudes.

Sampling Design

The ECLS-B employed a clustered, list frame design to select a nationally representative probability sample of children born in 2001 in the United States. The target population for the ECLS-B included all children born in the U.S. in 2001, but excluded children born to mothers under 15 years of age, children who died before the baseline assessment at 9-months, and children who were adopted before the baseline assessment. Using criteria defined by the National Center for Health Statistics (NCHS), 96 primary sampling units (PSU), defined as counties or groups of contiguous counties, were identified for the study. For the American Indian/Alaska Native oversample, 18 additional PSUs were selected from a supplemental frame

consisting of areas where the population had a higher proportion of American Indian/Alaska Native births. The core-sampling frame of the ECLS-B consisted of approximately 14,000 births sampled from birth certificates within the PSUs. ECLS-B oversampled by race, birthweight and plurality. In specific, twins, children with very low birth weight, Chinese American, other Asian-American/Pacific Islander and American Indian/Alaskan Native were oversampled.

Sample Sizes, Response Rates and Analytic Sample

A total of 14,000 births were initially identified to participate in Wave 1 (when the child was 9 months). The final sample of parent interviews at Wave 1 was 10,700 (74% response rate). Although the ECLS-B is a longitudinal dataset, this dissertation primarily focused on cross-sectional analyses of data at Wave 3 (when the child was at preschool age). At the preschool wave, there were a total of 8,950 completed parent interviews (91% response rate), 6,000 completed residential father questionnaires (88% response rate) and 8,750 completed child assessments (98% response rate). (Note: All sample sizes were rounded to the nearest 50 due to the National Center for Education Statistics guidelines to protect respondent confidentiality).

The analytic sample was constructed to represent dual-headed households that had information from both mothers and fathers (Same-sex couples represented less than 2% of the sample and were not included). The exclusionary criteria for the analytic sample were: 1) primary respondent did not identify as the maternal figure (less than 2%), 2) mother reported no household spouse or partner, 3) lack of a completed father questionnaire and 4) child had any birth defect reported on the birth certificate. At the preschool wave, there are 6,000 completed residential father questionnaires and 97% (5,850) of those have a primary respondent that identifies as a maternal figure. After excluding the cases with a birth defect reported on the birth certificate, (738), there was a total of 5,100 cases. However, due to the inability to conduct

multiple imputations with the jackknife replicate weights, analyses were restricted to those cases with no missing values on any of the variables of interest resulting in an analytic sample size of 4,000 (79% of those meeting the inclusion criteria). (Note: The sample size was rounded to the nearest 50 due to the National Center for Education Statistics guidelines to protect respondent confidentiality).

Description of Data Collection

Parent interviews were conducted at all three waves using one or a combination of three methods: face-to-face (i.e. home visits), telephone, and computer assisted. All participants received a home visit at all three waves. If the home visit could not be conducted in person, a telephone interview was conducted.

The first component of the home visit was a 90-minute computer assisted personal interviews. The respondent was the person identified as most knowledgeable about the child's care/education and living in the home with the child. In most cases (96%), the respondent was the biological mother. However, if the mother was not available, respondents were selected in the following order: biological father, another parent or guardian or another household member. The interview was available in both English and Spanish.

An audio computer-assisted self-interview (ACASI), available in both English and Spanish, was a self-administered component. The elements of the ACASI were questions that might be considered sensitive (e.g. parental conflict, marital happiness, depressive symptoms, drug and alcohol abuse). After receiving instruction in using the computer, respondents were asked to complete the questions away from the interviewer to maximize privacy. The ACASI was not administered in households where parent interviews were conducted using an interpreter or via telephone.

During the preschool parent interview (which were conducted primarily with mothers), respondents were asked if there was a spouse or partner living in the household. If the father was home, he was presented with a 20 minute Resident Father questionnaire available in both English and Spanish. If he was not home, the respondent was left with a stamped, self-addressed envelope with the questionnaire for the father to complete and mail back. Resident fathers were identified as a person who resided in the household and who was either the biological father or the person identified as the partner or spouse of the parent interview respondent. The first question specifies the relationship between the respondent and child and in 90% of the cases it is the child's father. The preschool wave is the only wave that did not administer a non-residential fathers questionnaire. The residential father questionnaire focused on aspects of parenthood specific to fathering (such as attitudes about being a father and relationship with own father) but there are domains that overlapped with the "focal" parent questionnaire that was completed primarily by mothers.

Physical measurements of the child were also taken. The ECLS-B trained interviewers measured children's height and weight using a standardized protocol. With children dressed in light clothing and without shoes, height was measured using a portable stadiometer and weight was measured with a digital scale. Measurements were taken twice and the average for each measurement was used.

Sampling Weights

The sample design allowed results to be weighted to estimate the experiences, characteristics, and outcomes of approximately 4 million US born children born in 2001. Survey weights allow for adjustments for nonresponse and to correct for underrepresentation in sample

selection. All analyses used survey weights, and the SVY command in STATA, to account for oversampling, non-response, and the clustered sampling design.

Description of Variables (See Table 4.1 for Summary of Key Variables)

Dependent Variables

Obese/Not Obese (dichotomous) was computed by categorizing children with a BMI z-score at or exceeding the 95th percentile as "obese" whereas children below the 95th percentile were categorized as "not obese" per the CDC guidelines (Kuczmarski et al., 2000).

Screentime (dichotomous) was measured by combining responses to the following questions: 1) "On a typical weekday, that is, Monday through Friday, about how many hours of television does (Child) watch at home per day?" and 2) "On a typical weekday, that is, Monday through Friday, about how many hours of DVDs and/or videos does (Child) watch at home?" The responses to these continuous variables were combined to create a dichotomous measure by computing whether the child met or exceeded the American Academy of Pediatrics guidelines of no more than 2 hours of screentime per day (American Academy of Pediatrics, 2001). Children who watched 2 or less hours were scored a "0" and children who watched more than 2 hours were assigned a score of "1" so that higher scores represented higher levels of engagement in the obesity risk factor.

Sleep Duration (continuous) was computed by combining information from two questions: 1) About what time does (Child) usually go to sleep on a weeknight? and 2) About what time does (Child) usually go wake up on a weekday? Sleep duration measures how long a child slept for in hours and minutes.

Fast Food Consumption: (count) was measured by the following question: "During the past 7 days, how many times did (Child) eat a meal or snack from a fast food restaurant with no wait

service such as McDonald's, Pizza Hut, Burger King, Kentucky Fried Chicken, Taco Bell, Wendy's and so on? Consider both eating out, carry out, and delivery of meals in your response." Response options were: 1) 1 time per day, 2) 2 times per day, 3) 3 times per day, 4) 4 or more times per day, 5) 1 to 3 times during the past 7 days, 6) 4 to 6 times during the past 7 days, 7) child did not eat fast food from a fast food restaurant during the past 7 days. A weekly total number of times of eating fast food per week was calculated based on a measure developed by Sturm & Datar (2011). Response categories of individual questions were transformed into continuous values employing median points; for example, 'three times a day' was coded as '21 times per week' and 'four to six times per week' was coded as 'five times per week.' The possible range of values were: 0 times per week, 2 times per week, 5 times per week, 7 times per week, 14 times per week, 21 times per week, 28 times per week (Sturm & Datar, 2011).

Soda Intake (count) was measured by the following question, "During the past 7 days, how many times did (Child) drink Soda pop (for example, Coke, Pepsi, or Mountain Dew), sports drinks (for example, Gatorade), or fruit drinks that are not 100% fruit juice (for example, Kool-Aid, Sunny Delight, Hi-C, Fruitopia, or Fruitworks)?" Response options were: 1) 1 time per day, 2) 2 times per day, 3) 3 times per day, 4) 4 or more times per day, 5) 1 to 3 times during the past 7 days, 6) 4 to 6 times during the past 7 days, 7) child did not eat fast food from a fast food restaurant during the past 7 days. The same measure of weekly total number of sodas consumed was calculated similarly to how fast food consumption was measured earlier (Sturm & Datar, 2011). Response categories of individual questions were transformed into continuous values employing median points; for example, 'three times a day' was coded as '21 times per week' and 'four to six times per week' was coded as 'five times per week.' Possible responses were: 0 times per week, 2 times per week, 5 times per week, 7 times per week, 14 times per week, 21

times per week, 28 times per week (Sturm & Datar, 2011).

Fruit Consumption (continuous) was measured by the following question, "During the past 7 days, how many times did (Child) eat fresh fruit, such as apples, bananas oranges, berries or other fruit such as applesauce, canned peaches, canned fruit cocktail, frozen berries, or dried fruit? Do not count fruit juice. Response options were: 1) 1 time per day, 2) 2 times per day, 3) 3 times per day, 4) 4 or more times per day, 5) 1 to 3 times during the past 7 days, 6) 4 to 6 times during the past 7 days, 7) child did not eat fruit during the past 7 days. Similarly as with the soda and fast food consumption, response categories of individual questions were transformed into continuous values employing median points; for example, 'three times a day' was coded as '21 times per week' and 'four to six times per week' was coded as 'five times per week.' Possible responses were: 0 times per week, 2 times per week, 5 times per week, 7 times per week, 14 times per week, 21 times per week, 28 times per week.

Vegetable Consumption (continuous) was measured by the question, "During the past 7 days, how many times did (Child) eat vegetables other than French fries and other fried potatoes? Include vegetables like those served as a stir fry, soup, or stew, in your response." Response options were: 1) 1 time per day, 2) 2 times per day, 3) 3 times per day, 4) 4 or more times per day, 5) 1 to 3 times during the past 7 days, 6) 4 to 6 times during the past 7 days, 7) child did not eat vegetables during the past 7 days. The same categories that were created for fast food, soda and fruit were made to measure vegetable consumption. Namely, response categories of individual questions were transformed into continuous values employing median points; for example, 'three times a day' was coded as '21 times per week' and 'four to six times per week' was coded as 'five times per week.' Possible responses were: 0 times per week, 2 times per week, 5 times per week, 7 times per week, 14 times per week, 21 times per week, 28 times per

week.

Family meal (continuous) was measured by the question, "In a typical week, please tell me the number of days at least some of the family eating the evening meal together"? Possible responses ranged from 0 to 7.

Independent Variables

Happiness in Relationship (dichotomous) was measured by the question, "Would you say that your marriage/relationship is…" with the following response options: 1=not too happy, 2=fairly happy, and 3=very happy. Responses of "not too happy" and "fairly happy" were collapsed and assigned a value of "0" whereas values of "very happy" were assigned a value of "1" so that a higher score indicated a higher level of relationship quality, as previously analyzed (Cabrera et al., 2009).

Parental Conflict (continuous) was measured by asking both mothers and fathers the question about 10 topics: "Do you and your spouse/partner have arguments about the following: 1) chores and responsibilities, 2) money, 3) not showing love and affection, 4) sex, 5) religion, 6) leisure time, 7) drinking, 8) other women or men, 9) in-laws, 10) your child(ren). Items were rated on a 4-point scale (1 = often, 2= sometimes, 3=hardly ever, 4=never). Responses were summed to create a total conflict score with higher scores indicating less conflict (i.e. higher level of relationship quality). The scale for fathers yielded a Cronbach's alpha of 0.79 for fathers and 0.78 for mothers.

Parenting Stress (continuous) was measured by using 5 items from the Parent Stress Index (Abidin, 1995). This instrument was developed for clinical or research use in identifying parents under stress and at risk for developing impaired parenting behavior (Fagan & Lee, 2014). The 5 items were: 1) Being a parent is harder than I thought it would be, 2) I feel trapped by my

responsibilities as a parent, 3) I find that taking care of my child/children is much more work than pleasure, 4) I often feel tired, worn out, or exhausted from raising a family, 5) I find myself giving up more of my life to meet my child's need than I ever expected. Response options were: 1=strongly agree, 2=somewhat agree, 3=somewhat disagree, 4=strong disagree. Responses were reverse coded so that higher values indicated higher levels of parenting stress. The scale demonstrated adequate internal consistency for this sample with a Cronbach's alpha of .86 for mothers.

Emotional Regulation Skills (continuous) was measured by 24-items developed for the ECLS-B by modifying several socio-emotional scales including the Preschool and Kindergarten Behavior Scales-Second Edition, the Social Skills Rating System and the Family and Child Experiences Study (FACES). One item was created by the expert panel. Items were intended to reflect common preschool and kindergarten children's behavior problems and to describe adaptive or positive behaviors reflecting both peer-related and adult-related forms of social adjustment. Parents were asked to consider their child's behavior within the last three months. Parents responded with the following 5-point scale on whether each behavior was observed in the past three months. Response options were: 1=Never, 2=Rarely, 3=Sometimes, 4=Often and 5=Very often. Ten items that reflected behavioral and sociability problems such as "physically aggressive, and "gets angry easily" were reverse coded so that higher scores reflected more positive emotional regulation skills. A composite emotional regulations skills score was created by summing the values for each item. The scale yielded a Cronbach's alpha of 0.85 indicating adequate reliability.

Covariates

Sociodemographic characteristics

Parental Race/Ethnicity (categorical) was operationalized into the following groups: 1) White, non-Hispanic (reference category), 2) Black or African American, non-Hispanic, 3) Hispanic, 4) Asian, non-Hispanic 5) Other.

Parental Age (continuous) was measured by number of years based on respondent's answer to the question, "How old are you"?

Child Gender (dichotomous) was measured by information on the child's birth certificate. Males were assigned a "0" and females were given a value of "1."

Region (categorical) was collected by the study team based on the location of the sampled household. Regions were categorized as: 1) Northeast, 2) Midwest, 3) South, 4) West.

Socioeconomic Resources

Parental Employment Status (categorical) was operationalized into the following groups: 1) 35 hours or more per week (reference category), 2) Less than 35 hours per week 3) Looking for work, 4) Not in labor force.

Parental Education (categorical) was operationalized as: 1) Less than high school (reference category), 2) High school Degree (equivalent/vocational-tech school/some college), 3) Bachelor's degree or more. (Note: parental level of education was measured as a moderator in Aims 1 and 2).

Household Income (continuous) was measured in number of dollars and based on the midpoint of 13 categories the survey team created. The range for income categories was less than $5,000 to $200,001 or more. To facilitate interpretation, the income variable was centered at the median. (Note: Household Income was measured as a moderator in Aims 1 and 2)

Child Characteristics

Low Birthweight (categorical) was obtained by the birth certificate and assigned a value of "0" if greater than 2,500 grams (normal weight), and "1" if lower than 2,500 grams.

Ever Breastfed (dichotomous) was measured by the following question in the 2-year Parent questionnaire, "Did you ever breastfeed (Child)"? Response options were "Yes"=1 and "No"=0.

Any Outside Care (dichotomous) was measured by assigning a "0" to a child whose parent responded "no" to all of the following questions and a "1" if the parent responded "yes" to any of the following questions: 1) "Head Start is a federally sponsored preschool program primarily for children from low-income families. Is (Child) currently attending Head Start on a regular basis? 2) Now I want to ask you about any care (Child) is receiving from relatives not including Head Start programs. Is (Child) now receiving care from a relative other than a parent on a regular basis, for example from grandparents, brothers or sisters, or any other relatives? 3) Now I'd like to ask you about any care (Child) receives from someone not related to (him/her) in your home or someone else's home on a regular basis, not including Head Start. This includes home child care providers, regular sitters, or neighbors, but does not include day care centers or preschools. Is (Child) now receiving care in a private home on a regular basis from someone who is not related to (him/her)? 4) Now I want to ask you about child care centers, nursery schools or pre-kindergarten programs (Child) may attend, not including Head Start programs. Is (Child) now attending a day care center, nursery school, preschool, or pre-kindergarten program on a regular basis?

Behavioral Problems at 2 Years of Age (continuous) was measured by a summary score that combined responses to the following questions, "For each description, please tell me if (Child) is never like this, used to be like this, is like this sometimes, or is like this most times: 1) Is

frequently irritable or fussy, 2) Goes easily from a whimper to an intense cry, 3) Is unable to wait for food or a toy without falling apart, 4) Is easily distractible, shows fleeting attention, 5) Needs a lot of help to fall asleep, 6) Tunes out from an activity and needs help to reengage, 7) Can't shift focus easily from one object or activity to another." Response options were: 0=Never, 1= Used to be, 2=Sometimes, 3=Most Times. This 7-item measure was derived from a modification of the Infant Toddler Symptom Checklist (ITSC), a validated scale used among children 7 to 30 months of age. The purpose of the ITSC is to identify infants and toddlers with regulatory disorders who may be demanding of their caregivers; be unpredictably fussy; or have problems with sleep, feeding, or regulating mood and behavior. The ECLS-B study team chose 7 of the original 19 items because they showed the largest mean difference between infants with and without regulatory disorders in the validation sample.

Parental/Parenting Characteristics

Adverse Conflict Resolution Style (continuous) was measured by the question, "People deal with serious disagreements in different ways. When you have a serious disagreement with your spouse/partner, how often do you…1) Just keep your opinions to yourself? 2) Discuss your disagreements calmly? 3) Argue heatedly or shout at each other? 4) End up hitting or throwing things at each other? 5) Reach a compromise? 6) Criticize each other?" Response options were: 1=Often, 2=Sometimes, 3=Hardly Ever, 4=Never. Responses were recoded such that a higher score indicated more adverse styles of resolving conflict (i.e. spouses hitting or throwing things at each other).

Maternal Depressive Symptomology (continuous) was measured by creating a summary score from the 12-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) (Poulin et al., 2005). The short form has been validated and used in other large national studies

including the National Longitudinal Study of Children and Youth. The summary score was based on responses to the following question, "In the past week, how often is it that….1) You were bothered by things that usually don't bother you? 2) You did not feel like eating: your appetite was poor? 3) You could not shake off the blues, even with help from your family and friends? 4) You had trouble keeping your mind on what you were doing? 5) You were depressed? 6) Everything you did was effort? 7) You were fearful? 8) Your sleep was restless? 9) You talked less than usual? 10) You were lonely? 11) You were sad? 12) You could not get "going"? Response options were: 1=Rarely or Never, 2=Some or a Little, 3=Occasionally or Moderately, 4=Most or All. Responses were summed such that higher scores indicated more frequent experiences of the symptoms.

Household Routines (continuous) is measured by responses to the following questions: In your house, are there rules or routines about: 1) What kinds of food (Child) eats?, 2) What time (Child) goes to bed?, 3) What chores (Child) does? Response options were 0="No" or 1="Yes." Responses were summed to create a total Routines/Rules score with higher values indicating more household routines/rules. (Note: Household routines were also measured as a moderator in Aims 1 and 2).

Table 4.1 Summary of Key Variables

Conceptual Role	Construct	Variable	Variable Type	Possible Range
Independent **and** Dependent Variable	Emotional Regulation	Social-Emotional Skills	Continuous (Scale: 24 items)	0-96
Dependent Variable	Obesity-Risk/ Protective Factors	Sleep Duration Screentime Family Meals Soda Fast Food Fruit Vegetable	Continuous Dichotomous Continuous Count Count Continuous Continuous	-- 2) 0 or 1 3) 0-7 4 & 5) 0x/ week, 2x/week, 5x/week, 7x/week, 14x/week,21x/week, 28x/week
Dependent Variable	Weight Status	Obese /Not Obese	Dichotomous	O or 1
Independent Variable	Parental Stressor: Relationship Quality	Conflict	Continuous	10-40
Moderator	Socioeconomic Resources	Parental Education	Categorical	Less than high school High school /equivalent or more Bachelors degree or more
Moderator	Socioeconomic Resources	Household income	Continuous	<$5,000- >$200,001
Moderator	Routines	Screentime Chores Bedtime Food	Continuous	0-4
Control	Parental Race		Categorical	White (non-Hispanic) Black (non-Hispanic) Hispanic Asian Other
Control	Parental Age		Continuous	15 years of age and older
Control	Child Gender	Gender	Categorical	Male/Female
Control	Region	Region	Categorical	Northeast Midwest South West
Control	Employment Status	Hours worked per week	Categorical	35 hours or more per week Less than 35 hours per week Not employed in formal labor force
Control	Childcare	Receives any care outside of the home	Dichotomous	Child receives no care outside the home/ Child receives care outside the home
Control	History of Breastfeeding	Ever Breastfed	Dichotomous	Never Breastfed/ Breastfed
Control	Low Birthweight	Low Birthweight	Dichotomous	Low Birthweight/ Not Low Birthweight
Control	Child's Emotional Regulation Skills	Behavioral Problems	Continuous (Scale: 7 items)	0-21
Control	Conflict Resolution Style	Adverse Conflict Resolution Style	Continuous (Scale: 6 items)	0-18
Control	Maternal Depression	Maternal Depressive Symptomology	Continuous (Scale: 12 items)	12-48

Analytic Plan

STATA V13 was used for all analyses. All analyses used the provided replication weights, created based on the jackknife 2 method, in Stata unless otherwise noted. Statistical significance was determined by a p-value less than 0.05.

Data Permission and Human Subjects Approval

I was granted permission from both the UCLA South Campus IRB and the NCES (National Center for Education Statistics) to use the restricted ECLS-B dataset.

Overview of Models

In each aim, a series of nested regression models were analyzed after examining the bivariate relationship. In these models, we attempted to rule out confounding by controlling for key covariates that are related to obesity risk. The following covariates were added and, for consistency, were added in identical order in each aim: **Model 1** added **sociodemographic characteristics** (measured by parental race, parental age, child gender and region of the country the interview was conducted in), **Model 2** added **socioeconomic resources** (measured by parental level of education, household income and parental employment status) **Model 3** added **child-level characteristics** (measured by child's behavioral problems at 2 years of age, whether the child had ever been breastfed, whether the child was receiving any care outside the home and whether the child was born low birth weight) and **Model 4** added **parental/parenting characteristics** (measured by conflict resolution style, maternal depressive symptomology and number of household routines). It was posited that these covariates would attenuate, but not entirely eliminate, the main relationship being tested. An adjusted Wald-test was calculated to assess improvement in the model fit to the previous model as a result of the inclusion of the new variables after the analysis for each model was performed.

Aim 1. Parental Stressors and Child's Emotional Regulation Skills

This aim assessed whether parental stressors were associated with a child's emotional regulation skills. There were three indicators of parental stressors: maternal/paternal parenting stress, maternal/paternal happiness in relationship and maternal/paternal conflict. The outcome, emotional regulation skills, was operationalized by a continuous variable so multivariate ordinary least squares (OLS) regression was conducted.

The equation for this model was:

$$ER = b_o + b_1(Stress) + b_2(Sociodemo) + b_3(SES) + b_4(Child) + b_5(Parent) + e.$$

In this equation, ER stands for the predicted value of the dependent variable (Emotional Regulation Skills Score), $\mathbf{b_o}$ is the constant or intercept of the regression equation when all independent variables equal 0 and **e** is the residual error. Three stressors are tested one at a time in this aim (happiness in relationship, conflict score, parenting stress score).

I also tested whether parenting resources, such as socioeconomic resources and household routines moderated the main relationship. To do this, a regression model was conducted with the inclusion of an interaction term (Stress*Routines, for example). The equation for this model when testing household routines as the moderator is:

$$ER = b_o + b_1(Stress) + b_2(Sociodemo) + b_3(SES) + b_4(Child) + b_5(Parent) + b_6(Routines) + b_7(Stress*Routines) + e$$

Aim 2. Main Relationship: Emotional Regulation Skills and Obesity Risk

This aim addressed whether a child's emotional regulation skills was associated with obesity risk. There are 8 measures of obesity risk. For the models measuring obesity risk factors (odds of being obese, odds of exceeding daily guideline for screentime, soda intake, fast food consumption), I hypothesized that a one-unit increase in a child's emotional regulation skills was associated with a decrease in these outcomes. Therefore, in these models, I expected the

coefficient for emotional regulation skills to be negative and statistically significant. On the other hand, for the models measuring health-promoting behaviors than can reduce obesity risk (family meals, sleep duration, vegetable consumption, fruit consumption), I hypothesized that a one-unit increase in a child's emotional regulation skills was associated with an increase in these outcomes. Therefore, in these models, I expected the coefficient for emotional regulation skills to be positive and statistically significant.

Multivariate OLS was used for models measuring number of family meals, fruit consumption, vegetable consumption, sleep duration because they are continuous measures. Multivariate logistic regression was used in models predicting odds of being obese/not obese and the odds of exceeding the screentime recommendations as these outcomes are dichotomous. Negative binomial regression was used for models predicting soda and fast food consumption as the results suggested that the data were over-dispersed, or that the conditional variance exceeded the conditional mean. This suggested that negative binomial regression was more appropriate than Poisson regression.

Similarly to Aim 1, in this aim, I tested whether parenting resources, such as socioeconomic resources and household routines, moderated the main relationship. To do this, a regression model was conducted with the inclusion of an interaction term (ER*Routines, for example with ER being an abbreviation for emotional regulation skills). The equation for this model when testing household routines as a moderator is:

$$Y = b_o + b_1(\text{Stress}) + b_2(\text{Sociodemo}) + b_3(\text{SES}) + b_4(\text{Child}) + b_5(\text{Parent}) + b_6(\text{ER}) + b_7(\text{Routines}) + B_8(\text{ER*Routines}) + e$$

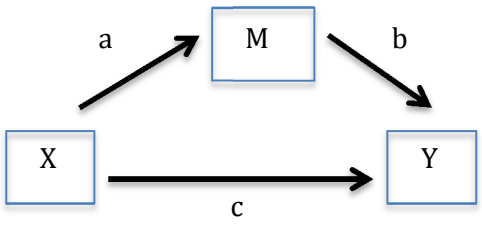
In this equation, Y stands for the predicted value of the dependent variable (frequency of family meals, fast food intake, etc.), $\mathbf{b_0}$ is the intercept of the regression equation when all independent variables equal 0 and **e** is the residual error.

Aim 3: Parental Stressors and Child's Obesity Risk

This aim assessed whether parental stressors were associated with a child's obesity risk. The same 8 outcomes listed above for Aim 2 were measured. As described in the analytic plan for Aim 2, I either conducted multivariate OLS, multivariate logistic regression or negative binomial regression depending on the outcome. In general, I hypothesized that children whose parents report more stressors (i.e. poorer relationship quality) would have higher obesity risk.

The second sub-question of this aim tested whether child's emotional regulation skills mediated the relationship between parental stress and a child's obesity risk. To test for mediation, I used the MacKinnon's mediation model (2007), depicted below in Figure 4.1:

Figure 4.1 MacKinnon Model for Mediation



In this model, X is the independent variable (e.g. a parental stressor), M is the mediating variable (child's emotional regulation skills) and Y is the outcome variable (e.g. fruit consumption). The first step was to establish a statistically significant relationship between the primary independent and outcome variable (C). The next steps were to test the relationships between the mediating variable and the independent variable (A) as well as the mediating variable and the outcome variable (B). I performed a regression model to assess the net direct effect of parental

relationship quality on each outcome while taking into account the indirect effect of emotional regulation skills. To assess the indirect, or mediated effect, I calculated A*B (the product of the A and B pathways) using Sobel's test (MacKinnon, 2007). I hypothesized that the main relationship each parental stressor and each indicator of child's obesity risk would be partially, not fully mediated. In other words, I expected that the main relationship would persist but would be reduced in magnitude with the addition of the mediating variable. Given STATA's current inability to conduct the Sobel test with replicate weights, the Sobel test will be unweighted.

The MacKinnon mediation model is appropriate for OLS, but is not appropriate with binary outcomes. In general, coefficients in nested models with binary outcomes cannot directly be compared because the changes in the odds or log odds can occur so long as variables added to a model are associated with the dependent variable. Because of this, changes in odds or log odds can occur even when the added variable is not associated with the independent variable (which is a requirement of mediation). This issue is due to the fact that logistic regression involves rescaling coefficients and variances with the addition of each variable. This rescaling can lead to biased, and/or inaccurate, interpretations of the mediating variable's effect (Breen et al., 2013), if it is not accounted for. Karlson, Holm and Breen created the KHB method of mediation that addresses this issue by holding the scale of dependent variables fixed in order to allow comparison across models (Breen et al., 2013). Therefore, I used the KHB method for models testing mediation with the two binary outcomes: obese/not obese and exceeding daily guidelines for screentime. However, the KHB currently does not allow for replicate weights that ECLS-B provides to adjust for clustering and stratification. Therefore, the KHB analyses were unweighted.

Autoregressive Path Analysis

For Aim 3, I was interested in extending my cross-sectional analyses on the relationship between parental stressors and a preschooler's odds of being obese by using earlier waves of data. This question allowed me to assess how earlier exposures to stress influenced the main relationship by including measures of parental relationship quality from the 9-month and 2-year waves of data collection. For this sub-aim, the two indicators of parental relationship quality were tested, happiness in relationship and conflict score, from earlier waves, because parenting stress was not measured in the 9-month wave.

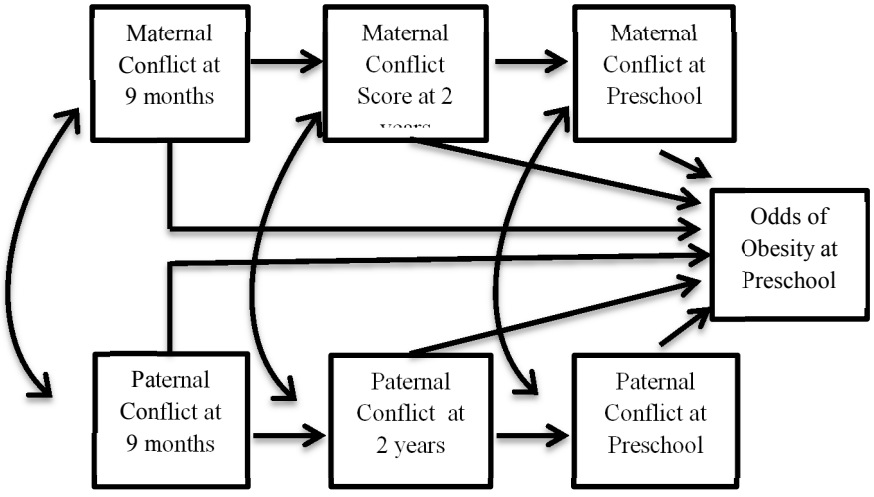
The sample size for this analysis was 2,050 after dropping any cases that had missing data on the variables of interest for all three waves. (Note: sample size rounded to the nearest 50 due to National Center for Education Statistics Guidelines). Conducting analyses with full information maximum likelihood (FIML) was not possible given that it is not compatible with the GSEM command in STATA 13.

To address the research question, an autoregressive path analysis was conducted. Path analysis is a form of structural equation modeling that uses measured variables as opposed to latent constructs to test the relationship between variables (Lei & Wu, 2007). Structural equation modeling is considered a family of statistical techniques that shares characteristics with other general linear models but is distinct in that it can help summarize as well as test the interrelationships of variables, or constructs, it allows for multiple measures to represent certain constructs and includes measure-specific error (Weston & Gore). Another distinction of SEM is the interpretation of results. Namely, the interpretation of results entails the evaluation of various fit indices to assess the "model fit," or how well the model represents the relationships among the variables/constructs in the data in comparison to the specified model.

Autoregressive path analysis is appropriate for this research question because it allows for the simultaneous estimation of multiple equations and it allows me to go beyond cross-sectional analyses to include variables from different waves of data collection. Autoregressive models yield coefficients of the same variable measured at different points in time (in this case, parental stressors) that are referred to as the autoregressive effects, "or the effect of a construct on itself measured at a later (Selig & Little, 2012). In this sub-aim, models tested whether each indicator of parental relationship quality (happiness and conflict) was predicted by the earlier wave. For example, models tested whether parental happiness in relationship at 9 months wave predicted happiness in relationship at 2 years and then tested whether this predicted happiness at the preschool wave. The same model was tested for parental report of conflict in their relationship.

Figure 4.2 depicts the hypothesized relationships for the autoregressive path analysis of parental conflict on a child's odds of being obese at preschool.

Figure 4.2 Conceptual Figure for Autoregressive Path Analysis: Parental Conflict



The measured variables are depicted in rectangles and the paths are depicted by straight arrows. Covariances, indicating that two variables or error terms covary but are not hypothesized to be causally related, are depicted by curved arrows.

Given that my outcome of interest is binary, I used the GSEM command in STATA. I reported the Akaike's Information Criterion (AIC) and Swartz's Bayesian Information Criterion (BIC) between the base and specified models. Whichever model yielded lower AIC and BIC values was determined the better fitting model.

Missing Data

Missing data is a common issue with secondary data analyses as it can increase biases and undermine the generalizability of the findings. Multiple imputation is a preferred method for dealing with missing data over listwise deletion, as it allows for the retention of cases and reduces the biases, including the limited representativeness of the population (resulting from the loss of data on more socially disadvantaged respondents), associated with listwise deletion (Acock, 2005). However, multiple imputation with jackknife replicate weights is currently not possible in STATA. Moreover, a disadvantage of conducting multiple imputation is the assumption that the data are missing at random. Further, it is particularly important that we preserve the complex design and use the sampling weights appropriately. Therefore, this study employed complete case analysis (i.e. analyses are performed on participants with no missing data on variables of interest). Table 4.2 shows the number and percentage of missing data for the study variables. In Chapter 5, I describe the sample characteristics of the analytic sample and how they differ from the cases that were dropped due to missing data.

Table 4.2 Count of Missing Variables in Analytic Sample (N=5,100*)

	N
Parenting Stress (M)	250
Parenting Stress (F)	200
Conflict Score (M)	250
Conflict Score (F)	200
Happiness in Relationship (M)	200
Happiness in Relationship (F)	50
OUTCOME VARIABLES	
Fast Food Consumption	<50
Soda Consumption	<50
Fruit Consumption	<50
Vegetable Consumption	<50
Screentime	200
Sleep Duration	<50
WHZ or Obese	150
Emotional Regulation Skills	100
SOCIO-DEMOGRAPHICS	
Race (M)	<50
Race (F)	<50
Employment (M)	<50
Employment (F)	50
Age (F)	<50
SOCIOECONOMIC RESOURCES	
Education (F)	<50
SOCIAL-EMOTIONAL CLIMATE	
Adverse Conflict Resolution (M)	250
Adverse Conflict Resolution (F)	150
Maternal Depressive Symptoms	250
Child's Behavior Problems at 2 years	<50
CHILD AND FAMILIAL CHARACTERISTICS	
Child Ever Breastfed	<50
Any Outside Child Care	<50
Low birthweight	<50
Routines	<50
Difficulty raising at 2 years of age	<50
Not missing any values: Family meals, Maternal Age, Region, Maternal Education, Income, Child Gender ,	

*All sample sizes were rounded to the nearest 50 due to National Center for Education Statistics guidelines.

Chapter 5: Descriptive Statistics

The descriptive statistics of the analytic sample are summarized in Table 5.1

Child and Familial Characteristics

At preschool, the majority of children in the sample was not obese (86%) and not classified as low birth weight (81%). There was a roughly equal split among boys (51%) and girls (49%) in the sample. The average emotional regulation skills score was 67, with a range of 18 to 94 suggesting that children had moderately high levels of emotional regulation skills. The average score for behavioral problems at 2 years of age was 8.5 suggesting moderate-to-low level of behavioral problems. However, the responses spanned the entire possible range of scores from 0 to 21. The majority of the children in the analytic sample was attending some form of childcare outside the home (81%) and 75% of the children had, at one point, been breastfed.

Slightly more than half (56%) of children exceeded the daily guideline of no more than 2 hours of screentime per day. The average number of times soda was consumed was low (on average, 4 per week), however there was a wide range within the sample, from 0 to 28 times per week. Fast food consumption was even lower, (mean 2 times), but also ranged from 0 to 28 times per week. Children ate, on average, fruit more times than vegetables per week (10 times and 9 times, respectively), and both food items had wide ranges from 0 to 28 times per week. Children slept, on average, 10.5 hours per day. However, some children slept far less, as the responses ranged from 5 hours and 45 minutes to 16.5 hours per day.

Approximately one-quarter (25%) of the sample was in the Midwest, 34% in the Southern region, a slightly larger fraction were in the West (27%) and only 15% were in the Northeast. Household income ranged from the lowest to the highest possible levels, less than $5,000 to $200,000 and over. The average household income for the sample was $74,000.

Maternal Characteristics

Over half of the mothers (57%) reported being White. The other racial/ethnic breakdowns for maternal respondents were: 15% were Latino, 14% Asian, 8% African-American and 7% were categorized as 'Other'. Thirty-nine percent of mothers reported being employed in the labor force 35 hours more per week whereas 21% reported being employed less than 35 hours per week and 40% reported not being in the formal labor force. A small proportion of mothers had less than a high school degree (9%), approximately half of the sample (53%) had at least a high school degree and 39% had a college level education or more. The average age of mothers was 33 years of age but there was a wide range of age, 19-54.

The majority of mothers reported being "happy" (71%) in comparison to "not happy" (29%) in their relationship. Mothers also reported moderate levels of conflict with in their relationships, (mean= 9) but responses ranged from 0 to 29. Mothers, on average, reported low levels of parenting stress (mean=5, range 0-15).

Paternal Characteristics

Fathers were predominantly White (58%), 9% African-American, 15% Latino, 13% Asian and 6% "Other." Fathers overwhelmingly reported being in the labor force for 35 hours or more per week (90%), whereas 4% reported being in the labor force up to 35 hours or less per week. A very small fraction of fathers (6%) reported not being in the formal labor force. Approximately half (50%) of the fathers had at least a high school degree and 39% had a college degree or more. Only 11% had less than a high school degree. Fathers were slightly older than mothers with the average age being 35 years of age and there was even a wider range of ages among fathers (16-78 years).

Similarly to mothers, the majority of fathers reported being "happy" (68%) in comparison to "not happy" (32%) in their relationship. The average conflict score among fathers mirrored that for mothers (mean=9) but fathers' responses ranged from the highest to the lowest possible scores (0 to 30). The average level of parenting stress for fathers was, similarly to mothers, low (mean=5) and ranged from 0 to 15.

Comparison of Sample Characteristics

I tested to see if there was a statistically significant difference in stressors and sociodemographics between the cases in my analytic sample and those that were dropped due to missing data.

Mothers in the analytic sample had lower average parenting stress scores than mothers who were dropped (p-value< 0.05). However, there were not differences in reported happiness in relationship among mothers and fathers between the two groups. There was no difference in maternal conflict score but the average conflict score was higher among fathers in the analytic sample.

The average household income was higher in the analytic sample compared to cases that were dropped (p-value< 0.001). There was no difference in fathers' age but the average age for mothers did differ and was higher in the analytic sample (p-value < 0.001). The samples also differed by racial composition, employment and levels of education among both mothers and fathers (p-value < 0.001) such that mothers and fathers in the analytic sample were more likely to be White and have higher levels of education than the cases that were dropped.

Table 5.1 Demographic Characteristics of Mothers and Residential Fathers in Early Childhood Longitudinal Study- Birth Cohort, Preschool Wave (Unweighted) (N=4,000)

	N
Maternal Race	
White	2,300
Black or African American	300
Hispanic	600
Asian	600
Other	300
Paternal Race	
White	2,300
Black or African American	350
Hispanic	600
Asian	500
Other	250
Maternal Education	
Less than HS graduate	350
HS graduate or more	2,100
College graduate or more	1,550
Paternal Education	
Less than HS graduate	450
HS graduate/equivalent or more	2,000
College graduate or more	1,550
Maternal Employment Status	
35 hours or more per week	1,550
Less than 35 hours per week	850
Not in formal labor force	1,600

Table 5.1 (cont.). Demographic Characteristics of Mothers and Residential Fathers in Early Childhood Longitudinal Study- Birth Cohort, Preschool Wave (Unweighted) (N=4,000)

Paternal Employment Status	
35 hours or more per week	3,600
Less than 35 hours per week	150
Not in formal labor force	250
Maternal Age mean years (std. dev.)	33.27
Paternal Age mean years (std. dev.)	35.78
Child Gender	
Male	2,050
Female	2,000

Note: All sample sizes rounded to nearest 50 due to National Center for Statistics guidelines to protect participant confidentiality. Totals may not sum to 4,000 due to the rounding requirement.

Chapter 6: Aim 1 Results

Overview of Aim, Hypotheses and Methods

Aim 1 tested the relationship between 3 parental stressors (1: happiness in relationship, 2: conflict score, 3: parenting stress) and a preschooler's emotional regulation skills. This relationship was tested using data from mothers and fathers. I hypothesized that higher levels of stress among parents is associated with a decrease in child's emotional regulation skills. Nested multivariate OLS regression models were conducted on the continuous outcome, emotional regulation skills score. For each stressor, I first tested the simple, or bivariate, association. Next, I expanded the analyses by testing 4 nested regression models. The first multivariate model (Model 1) added socio-demographic variables including: race (for each parent), mean-centered age (for each parent), child gender and region of the country the interview was conducted. The second model (Model 2) introduced indicators of the socioeconomic resources including maternal and paternal level of education, maternal and paternal employment status and median-centered household income. Model 3 introduced child-level covariates including whether the child was receiving any care outside the home, if the child had ever been breastfed, whether the child had been classified as low birthweight and the child's behavioral problems at 2 years of age score. The final model (Model 4) introduced parent-level covariates including: adverse conflict resolution style score (for each parent), maternal depressive symptomology score and the number of household routines. Next, the relationship of each stressor and a preschooler's emotional regulation skills was tested for moderation. I tested to see if there was an interaction between each stressor and the following hypothesized moderators: level of education, household income (centered at the mean) and the number of household routines. I hypothesized that each of these

moderators could buffer the adverse effects parental stress has on a child's emotional regulation skills. All analyses were weighted using the replicated weights provided by ECLS-B.

Correlations

Table 6.1 presents the correlations among the main variables tested in Aim 1. Overall, parental stressors were correlated in the expected directions. For example, maternal and paternal happiness were highly correlated (r=0.43). Also maternal happiness and maternal report of conflict were inversely correlated (r= -0.44) as was paternal happiness and report of conflict (r= -0.43). Interestingly, parenting stress among mothers and fathers had the weakest correlation among the three stressors (r=0.27). Surprisingly, there were weak correlations between each of the parental stressors and a child's emotional regulation skills. Stronger inverse correlations were detected between a child's emotional regulation skills and maternal conflict (r= -0.25) and maternal parenting stress (r= -0.26).

Bivariate and Multivariate Results

Happiness

At the bivariate level, greater happiness in relationship for both mothers (b=3.61, p<.001) and fathers (b=2.22, p-value <0.001) was associated with a child's higher emotional regulation skills. These results supported the hypothesis that higher levels of parental happiness in their relationship is associated with higher emotional regulation skills for children.

Table 6.2 focused on the association between parental happiness and their child's emotional regulation skills. Increasing maternal and paternal happiness were both associated with greater emotional regulation skills for children in Model 1 after controlling for sociodemographics (including maternal/paternal race, maternal/paternal age, child's gender and region). Results for covariates showed higher emotional regulation skills among girls than

among boys and living in the Midwest was associated with children having lower emotional regulation skills than children in the Northeast. Inclusion of variables representing socioeconomic resources (level of education, employment and household income) in Model 2 slightly attenuated the coefficient for maternal happiness (b=2.83, p-value<0.01) but increased for paternal happiness (b=1.17, p-value <0.01) and both measures remained statistically significant. Higher household income was associated with higher emotional regulation skills and children whose fathers had a college degree or more had higher emotional regulation skills than fathers who had less than a high school degree. The same pattern existed for the main relationship in Model 3 that adjusted for child-level covariates such that the coefficient for paternal happiness slightly increased (b=1.26, p-value<0.01) and reduced for mothers (b=2.46, p-value<0.001). However, these associations changed in Model 4 after adjusting for parent-level covariates (including adverse conflict resolution style, maternal depressive symptomology and number of household routines). The coefficients for maternal and paternal happiness decreased in magnitude (b=0.43 for mothers and b=0.30 for fathers) and neither were statistically significant.

The results from Model 4 highlight the importance of taking parent-level covariates into account when assessing how parental stressors influence child's emotional regulation skills. For example, maternal depressive symptoms, maternal adverse conflict resolution style, the number of household routines and a child's behavioral problems at 2 years of age were associated with the child's emotional regulation skills and in the hypothesized directions. In other words, the number of household routines was associated with higher child's emotional regulation skills and maternal depressive symptomology was associated with lower child's emotional regulation skills. Other covariates were associated with the outcome. Namely, children living in the

Midwest had lower emotional regulation skills than children in the Northeast and higher household income was associated with higher emotional regulation skills. In addition, girls had higher emotional regulation skills than boys. Lastly, low birthweight children had lower emotional regulation skills than children who were not classified as low birthweight at birth.

Parental Conflict

At the bivariate level, parental conflict was associated with lower emotional regulation skills for children (b= -0.52, p-value< 0.001 for mothers report of conflict, and b= -0.19, p-value< 0.001 for fathers report of conflict).

Table 6.3 shows that a statistically significant relationship persisted between maternal report of conflict and a child's emotional regulation skills in all of the models such that child's emotional regulation skills decreased as maternal report of conflict increased. Among fathers' however, the statistically significant bivariate relationship was no longer significant once covariates were introduced into the models. In Model 1, which included sociodemographic covariates, the coefficient for maternal report of conflict was slightly reduced to -0.50 (p-value<0.001). The results for covariates suggested that girls have higher emotional regulation skills than boys and that children living in the Midwest and South had lower emotional regulation skills than children living in the Northeast. In Model 2, which adjusted for socioeconomic resources, only household income was statistically significant such that children from households with higher incomes had higher emotional regulation skills. After including child-level covariates in Model 3 (ever breastfed, received any care outside the home, behavioral problems at 2 years of age, low birthweight), the coefficient for maternal report of conflict attenuated to -0.44 but remained statistically significant. Being low birthweight and child's behavioral problems at 2 years of age were both associated with lower emotional regulation

skills. The same covariates that were significant in Model 2 remained significant in Model 3 (being a girl, living in the Midwest and household income). In Model 4, however, the relationship between maternal report of conflict and a child's emotional regulation skills was almost reduced by half after adjusting for parent-level variables. All of the variables introduced in Model 4 were statistically significant and in the hypothesized direction with paternal adverse conflict resolution style being the only variable that was not statistically significant. For example, maternal depressive symptomology were negatively associated with a child's emotional regulation skills. On the other hand, there is a positive association between the number of household routines and the child's emotional regulation skills. A child's behavioral problems at 2 years of age, and maternal adverse conflict resolution style were all associated with a decrease in a child's emotional regulation skills (See Table 5.3). Moreover, the results suggested that children in the Midwest had lower emotional regulation skills than children in the Northeast. Children who were recorded as being low birthweight had lower emotional regulation skills than children who were not born low birthweight and girls had higher emotional regulation skills than boys. Finally, as hypothesized, household income was associated with an increase in a child's emotional regulation skills.

Parenting Stress

At the bivariate level, higher levels of reported parenting stress for both mothers (b= -.724, p-value< 0.001) and fathers (b= - 0.340, p-value< 0.001) were associated with lower emotional regulation skills for children. These results supported the hypothesis that higher levels of parenting stress decrease a child's emotional regulation skills.

A statistically significant relationship persisted between maternal parenting stress and a child's emotional regulation skills in all of the models (See Table 6.4) and supported the

hypothesis that higher levels of parenting stress are associated with lower child emotional regulation skills. In Model 1, which adjusted for sociodemographic characteristics, the coefficient for mothers and fathers was still statistically significant. In Model 1, girls had higher emotional regulation skills than boys and children living in all three regions (Midwest, South and West) had lower emotional regulation skills than children living in the Northeast. After the inclusion of socioeconomic resources in Model 2, the relationship persisted for both mothers and fathers (b= -0.74, p-value< 0.001 for mothers and b= -0.18,
p-value< 0.01 for fathers). As expected, higher household income was associated with higher child's emotional regulation skills. Having a father in the highest educational category (college or more) was associated with higher child's emotional regulation skills. Similarly to the previous model, girls had higher emotional regulation skills and living in the Midwest was associated with lower emotional regulation skills. Model 3 introduced child-level covariates and slightly attenuated the coefficients for mothers (b= -0.67, p-value< 0.001) and fathers (b= -0.14, p-value<0.05) but both remained statistically significant. The results suggested that children with more behavioral problems at 2 years of age had lower emotional regulation skills at preschool. Being a girl, living in the South, household income and fathers having a college degree or more were all still associated with the outcome. Although the relationship is still significant, the magnitude of the coefficient for mothers (b= -0.46, p-value< 0.001) was largely reduced in Model 4, once parent-level covariates were added. Among fathers, there was no longer a statistically significant relationship between parenting stress and a child's emotional regulation skills in Model 4. All but one (paternal adverse conflict resolution style) of the parent-level covariates was associated with outcome and all in the hypothesized directions. Namely, maternal depressive symptoms and maternal adverse conflict resolution style were both

associated with lower child emotional regulation skills. On the other hand, more household routines were associated with an increase in a child's emotional regulation skills. Other covariates that remained statistically significant were household income, residing in the Midwest, being born classified as low birthweight and being female.

Moderation

The role of maternal education, paternal education, household income and the number of household routines were each tested as potential moderators between the three main relationships tested in this aim: 1) parental happiness in relationship and a child's emotional regulation skills, 2) parental conflict and child's emotional regulation skills and 3) parenting stress and a child's emotional regulation skills. These analyses yielded no statistically significant interactions (data not shown).

Table 6.1 Correlations Between Preschoolers' Emotional Regulation Skills and Parental Stressors, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	1	2	3	4	5	6	7
1. Emotional regulation	1.00						
2. Maternal happiness	0.17***	1.00					
3. Paternal happiness	0.09***	0.43***	1.00				
4. Maternal conflict	-0.25***	-0.44***	-0.32***	1.00			
5. Paternal conflict	-0.09***	0.29***	-0.43***	0.43***	1.00		
6. Maternal parenting stress	-0.26***	-0.21***	-0.16***	0.35***	0.17***	1.00	
7. Maternal parenting stress	-0.11***	-0.10***	-0.22***	0.17***	0.36***	0.27***	1.00

Note: *p<0.05, ** p<0.01, *** p<0.001.

Table 6.2 Regression Models of Preschoolers' Emotional Regulation Skills on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	3.09***	(0.45)	2.83***	(0.46)	2.46***	(0.43)	0.43	(0.47)
Paternal Happiness	1.10*	(0.43)	1.17**	(0.43)	1.26**	(0.40)	0.30	(0.37)
Sociodemographics								
Maternal Race								
Black	-0.62	(1.14)	-0.43	(1.14)	0.88	(1.16)	0.87	(1.19)
Latino	-1.25	(0.80)	-0.46	(0.77)	-0.36	(0.84)	-0.55	(0.86)
Asian	-1.80*	(0.85)	-1.83*	(0.83)	-0.97	(0.71)	-0.15	(0.71)
Other	-2.72	(1.54)	-2.41	(1.53)	-2.08	(1.42)	-1.50	(1.37)
Paternal Race								
Black	1.08	(1.17)	1.49	(1.14)	1.00	(1.15)	0.74	(1.17)
Latino	-0.80	(0.84)	-0.05	(0.84)	-0.03	(0.86)	0.34	(0.84)
Asian	0.36	(0.90)	0.04	(0.89)	-0.32	(0.75)	0.38	(0.71)
Other	-1.55	(1.35)	-1.01	(1.29)	-0.70	(1.06)	-0.63	(1.09)
Parental Age								
Maternal Age	0.08	(0.06)	-0.02	(0.06)	-0.04	(0.06)	-0.01	(0.05)
Paternal Age	-0.03	(0.04)	-0.04	(0.04)	-0.04	(0.04)	-0.04	(0.04)
Female Child	3.94***	(0.38)	3.94***	(0.37)	3.72***	(0.37)	3.78***	(0.35)
Region								
Midwest	-2.49***	(0.66)	-2.32**	(0.70)	-2.52***	(0.62)	-2.45***	(0.61)
South	-1.09	(0.56)	-0.80	(0.61)	-0.55	(0.54)	-0.68	(0.52)
West	-1.06	(0.64)	-0.74	(0.67)	-0.94	(0.65)	-1.02	(0.63)
Socioeconomic Resources								
Income (median-centered)			0.02***	(0.01)	0.02**	(0.00)	0.01**	(0.00)
Maternal Education								
High School Degree			1.22	(0.77)	1.20	(0.79)	0.43	(0.79)
College or more			1.07	(0.93)	0.75	(0.91)	-0.17	(0.88)
Paternal Education								
High School Degree			1.26	(0.78)	1.38	(0.75)	0.95	(0.69)
College or more			1.86*	(0.81)	2.02*	(0.79)	1.33	(0.75)
Maternal Employment								
Employed <35 hours			0.09	(0.58)	-0.04	(0.56)	-0.20	(0.52)
Not in Formal Labor Force			-0.67	(0.46)	-0.68	(0.45)	-0.75	(0.44)
Paternal Employment								
Employed <35 hours			-0.55	(0.94)	-0.63	(0.95)	-0.84	(0.94)
Not in Formal Labor Force			-1.31	(1.06)	-1.44	(0.95)	-0.87	(0.90)

Child Characteristics								
Any Outside Care					0.18	(0.47)	0.12	(0.48)
Never Breastfed					-0.56	(0.54)	-0.15	(0.50)
Low Birthweight					-0.88	(0.50)	-1.13*	(0.48)
Behavioral Problems 2 yrs.					-0.62***	(0.06)	-0.55***	(0.06)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.07	(0.10)
Adverse Conflict Resolution (Maternal)							-0.74***	(0.09)
Maternal Depressive Symptoms							-0.17***	(0.04)
Routines							1.38***	(0.20)
Constant	60.94***	(0.75)	58.38***	(1.17)	64.66***	(1.77)	68.54***	(2.04)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 6.3 Regression Models of Preschoolers' Emotional Regulation Skills on Parental Conflict Scores, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	-0.50***	(0.04)	-0.48***	(0.04)	-0.44***	(0.04)	-0.21***	(0.05)
Paternal Conflict Score	0.01	(0.05)	-0.00	(0.05)	0.00	(0.04)	0.09	(0.05)
Sociodemographics								
Maternal Race								
Black	-0.36	(1.06)	-0.17	(1.05)	1.06	(1.06)	1.00	(1.15)
Latino	-1.17	(0.76)	-0.43	(0.74)	-0.32	(0.81)	-0.46	(0.84)
Asian	-1.19	(0.84)	-1.24	(0.83)	-0.45	(0.71)	-0.02	(0.71)
Other	-2.22	(1.53)	-1.95	(1.49)	-1.67	(1.41)	-1.43	(1.37)
Paternal Race								
Black	0.82	(1.07)	1.21	(1.06)	0.77	(1.07)	0.70	(1.15)
Latino	-0.50	(0.77)	0.18	(0.77)	0.18	(0.81)	0.37	(0.81)
Asian	0.27	(0.93)	-0.01	(0.93)	-0.37	(0.79)	0.29	(0.73)
Other	-1.82	(1.47)	-1.29	(1.38)	-0.98	(1.13)	-0.70	(1.11)
Parental Age								
Maternal Age	0.11*	(0.05)	0.01	(0.06)	-0.01	(0.05)	-0.00	(0.05)
Paternal Age	-0.06	(0.04)	-0.07	(0.04)	-0.06	(0.04)	-0.04	(0.04)
Female Child	3.85***	(0.36)	3.86***	(0.35)	0.00		0.00	
Region								
Midwest	-2.08***	(0.58)	-1.93**	(0.60)	-2.15***	(0.56)	-2.32***	(0.59)
South	-0.98*	(0.47)	-0.70	(0.51)	-0.47	(0.47)	-0.66	(0.50)
West	-0.89	(0.54)	-0.59	(0.56)	-0.78	(0.57)	-0.97	(0.60)
Socioeconomic Resources								
Income (median-centered)			0.02***	(0.00)	0.02***	(0.00)	0.01**	(0.00)
Maternal Education								
High School Degree			1.18	(0.76)	1.18	(0.77)	0.46	(0.79)
College or more			0.97	(0.89)	0.72	(0.87)	-0.15	(0.87)
Paternal Education								
High School Degree			0.96	(0.75)	1.09	(0.73)	0.87	(0.68)
College or more			1.51	(0.80)	1.70*	(0.77)	1.25	(0.74)
Maternal Employment								
Employed <35 hours			0.21	(0.58)	0.09	(0.56)	-0.17	(0.53)
Not in Formal Labor Force			-0.70	(0.46)	-0.70	(0.46)	-0.81	(0.44)
Paternal Employment								
Employed <35 hours			-0.75	(0.92)	-0.80	(0.91)	-0.83	(0.94)
Not in Formal Labor Force			-1.23	(1.10)	-1.36	(0.98)	-0.87	(0.91)

Child Characteristics								
Any Outside Care					0.19	(0.47)	0.11	(0.48)
Never Breastfed					-0.44	(0.53)	-0.12	(0.50)
Low Birthweight					-1.12*	(0.50)	-1.21*	(0.48)
Behavioral Problems 2 yrs.					-0.58***	(0.06)	-0.54***	(0.06)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.15	(0.10)
Adverse Conflict Resolution (Maternal)							-0.59***	(0.10)
Maternal Depressive Symptoms							-0.15***	(0.04)
Routines							1.36***	(0.19)
Constant	68.08***	(0.67)	65.64***	(1.19)	70.78***	(1.72)	69.63***	(2.00)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 6.4 Regression Models of Preschoolers' Emotional Regulation Skills on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	-0.74***	(0.07)	-0.74***	(0.07)	-0.67***	(0.07)	-0.46***	(0.08)
Paternal Parenting Stress	-0.15*	(0.06)	-0.18**	(0.07)	-0.14*	(0.06)	-0.09	(0.06)
Sociodemographics								
Maternal Race								
Black	-0.23	(1.09)	0.05	(1.05)	1.21	(1.08)	1.16	(1.16)
Latino	-1.40	(0.84)	-0.63	(0.78)	-0.51	(0.85)	-0.58	(0.86)
Asian	-0.69	(0.90)	-0.85	(0.86)	-0.14	(0.71)	0.16	(0.72)
Other	-2.03	(1.48)	-1.61	(1.46)	-1.36	(1.37)	-1.27	(1.35)
Paternal Race								
Black	0.26	(1.09)	0.90	(1.04)	0.50	(1.08)	0.45	(1.15)
Latino	-0.90	(0.85)	-0.04	(0.83)	-0.01	(0.86)	0.29	(0.83)
Asian	0.31	(0.94)	0.01	(0.91)	-0.34	(0.75)	0.42	(0.72)
Other	-1.76	(1.40)	-1.16	(1.34)	-0.88	(1.07)	-0.60	(1.05)
Parental Age								
Maternal Age	0.08	(0.05)	-0.03	(0.06)	-0.05	(0.05)	-0.02	(0.05)
Paternal Age	-0.04	(0.04)	-0.05	(0.04)	-0.05	(0.04)	-0.04	(0.04)
Female Child	3.95***	(0.38)	3.95***	(0.36)	3.74***	(0.36)	3.78***	(0.35)
Region								
Midwest	-2.66***	(0.64)	-2.43***	(0.67)	-2.61***	(0.61)	-2.49***	(0.62)
South	-1.30*	(0.51)	-0.98	(0.56)	-0.73	(0.51)	-0.80	(0.51)
West	-1.22*	(0.60)	-0.88	(0.63)	-1.07	(0.63)	-1.07	(0.62)
Socioeconomic Resources								
Income (median-centered)			0.02***	(0.01)	0.02***	(0.00)	0.01**	(0.00)
Maternal Education								
High School Degree			0.77	(0.77)	0.80	(0.78)	0.22	(0.79)
College or more			1.15	(0.90)	0.85	(0.90)	-0.01	(0.87)
Paternal Education								
High School Degree			1.19	(0.77)	1.29	(0.74)	0.89	(0.68)
College or more			2.13**	(0.77)	2.23**	(0.76)	1.46*	(0.72)
Maternal Employment								
Employed <35 hours			0.75	(0.57)	0.56	(0.56)	0.14	(0.52)
Not in Formal Labor Force			0.20	(0.46)	0.10	(0.45)	-0.39	(0.44)
Paternal Employment								
Employed <35 hours			-0.32	(0.97)	-0.41	(0.96)	-0.56	(0.94)
Not in Formal Labor Force			-1.45	(0.99)	-1.55	(0.89)	-0.99	(0.87)

Child Characteristics								
Any Outside Care					0.13	(0.48)	0.11	(0.48)
Never Breastfed					-0.56	(0.55)	-0.23	(0.50)
Low Birthweight					-0.89	(0.49)	-1.09*	(0.47)
Behavioral Problems 2 yrs.					-0.57***	(0.06)	-0.52***	(0.06)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.06	(0.09)
Adverse Conflict Resolution (Maternal)							-0.63***	(0.09)
Maternal Depressive Symptoms							-0.11**	(0.04)
Routines							1.39***	(0.20)
Constant	68.36***	(0.82)	65.36***	(1.34)	70.56***	(1.79)	69.92***	(2.02)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Chapter 7: Aim 2 Results

Overview of Aim, Hypotheses and Methods

Aim 2 tested the relationship between a preschooler's emotional regulation skills and 8 obesity risk factors (number of family meals, fast food consumption, soda consumption, fruit consumption, vegetable consumption, sleep duration, odds of exceeding the daily guideline for screentime and the odds of being categorized as obese based on their BMI). Four of the outcomes are considered obesity promoting behaviors: fast food consumption, soda consumption, exceeding the daily guideline for screentime being obese. The other four outcomes (family meals, vegetable consumption, fruit consumption and sleep duration) are all considered protective behaviors that decrease a child's obesity risk. I hypothesized that a child's emotional regulation skills would be associated with lower levels of obesity promoting behaviors but associated with higher levels of protective behaviors. For this aim, I conducted multivariate OLS regression, multivariate logistic regression and negative binomial regression, depending on the specific outcome. For each relationship, I first tested the simple, or bivariate, association. Next, I expanded the analyses by running 4 nested regression models. The first multivariate model (Model 1) added socio-demographic variables including: race (for each parent), mean-centered age (for each parent), child gender and region of the country the interview was conducted in. The second model (Model 2) introduced indicators of the socioeconomic resources including maternal and paternal level of education, maternal and paternal employment status and median-centered household income. Model 3 introduced child-level covariates including whether the child was receiving any care outside the home, if the child had ever been breastfed, whether the child had been classified as low birthweight and the child's behavioral problems at 2 years of age score. The final model (Model 4) introduced parent-level covariates including: adverse

conflict resolution style score (for each parent), maternal depressive symptomology score and the number of household routines. Finally, the relationship of emotional regulation skills on each of the 8 obesity risk factors was tested for moderation. In specific, I tested to see if there was a significant interaction between a child's emotional regulation skills and the following hypothesized moderators: maternal education, paternal education, household income (centered at the median) and the number of household routines.

Correlations

Overall, there were weak correlations among the main variables for Aim 2 (Table 7.1). There were surprisingly weak correlations between the obesity risk factors with the strongest being between fruit and vegetables (r= 0.42) and fast food and soda consumption (r= 0.18). The strongest correlation between emotional regulation skills and an obesity risk factor was with soda consumption (r=0.20). All other correlations between emotional regulation skills and obesity risk factors yielded a coefficient below 0.1.

Bivariate and Multivariate Results

Frequency of Family Meals

The bivariate results supported the hypothesis that children with higher emotional regulation skills engaged in family meals more often than children with lower emotional regulation skills (b= 0.02, p-value < 0.001). The coefficient for emotional regulation skills remained unchanged in Model 1 and was still statistically significant after adjusting for sociodemographics in Model 1 (Table 7.2). The only significant sociodemographic covariate in Model 1 suggested that Black mothers reported having fewer family meals per week than White mothers. Even after adjusting for socioeconomic resources in Model 2, the coefficient for emotional regulation skills was still 0.02 and statistically significant. Black mothers reported

having fewer family meals than White mothers and mothers not employed in the formal labor force reported having more family meals than mothers who were employed 35 hours or more in the formal labor force. The coefficient for the main effects remained unchanged in Model 3, after introducing child-level covariates and the relationship was still statistically significant. Black mothers still reported fewer family meals than White mothers and mothers not in the formal labor force still reported having more family meals than mothers who were employed 35 hours or more in the formal labor force. None of the child-level covariates were associated with the outcome. The coefficient for emotional regulation skills was slightly reduced in Model 4 after adjusting for parent-level covariates (b=0.01) but was still associated with having more family meals. Interestingly, all parent-level covariates introduced in Model 4 were associated with the outcome with maternal and paternal adverse conflict resolution style and maternal depressive symptomology being associated with fewer family meals. Having more household routines, on the other hand, were associated with more family meals.

Fast Food Consumption

The bivariate results supported the hypothesized relationship that higher emotional regulation skills are associated with lower frequency of fast food consumption (b=-0.01, p-value <0.01). Table 7.3 presents the results for the nested multivariate negative binomial regression models predicting the relationship between a child's emotional regulation skills and fast food consumption. The relationship persisted when sociodemographic variables (Model 1) were introduced to the model. The only demographic covariates that were significant related to regional indicating that children in the South and West ate more fast food than their peers in the Northeast. In Model 2, the coefficient for emotional regulation skills remained the same as in the previous two models (b= -0.01) and was still significant after controlling for socioeconomic

resources. The results suggested that children whose fathers had a college degree or more ate less fast food than their counterparts whose fathers had less than a high school degree. The regional differences from Model 1 stayed the same in Model 2. Model 3 added child-level covariates and the coefficient for emotional regulation skills remained the same as in the previous three models (b= -0.01, p-value <0.05). The only child-level covariate that was associated with the outcome was whether the child had ever been breastfed and supported my hypothesis that children who had never been breastfed ate more fast food than children who had been breastfed. The differences by paternal education and region in Models 2 were the same in Model 3. The main relationship between emotional regulation skills and fast food consumption disappeared in Model 4 after introducing parent-level covariates. This finding suggests that perhaps the relationship that was seen in Models 1-3 was in fact spurious. All but one of the parent-level covariates were associated with the outcome (maternal depressive symptomology being the exception). Both paternal and maternal adverse conflict resolution styles were associated with the outcome but only maternal adverse conflict resolution style was associated with an increase in fast food consumption. For fathers' adverse conflict resolution style, the relationship was contrary to what I expected and suggested that children whose fathers had less optimal conflict resolution styles ate fast food less often than their peers whose fathers had higher scores on the adverse conflict resolution styles measure. As expected, more household routines were associated with less fast food consumption. The regional differences that existed in previous models still held true in Model 4 as did the difference between children who had and had not been breastfed. A new finding emerged in Model 4 that showed that children whose fathers were Asian ate less fast food than children with White fathers.

Soda Consumption

The bivariate results showed that higher emotional regulation skills were associated with lower soda consumption (b= -0.02, p-value <0.001). After adjusting for sociodemographics in Model 1, the coefficient for emotional regulation skills stayed the same (b= -0.02, p-value < 0.001) (Table 7.4). Living in the South was also associated with more soda consumption. In Model 2, which adjusted for socioeconomic resources, the relationship between emotional regulation skills and soda consumption remained statistically significant and the coefficient was marginally attenuated (b= -0.01, p-value<0.01). Both maternal and paternal levels of education were associated with soda consumption and in the hypothesized direction. Namely, having at least a high school degree as well as having a college degree or more were both associated with lower soda consumption for children. This relationship existed for both mothers and fathers. A mother who reported working less than 35 hours per week in the formal labor force also reported that her child drank soda less often than a mother who reported being employed in the formal labor force for 35 hours or more per week. Model 3 added child-level covariates and the coefficient for emotional regulation skills was identical to what it was in Model 3 (b= -0.01, p-value<0.01). Child behavioral problems at 2 years of age were associated with higher levels of soda consumption, as expected. Moreover, children who had never been breastfed consumed more soda than children whose mothers reported that they had breastfed their child. The main effects for the relationship between emotional regulation skills and soda consumption disappeared in Model 4 when parent-level covariates were introduced into the model. Model 4 showed that soda consumption decreased as the number of household routines increased (p-value <0.001). However, surprisingly a higher adverse conflict resolution style among fathers was associated with a decrease in a child's soda intake (p-value<0.05). Maternal education, paternal

education, maternal employment, living in the South, behavioral problems at 2 years of age and history of being breastfed were all still associated with the outcome.

Vegetable Consumption

The bivariate results support the hypothesized relationship that higher emotional regulation skills are associated with higher vegetable consumption (b= 0.03, p-value < 0.05). The relationship persists in Model 1 after introducing sociodemographics (b= 0.04, p-value <0.01) (Table 7.5). Living in the South, Midwest and West were associated with higher levels of vegetable consumption relative to children living in the Northeast. A higher maternal age was associated with a lower level of vegetable consumption for children. Also, Asian mothers reported that their children ate more vegetables than White mothers. The coefficient for emotional regulation skills remained the same in Model 2 (b= 0.04) and was still statistically significant after socioeconomic resources were taken into account. None of the socioeconomic resources (maternal/paternal level of education and employment, and household income) were associated with the outcome. However, living in the South, Midwest and West were associated with higher levels of vegetable consumption in comparison to children who lived in the Northeast. After accounting for child-level covariates in Model 3, the relationship between emotional regulation skills and vegetable consumption remained statistically significant and the coefficient slightly increased (b= 0.05, p-value<0.001). As expected, children who had never been breastfed ate fewer vegetables than children who had been breastfed. Moreover, children in in the Midwest and the West continued to have higher levels of vegetable consumption in comparison to their peers in the Northeast. Lastly, in Model 4, after parent-level covariates were introduced, higher levels of emotional regulation skills remained associated with higher levels of vegetable consumption. Moreover, higher number of household routines was associated with

increases in vegetable consumption. Living in the Midwest and West were still associated with higher levels of vegetable consumption.

Fruit Consumption

At the bivariate level, there was not a statistically significant relationship between a child's emotional regulation skills and fruit consumption. There was also no significant relationship between a child's emotional regulation skills and fruit consumption once sociodemographics were added in Model 1 (Table 7.6). However, the results showed that Asian mothers reported that their children ate fruit less often than White mothers whereas Latino mothers reported that their children ate fruit more often than their White counterparts. A statistically significant relationship emerged between emotional regulation skills and fruit consumption in Model 2 once socioeconomic resources were added suggesting that this relationship had been suppressed in Model 1. Model 2 also showed that maternal and paternal education was associated with a child's fruit consumption, but in opposite directions. Children whose mothers had a college degree or more education ate more fruit than children whose mothers had a high school degree or less. On the other hand, children whose fathers had at least a high school degree or a college degree or more ate less fruit than their peers whose fathers were in the lowest educational category (less than a high school degree). Maternal employment was also associated with fruit consumption such that mothers who worked either less than 35 hours per week in the formal labor force or who were not in the labor force reported that their children ate more fruit than mothers who were employed 35 hours or more in the formal labor force. There is no significant relationship between a child's emotional regulation skills in Models 3 (which includes child-level covariates) or in Model 4 (which adds parent-level covariates). However, covariates in both models remain significant. In the final model (Model 4), more

household routines were associated with increased fruit consumption whereas mothers with higher adverse conflict resolution style scores was associated with their child eating less fruit. Also, Asian mothers reported that their child ate less fruit than White mothers whereas the opposite was true among Asian and White fathers. The unexpected association between paternal education remained such that fathers with higher levels of education reported that their children ate less fruit than fathers with less than a high school degree. Mothers who were not employed in the labor force reported that their children ate more fruit than mothers who were employed 35 hours or more per week.

Exceeding the Daily Recommended Guideline for Screentime

At the bivariate level, higher emotional regulation skills were associated with lower odds of exceeding the American Academy of Pediatrics guidelines of 2 or more hours of screentime (OR= 0.98, p-value < 0.001). In Model 1, which adjusted for sociodemographic characteristics, the relationship between emotional regulation skills and exceeding the screentime guideline remained statistically significant and the adjusted odds ratio remained unchanged (OR= 0.98, p-value < 0.001) (Table 7.7). Children with Latino fathers, however, had higher odds of exceeding the guideline than children with White fathers. Parental age was also associated with the outcome but in opposite directions for mothers and fathers. An increase in maternal age was associated with lower odds of exceeding the guideline whereas the opposite was true for an increase in paternal age. The relationship between emotional regulation skills and exceeding the screentime guidelines persisted in Model 2 after adjusting for socioeconomic resources (OR= 0.98, p-value < 0.001). Interestingly, children whose mothers were not employed in the formal labor had higher odds of exceeding the guideline in comparison to children whose mothers worked 35 hours or more in the labor force. Having a mother with a college degree or

more education reduced a child's odds of exceeding the screentime guideline. Although the results for household income reached statistical significance (p-value< 0.01), the odds ratio was 1.00 suggesting that there was in fact no difference in the odds in practical terms. An increase in fathers' age remained associated with higher odds of the child exceeding the guideline. Model 3 introduced child-level covariates but did not change the main relationship as it remained statistically significant and had the same adjusted odds ratio as the previous two models (AOR= 0.98). The results showed that receiving any care outside the home lowered a child's odds of exceeding the screentime guidelines and children who had never been breastfed had higher odds of exceeding the screentime guidelines compared to children who had been breastfed. Maternal employment, maternal education and paternal age remained associated with the outcome as in previous models. In the final model (Model 4) parent-level covariates were taken into account and the main relationship remained statistically significant and the adjusted odds ratio slightly increased to 0.99. As expected, higher levels of maternal depressive symptomology increased the odds of a child exceeding the screentime guidelines whereas children who had more household routines had lower odds of exceeding the screentime guideline than children who had less household routines. Maternal employment, maternal education, paternal age and receiving any care outside the home remained associated with the outcome as in previous models. A new relationship emerged among father's level of education showing that children had higher odds of exceeding the guideline if their fathers had at least a high school degree in comparison to children whose fathers had less than a high school degree.

Sleep Duration

At the bivariate level, higher levels of emotional regulation skills were associated with longer sleep duration (b= 0.35, p-value< 0.05). The relationship persisted in Model 1, which

added sociodemographic characteristics (Table 7.8) and the coefficient slightly increased (b=0.37, p-value<0.01). Asian mothers and those in in the 'Other' category reported that their children slept less, on average, than White mothers. Children living in South also slept less, on average, than children living in the Northeast. After adding socioeconomic resources to Model 2, there was still a statistically significant relationship between emotional regulation skills and a child's sleep duration and in the hypothesized positive direction. The results indicated that mothers who worked less than 35 hours per week or who were not employed in the labor force reported that their children slept longer than mothers who worked 35 hours or more per week in the formal labor force. Children whose mother were either Asian or in the 'Other' category had shorter sleep durations than children whose mother was White. The same relationships that were present in Model 2 persisted in Model 3 after child-level covariates were added. Model 3 also showed that receiving any childcare outside the home and higher levels of behavioral problems at 2 years of age were both associated with shorter sleep durations for children. The relationship between a child's emotional regulation skills and sleep duration, however, disappeared in Model 4 once parent-level covariates were added. As hypothesized, an increase in the number of household routines was associated with longer sleep duration. Surprisingly, fathers' adverse conflict resolution style was also associated with an increase in a child's sleep duration. Similarly to previous models, having an Asian mother, mother in the Other category, living in the South, maternal employment, receiving any care outside the home and behavioral problems at 2 years of age were all associated with a child's sleep duration.

Odds of Being Obese

The bivariate analyses did not yield significant findings between emotional regulation skills and a child's odds of being obese. Table 7.9 shows the results for the multivariate

analyses. There was still not a significant main relationship in Model 1 that introduced sociodemographics. However, a significant relationship emerged between a child's emotional regulation skills and the odds of being obese in Models 2-4 but in the opposite direction of what I hypothesized. In Model 2, which introduced socioeconomic resources, the results suggested that higher levels of emotional regulation skills increased the odds of a child being obese (AOR= 1.01, p-value<0.05). Children living in the Southern and Western regions had lower odds of being obese than their peers living in the Northeast. The relationship between emotional regulation skills and odds of being obese persisted in Model 3 that introduced child-level covariates. The results showed that children who were classified low birthweight had lower odds of being obese than children were not born low birthweight. The same regional differences present in Model 2 remained in Model 3. In the final model (Model 4), the addition of parent-level covariates slightly increased the odds of being obese as emotional regulation skills increased (AOR=1.02, p-value<0.05). Being low birthweight, living in the Southern and Western regions remained associated with the outcome.

Moderation: Results

The relationship between emotional regulation skills and each of the 8 obesity risk factors was also tested for moderation. Analyses were performed to assess whether parental resources, specifically maternal and paternal education, household income and the number of household routines, moderated the main effects. I hypothesized that these moderators would serve as protective factors for obesity, in other words decrease a child's engagement in obesity promoting behaviors and increase a child's engagement in behaviors associated with a lower obesity risk. To carry these analyses out, I included an interaction term for emotional regulation skills and each of the parental resources to the base model including the other covariates from Models 1-4.

I then conducted a Wald test to determine whether the inclusion of the interaction term improved the model fit.

Family Meals

Table 7.10 presents the conditional relationship between emotional regulation skills and the number of household routines. The results suggest that the relationship between emotional regulation skills and family meals varied by the number of household routines. Greater emotional regulation skills and having more numerous household routines both increased the frequency of family meals. However, the benefits of household routines on the frequency of family meals diminished with greater emotional regulation skills (b=-.01, SE=.004) Thus, household routines appear to be more important for maintaining family meals when a child has low levels versus high levels of emotional regulation skills. Figure 7.1 graphically illustrates this conditional relationship.

Table 7.11 shows the results of the model testing the conditional relationship between emotional regulation and maternal education. The interaction suggests that the effect of emotional regulation skills on family meals depends on maternal level of education. Specifically, there was a weaker impact on emotional regulation skills on family meals among children whose mothers have at least a high school degree relative to mothers who have less than a high school degree (beta= -.0.03, SE=0.01) suggesting that having a mother with higher levels of education is a protective factor in this relationship. Figure 7.2 depicts this relationship. The interaction between emotional regulation and paternal education, however, was not statistically significant.

Vegetable Consumption

The relationship between emotional regulation and vegetable consumption was conditional on household income (Table 7.12, Figure 7.3) and the number of household routines (Table 7.13, Figure 7.4).

In both models, the interaction term was significant and positive (beta coefficient for interaction term for routines=0.03, SE= 0.01 and beta coefficient for interaction term with income=0.00, SE= 0.00) suggesting that children in households with higher incomes experience a greater increase in vegetable consumption with increasing levels of emotional regulation (Figure 7.3). Interestingly, at lower levels of emotional regulation a greater number of routines increases vegetable consumption but a crossover occurs for children with med/high levels of emotional regulation where a greater number of routines decreases vegetable consumption (Figure 7.4).

Fruit Consumption

Table 7.14 shows that the relationship between a child's emotional regulation and fruit consumption varied by their fathers' level of education. Compared to children whose fathers had less than a high school education, those whose fathers had a high school degree or higher experienced greater increases in fruit consumption with higher levels of emotional regulation (beta coefficient for at least high school/some college = 0.13, SE= 0.05 and beta coefficient for at least college= 0.13, SE= 0.06). As Figure 7.5 depicts, fruit consumption decreases with increasing emotional regulation among children whose fathers had less than a high school degree, but increases among children whose fathers had at least a high school degree. Interestingly, the relationship did not vary by maternal level of education.

Exceeding the Daily Recommended Guideline for Screentime

There was a significant interaction between emotional regulation skills and household income (Table 7.15) suggesting that the effect of emotional regulation on the likelihood of exceeding the daily recommended guidelines for TV screentime is contingent on household income (OR=.999, CI=0.99-1.00). As seen in Figure 7.6, greater emotional regulation skills decreases the probability a child will exceed the daily recommended guidelines for screentime but does so to a greater extent at higher levels of household income. These results support the hypothesized relationship.

Fast Food Consumption, Soda Consumption, Sleep Duration, Odds of Being Obese

There were no statistically significant interactions in models testing conditional relationships between emotional regulation and the remaining obesity risk factors: fast food consumption, soda consumption, and sleep duration. The relationship between emotional regulation and the odds of being obese was not conditional on any of the tested moderators.

Table 7.1 Correlations Between Emotional Regulation Skills and Obesity Risk Factors among Preschoolers, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	1	2	3	4	5	6	7	8	9
1. Emotional regulation	1.00								
2. Obese	-0.02**	1.00							
3. Family meals	0.08***	-0.03**	1.00						
4. Sleep duration	0.04***	-0.04***	0.03**	1.00					
5. Screentime	-0.10***	0.04***	-0.07***	0.02*	1.00				
6. Fruit	0.05***	0.01	0.05***	0.02*	-0.02**	1.00			
7. Vegetable	0.06***	0.01	0.06***	-0.01	-0.04**	0.41***	1.00		
8. Soda	-0.10***	0.04***	-0.07***	-0.04***	0.17***	0.07***	0.06***	1.00	
9. Fast Food	-0.04***	0.03**	-0.09***	-0.02*	0.10***	0.03*	0.04***	0.18***	1.00

Note: *p<0.05, ** p<0.01, *** p<0.001.

Table 7.2 Regression Models of Frequency of Family Meals on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Emotional Regulation Skills	0.02***	(0.00)	0.02***	(0.00)	0.02***	(0.00)	0.01**	(0.00)
Sociodemographics								
Maternal Race								
Black	-0.88**	(0.27)	-0.87**	(0.27)	-0.83**	(0.27)	-0.79**	(0.26)
Latino	-0.05	(0.17)	-0.04	(0.17)	-0.03	(0.17)	-0.07	(0.16)
Asian	0.07	(0.23)	0.04	(0.24)	0.06	(0.24)	0.09	(0.23)
Other	-0.09	(0.31)	-0.04	(0.30)	-0.03	(0.30)	-0.01	(0.29)
Paternal Race								
Black	0.14	(0.25)	0.24	(0.25)	0.23	(0.25)	0.21	(0.24)
Latino	-0.11	(0.18)	-0.03	(0.18)	-0.04	(0.18)	-0.01	(0.17)
Asian	-0.12	(0.23)	-0.07	(0.24)	-0.07	(0.24)	0.04	(0.24)
Other	0.30	(0.22)	0.32	(0.21)	0.32	(0.21)	0.38	(0.21)
Parental Age								
Maternal Age	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	-0.06	(0.07)	-0.07	(0.07)	-0.07	(0.07)	-0.03	(0.07)
Region								
Midwest	-0.02	(0.14)	-0.01	(0.14)	-0.03	(0.14)	-0.04	(0.13)
South	-0.10	(0.14)	-0.12	(0.14)	-0.13	(0.14)	-0.15	(0.14)
West	0.05	(0.13)	0.02	(0.13)	-0.00	(0.13)	-0.02	(0.13)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			0.28	(0.15)	0.29	(0.15)	0.21	(0.14)
College or more			0.34	(0.17)	0.34	(0.17)	0.24	(0.16)
Paternal Education								
High School Degree			0.06	(0.14)	0.06	(0.14)	0.02	(0.14)
College or more			0.11	(0.15)	0.11	(0.15)	0.05	(0.15)
Maternal Employment								
Employed <35 hours			0.18	(0.10)	0.17	(0.10)	0.13	(0.10)
Not in Formal Labor Force			0.57***	(0.08)	0.53***	(0.08)	0.49***	(0.08)
Paternal Employment								
Employed <35 hours			-0.09	(0.23)	-0.10	(0.23)	-0.10	(0.22)
Not in Formal Labor Force			0.03	(0.18)	0.03	(0.18)	0.07	(0.18)

Child Characteristics								
Any Outside Care					-0.14	(0.09)	-0.14	(0.09)
Never Breastfed					-0.06	(0.07)	-0.02	(0.07)
Low Birthweight					-0.06	(0.11)	-0.09	(0.11)
Behavioral Problems 2 yrs.					-0.01	(0.01)	-0.01	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.04*	(0.02)
Adverse Conflict Resolution (Maternal)							-0.05**	(0.02)
Maternal Depressive Symptoms							-0.02*	(0.01)
Routines							0.18***	(0.05)
Constant	4.39***	(0.26)	3.77***	(0.31)	4.22***	(0.37)	4.96***	(0.40)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.3 Regression Models of Fast Food Consumption on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Emotional Regulation Skills	-0.01*	(0.00)	-0.01*	(0.00)	-0.01*	(0.00)	-0.00	(0.00)
Sociodemographics								
Maternal Race								
Black	0.20	(0.14)	0.19	(0.14)	0.16	(0.13)	0.16	(0.12)
Latino	0.11	(0.07)	0.09	(0.08)	0.12	(0.08)	0.11	(0.07)
Asian	0.11	(0.12)	0.10	(0.11)	0.11	(0.11)	0.09	(0.11)
Other	0.06	(0.10)	0.05	(0.10)	0.04	(0.10)	0.05	(0.09)
Paternal Race								
Black	-0.03	(0.12)	-0.04	(0.13)	-0.03	(0.12)	-0.03	(0.11)
Latino	0.07	(0.07)	0.04	(0.07)	0.05	(0.08)	0.01	(0.08)
Asian	-0.22	(0.12)	-0.20	(0.11)	-0.22	(0.11)	-0.25*	(0.11)
Other	-0.06	(0.12)	-0.08	(0.11)	-0.09	(0.11)	-0.10	(0.10)
Parental Age								
Maternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	-0.07	(0.05)	-0.06	(0.05)	-0.06	(0.05)	-0.08	(0.05)
Region								
Midwest	0.17	(0.11)	0.18	(0.10)	0.19	(0.10)	0.19	(0.10)
South	0.43***	(0.10)	0.43***	(0.10)	0.43***	(0.10)	0.41***	(0.09)
West	0.22*	(0.10)	0.22*	(0.10)	0.25*	(0.11)	0.23*	(0.10)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			-0.12	(0.08)	-0.09	(0.08)	-0.04	(0.08)
College or more			-0.07	(0.12)	-0.01	(0.12)	0.03	(0.11)
Paternal Education								
High School Degree			-0.14	(0.07)	-0.14	(0.07)	-0.09	(0.07)
College or more			-0.21*	(0.08)	-0.19*	(0.08)	-0.13	(0.08)
Maternal Employment								
Employed <35 hours			0.07	(0.08)	0.08	(0.08)	0.08	(0.08)
Not in Formal Labor Force			0.00	(0.05)	-0.00	(0.06)	0.02	(0.06)
Paternal Employment								
Employed <35 hours			0.09	(0.22)	0.07	(0.20)	0.06	(0.18)
Not in Formal Labor Force			0.16	(0.12)	0.15	(0.12)	0.08	(0.10)

Child Characteristics								
Any Outside Care					-0.02	(0.06)	-0.02	(0.06)
Never Breastfed					0.19**	(0.07)	0.17*	(0.07)
Low Birthweight					0.05	(0.06)	0.08	(0.06)
Behavioral Problems 2 yrs.					0.00	(0.01)	0.00	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03*	(0.01)
Adverse Conflict Resolution (Maternal)							0.04***	(0.01)
Maternal Depressive Symptoms							0.00	(0.01)
Routines							-0.12***	(0.03)
Constant	1.01***	(0.20)	1.18***	(0.19)	0.81***	(0.23)	0.85***	(0.28)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.4 Regression Models of Soda Consumption on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Emotional Regulation Skills	-0.02***	(0.00)	-0.01**	(0.00)	-0.01**	(0.00)	-0.01	(0.00)
Sociodemographics								
Maternal Race								
Black	0.40	(0.22)	0.31	(0.25)	0.25	(0.22)	0.26	(0.21)
Latino	0.09	(0.12)	-0.04	(0.11)	-0.01	(0.10)	-0.01	(0.10)
Asian	0.08	(0.14)	0.09	(0.12)	0.09	(0.12)	0.08	(0.11)
Other	0.06	(0.13)	-0.02	(0.12)	-0.04	(0.12)	-0.04	(0.11)
Paternal Race								
Black	-0.14	(0.19)	-0.13	(0.23)	-0.11	(0.20)	-0.14	(0.19)
Latino	0.11	(0.13)	-0.04	(0.13)	-0.03	(0.12)	-0.07	(0.12)
Asian	-0.26	(0.16)	-0.17	(0.14)	-0.17	(0.14)	-0.19	(0.14)
Other	0.16	(0.14)	0.08	(0.13)	0.06	(0.13)	0.03	(0.12)
Parental Age								
Maternal Age	-0.02	(0.01)	0.00	(0.01)	0.00	(0.01)	0.00	(0.01)
Paternal Age	-0.01	(0.01)	-0.00	(0.01)	-0.01	(0.01)	-0.01	(0.01)
Female Child	0.04	(0.06)	0.05	(0.06)	0.05	(0.06)	0.04	(0.06)
Region								
Midwest	0.09	(0.12)	0.11	(0.11)	0.13	(0.11)	0.12	(0.11)
South	0.40***	(0.09)	0.37***	(0.09)	0.37***	(0.09)	0.35***	(0.09)
West	0.02	(0.12)	-0.01	(0.11)	0.04	(0.11)	0.02	(0.11)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			-0.25**	(0.09)	-0.24*	(0.09)	-0.20*	(0.09)
College or more			-0.50***	(0.10)	-0.45***	(0.11)	-0.41***	(0.11)
Paternal Education								
High School Degree			-0.17*	(0.08)	-0.16	(0.08)	-0.14	(0.08)
College or more			-0.49***	(0.11)	-0.45***	(0.11)	-0.42***	(0.11)
Maternal Employment								
Employed <35 hours			-0.23*	(0.09)	-0.21*	(0.09)	-0.20*	(0.09)
Not in Formal Labor Force			-0.07	(0.07)	-0.06	(0.07)	-0.06	(0.07)
Paternal Employment								
Employed <35 hours			0.09	(0.12)	0.06	(0.12)	0.08	(0.12)
Not in Formal Labor Force			0.10	(0.08)	0.09	(0.09)	0.05	(0.09)

Child Characteristics								
Any Outside Care					-0.01	(0.07)	-0.02	(0.07)
Never Breastfed					0.27***	(0.06)	0.24***	(0.06)
Low Birthweight					0.06	(0.07)	0.06	(0.07)
Behavioral Problems 2 yrs.					0.02**	(0.01)	0.02*	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03*	(0.01)
Adverse Conflict Resolution (Maternal)							0.03	(0.01)
Maternal Depressive Symptoms							0.01	(0.00)
Routines							-0.09***	(0.03)
Constant	2.16***	(0.25)	2.56***	(0.25)	1.87***	(0.28)	1.81***	(0.35)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.5 Regression Models of Vegetable Consumption on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Emotional Regulation Skills	0.04**	(0.01)	0.04**	(0.01)	0.05***	(0.01)	0.03*	(0.01)
Sociodemographics								
Maternal Race								
Black	0.29	(1.07)	0.30	(1.07)	0.26	(1.04)	0.27	(0.99)
Latino	1.41*	(0.59)	1.28*	(0.59)	1.10	(0.59)	1.14	(0.58)
Asian	0.18	(0.58)	0.18	(0.59)	0.04	(0.59)	0.14	(0.59)
Other	0.32	(0.91)	0.25	(0.91)	0.26	(0.91)	0.23	(0.88)
Paternal Race								
Black	0.51	(1.00)	0.36	(0.98)	0.33	(0.97)	0.28	(0.91)
Latino	-0.70	(0.59)	-0.85	(0.59)	-0.90	(0.59)	-0.79	(0.58)
Asian	0.19	(0.56)	0.22	(0.57)	0.31	(0.58)	0.50	(0.59)
Other	0.24	(1.09)	0.17	(1.09)	0.15	(1.06)	0.23	(1.04)
Parental Age								
Maternal Age	-0.07*	(0.03)	-0.06	(0.03)	-0.05	(0.03)	-0.05	(0.03)
Paternal Age	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)
Female Child	0.10	(0.27)	0.07	(0.27)	0.04	(0.27)	0.10	(0.27)
Region								
Midwest	0.90**	(0.32)	0.86**	(0.33)	0.83*	(0.33)	0.82*	(0.33)
South	0.77*	(0.35)	0.72*	(0.35)	0.68	(0.36)	0.67	(0.36)
West	1.08**	(0.34)	1.04**	(0.34)	0.88*	(0.34)	0.90*	(0.34)
Socioeconomic Resources								
Income (median-centered)			-0.01	(0.00)	-0.01	(0.00)	-0.01	(0.00)
Maternal Education								
High School Degree			0.15	(0.49)	-0.05	(0.49)	-0.30	(0.51)
College or more			0.28	(0.62)	-0.05	(0.63)	-0.35	(0.65)
Paternal Education								
High School Degree			-0.52	(0.50)	-0.56	(0.51)	-0.67	(0.50)
College or more			-0.54	(0.58)	-0.68	(0.58)	-0.89	(0.58)
Maternal Employment								
Employed <35 hours			0.01	(0.36)	-0.07	(0.37)	-0.17	(0.37)
Not in Formal Labor Force			0.01	(0.28)	-0.02	(0.30)	-0.15	(0.29)
Paternal Employment								
Employed <35 hours			0.20	(0.74)	0.24	(0.72)	0.28	(0.71)
Not in Formal Labor Force			0.39	(0.61)	0.48	(0.61)	0.63	(0.62)

Child Characteristics								
Any Outside Care					-0.03	(0.39)	-0.03	(0.39)
Never Breastfed					-1.17***	(0.29)	-1.06***	(0.30)
Low Birthweight					0.45	(0.27)	0.38	(0.27)
Behavioral Problems 2 yrs.					0.05	(0.03)	0.05	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.02	(0.06)
Adverse Conflict Resolution (Maternal)							-0.11	(0.08)
Maternal Depressive Symptoms							-0.00	(0.02)
Routines							0.68***	(0.16)
Constant	5.07***	(0.87)	5.20***	(1.05)	6.47***	(1.41)	5.84***	(1.45)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.6 Regression Models of Fruit Consumption on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Emotional Regulation Skills	0.03	(0.02)	0.03*	(0.02)	0.03	(0.02)	0.00	(0.02)
Sociodemographics								
Maternal Race								
Black	0.39	(1.37)	0.55	(1.37)	0.71	(1.36)	0.77	(1.32)
Latino	1.47*	(0.68)	1.36	(0.69)	1.26	(0.68)	1.31	(0.68)
Asian	-2.03**	(0.65)	-2.26**	(0.66)	-2.25**	(0.67)	-2.12**	(0.66)
Other	0.70	(0.88)	0.77	(0.84)	0.80	(0.83)	0.73	(0.81)
Paternal Race								
Black	0.86	(1.23)	0.99	(1.25)	0.92	(1.25)	0.85	(1.21)
Latino	0.55	(0.66)	0.53	(0.67)	0.49	(0.68)	0.59	(0.67)
Asian	0.90	(0.58)	0.95	(0.59)	0.95	(0.59)	1.26*	(0.58)
Other	-0.06	(1.12)	-0.05	(1.08)	-0.03	(1.07)	0.15	(1.04)
Parental Age								
Maternal Age	0.03	(0.04)	0.00	(0.04)	0.00	(0.04)	0.01	(0.04)
Paternal Age	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)
Female Child	0.13	(0.29)	0.12	(0.28)	0.11	(0.28)	0.18	(0.28)
Region								
Midwest	0.06	(0.56)	0.15	(0.58)	0.09	(0.56)	0.06	(0.57)
South	-0.78	(0.53)	-0.78	(0.56)	-0.78	(0.56)	-0.84	(0.55)
West	0.48	(0.53)	0.54	(0.56)	0.40	(0.56)	0.36	(0.56)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			0.10	(0.64)	-0.02	(0.65)	-0.27	(0.66)
College or more			1.41*	(0.70)	1.16	(0.70)	0.86	(0.71)
Paternal Education								
High School Degree			-1.80**	(0.61)	-1.80**	(0.62)	-1.92**	(0.63)
College or more			-1.88**	(0.67)	-1.93**	(0.69)	-2.16**	(0.70)
Maternal Employment								
Employed <35 hours			0.65*	(0.31)	0.59	(0.31)	0.47	(0.31)
Not in Formal Labor Force			0.94**	(0.32)	0.92**	(0.33)	0.73*	(0.33)
Paternal Employment			0.00		0.00		0.00	
Employed <35 hours			-0.26	(0.74)	-0.24	(0.73)	-0.20	(0.70)
Not in Formal Labor Force			0.93	(0.71)	0.96	(0.72)	1.10	(0.74)

Child Characteristics								
Any Outside Care					0.02	(0.41)	0.03	(0.41)
Never Breastfed					-0.82*	(0.36)	-0.70	(0.36)
Low Birthweight					0.05	(0.34)	-0.03	(0.34)
Behavioral Problems 2 yrs.					-0.06	(0.03)	-0.05	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.09	(0.07)
Adverse Conflict Resolution (Maternal)							-0.16*	(0.07)
Maternal Depressive Symptoms							0.03	(0.03)
Routines							0.76***	(0.15)
Constant	7.59***	(1.21)	7.95***	(1.42)	10.18***	(1.65)	9.92***	(1.96)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.7 Regression Models of Odds of Exceeding Guideline for Daily Recommended Screentime on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Emotional Regulation Skills	0.98***	(0.96-0.98)	0.98***	(0.97-0.99)	0.98**	(0.97-0.99)	0.99*	(0.97-0.99)
Sociodemographics								
Maternal Race								
Black	1.20	(0.57-2.5)	1.05	(0.48-2.26)	1.02	(0.47-2.21)	1.01	(0.46-2.20)
Latino	1.39	(0.99-1.94)	1.17	(0.81-1.68)	1.24	(0.86-1.76)	1.26	(0.87-1.80)
Asian	0.93	(0.62-1.38)	1.05	(0.68-1.61)	1.07	(0.68-1.67)	1.04	(0.67-1.61)
Other	1.14	(0.75-1.71)	1.07	(0.71-1.58)	1.10	(0.74-1.64)	1.08	(0.72-1.62)
Paternal Race								
Black	1.66	(0.82-3.35)	1.69	(0.82-3.47)	1.74	(0.85-3.57)	1.77	(0.87-3.58)
Latino	1.50*	(1.07-2.09)	1.33	(0.94-1.87)	1.32	(0.92-1.86)	1.28	(0.90-1.79)
Asian	0.82	(0.53-1.24)	0.97	(0.61-1.53)	0.96	(0.59-1.56)	0.90	(0.55-1.46)
Other	1.76	(0.96-3.22)	1.53	(0.85-2.71)	1.50	(0.83-2.69)	1.47	(0.81-2.65)
Parental Age								
Maternal Age	0.95***	(0.92-0.96)	0.98	(0.95-1.38)	0.98	(0.95-1.00)	0.98	(0.95-1.00)
Paternal Age	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)
Female Child	1.14	(0.96-1.35)	1.16	(0.97-1.38)	1.15	(0.96-1.38)	1.12	(0.93-1.34)
Region								
Midwest	1.04	(0.74-1.43)	1.01	(0.72-1.38)	1.00	(0.72-1.37)	1.00	(0.72-1.38)
South	1.05	(0.76-1.44)	0.96	(0.69-1.33)	0.94	(0.67-1.30)	0.94	(0.67-1.30)
West	1.10	(0.78-1.54)	0.95	(0.68-1.32)	0.97	(0.69-1.35)	0.96	(0.68-1.36)
Socioeconomic Resources								
Income (median-centered)			1.00**	(0.99-0.99)	1.00*	(0.99-0.99)	1.00	(0.99-1.00)
Maternal Education								
High School Degree			0.66*	(0.44-0.97)	0.71	(0.48-1.05)	0.76	(0.50-1.13)
College or more			0.38***	(0.24-0.58)	0.43***	(0.27-0.67)	0.47**	(0.29-0.73)
Paternal Education								
High School Degree			1.38	(0.99-1.91)	1.38	(0.98-1.92)	1.44*	(1.01-2.03)
College or more			0.97	(0.66-1.42)	0.99	(0.67-1.44)	1.05	(0.71-1.55)
Maternal Employment								
Employed <35 hours			1.18	(0.90-1.54)	1.18	(0.91-1.53)	1.21	(0.93-1.58)
Not in Formal Labor Force			1.55***	(1.25-1.91)	1.43**	(1.15-1.77)	1.47***	(1.18-1.83)
Paternal Employment								
Employed <35 hours			0.79	(0.47-1.29)	0.77	(0.46-1.27)	0.77	(0.45-1.28)
Not in Formal Labor Force			1.15	(0.73-1.79)	1.12	(0.71-1.76)	1.08	(0.68-1.70)

Child Characteristics								
Any Outside Care					0.66**	(0.51-0.84)	0.66**	(0.50-0.85)
Never Breastfed					1.26*	(1.00-1.56)	1.21	(0.97-1.51)
Low Birthweight					1.00	(0.78-1.27)	1.02	(0.80-1.29)
Behavioral Problems 2 yrs.					1.01	(0.98-1.03)	1.01	(0.98-1.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.99	(0.95-1.03)
Adverse Conflict Resolution (Maternal)							1.03	(0.99-1.07)
Maternal Depressive Symptoms							1.02*	(1.00-1.04)
Routines							0.86**	(0.77-0.94)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.8 Regression Models of Sleep Duration on Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Emotional Regulation Skills	0.37**	(0.14)	0.40**	(0.13)	0.32*	(0.14)	0.19	(0.14)
Sociodemographics								
Maternal Race								
Black	-9.91	(12.86)	-9.35	(13.04)	-7.55	(13.16)	-7.82	(12.57)
Latino	-1.19	(4.73)	-3.55	(4.87)	-3.24	(4.85)	-2.87	(4.85)
Asian	-17.34**	(5.35)	-17.52**	(5.47)	-16.69**	(5.44)	-15.76**	(5.49)
Other	-17.49*	(7.85)	-15.36*	(6.79)	-13.96*	(6.87)	-14.08*	(6.50)
Paternal Race								
Black	-9.98	(12.29)	-4.02	(12.90)	-4.38	(12.80)	-4.66	(12.08)
Latino	-2.85	(4.89)	-0.14	(4.55)	-1.01	(4.67)	0.12	(4.61)
Asian	-7.48	(5.68)	-4.77	(5.77)	-5.05	(5.72)	-3.90	(5.82)
Other	11.53	(10.24)	10.68	(8.80)	10.15	(9.22)	10.39	(8.98)
Parental Age								
Maternal Age	-0.32	(0.30)	-0.18	(0.31)	-0.24	(0.30)	-0.22	(0.31)
Paternal Age	-0.10	(0.24)	-0.22	(0.25)	-0.21	(0.25)	-0.18	(0.25)
Female Child	-1.22	(2.05)	-0.94	(1.99)	-1.36	(2.02)	-0.82	(2.02)
Region								
Midwest	-2.43	(4.32)	-1.67	(4.17)	-3.04	(4.17)	-3.05	(4.06)
South	-19.70***	(4.15)	-20.28***	(4.00)	-21.15***	(4.07)	-20.98***	(3.95)
West	0.17	(3.89)	-1.82	(3.75)	-3.45	(3.64)	-2.89	(3.57)
Socioeconomic Resources								
Income (median-centered)			-0.01	(0.03)	0.00	(0.03)	-0.00	(0.03)
Maternal Education								
High School Degree			-3.56	(5.79)	-2.65	(5.62)	-5.04	(5.74)
College or more			-4.50	(5.57)	-3.76	(5.36)	-6.58	(5.47)
Paternal Education								
High School Degree			-2.35	(4.86)	-2.48	(4.78)	-3.50	(4.69)
College or more			3.65	(5.06)	3.40	(5.04)	1.47	(4.98)
Maternal Employment								
Employed <35 hours			24.91***	(2.62)	23.71***	(2.64)	22.92***	(2.57)
Not in Formal Labor Force			31.56***	(2.54)	28.32***	(2.59)	27.45***	(2.50)
Paternal Employment								
Employed <35 hours			10.94	(5.99)	10.44	(5.81)	10.72	(6.13)
Not in Formal Labor Force			0.31	(5.75)	-0.37	(5.62)	1.22	(5.68)

Child Characteristics								
Any Outside Care					-13.36***	(3.02)	-13.31***	(3.02)
Never Breastfed					-4.39	(2.70)	-3.25	(2.63)
Low Birthweight					4.77	(2.76)	4.13	(2.69)
Behavioral Problems 2 yrs.					-0.69*	(0.31)	-0.64*	(0.30)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.83*	(0.41)
Adverse Conflict Resolution (Maternal)							-0.77	(0.60)
Maternal Depressive Symptoms							-0.15	(0.22)
Routines							6.18***	(1.57)
Constant	619.71***	(9.24)	601.64***	(10.48)	631.40***	(12.98)	622.08***	(13.60)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.9 Regression Models of Predicting Obesity Odds from Preschoolers' Emotional Regulation Skills, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Emotional Regulation Skills	1.01	(0.99-1.02)	1.01*	(1.00-1.02)	1.01*	(1.00-1.02)	1.02*	(1.00-1.02)
Sociodemographics								
Maternal Race								
Black	1.83	(0.71-5.19)	1.82	(0.64-5.12)	1.85	(0.63-5.37)	1.85	(0.64-5.33)
Latino	1.59*	(1.03-2.44)	1.43	(0.89-2.28)	1.50	(0.94-2.38)	1.51	(0.94-2.39)
Asian	1.38	(0.69-2.73)	1.52	(0.73-3.17)	1.59	(0.76-3.32)	1.59	(0.75-3.33)
Other	1.56	(0.80-3.15)	1.56	(0.75-3.19)	1.56	(0.75-3.22)	1.55	(0.76-3.15)
Paternal Race								
Black	0.98	(0.35-2.64)	0.91	(0.31-2.56)	0.93	(0.32-2.67)	0.93	(0.32-2.66)
Latino	1.28	(0.82-1.99)	1.08	(0.66-1.74)	1.08	(0.66-1.75)	1.06	(0.65-1.71)
Asian	0.61	(0.31-1.18)	0.62	(0.29-1.29)	0.61	(0.28-1.26)	0.59	(0.28-1.25)
Other	1.34	(0.78-2.25)	1.22	(0.71-2.12)	1.23	(0.70-2.14)	1.22	(0.70-2.12)
Parental Age								
Maternal Age	0.97*	(0.93-0.99)	0.98	(0.95-1.01)	0.98	(0.95-1.01)	0.98	(0.95-1.01)
Paternal Age	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.02	(0.99-1.05)	1.02	(0.99-1.05)
Female Child	0.87	(0.68-1.09)	0.87	(0.68-1.10)	0.88	(0.69-1.11)	0.87	(0.68-1.11)
Region								
Midwest	0.80	(0.56-1.15)	0.78	(0.54-1.11)	0.78	(0.54-1.12)	0.78	(0.55-1.11)
South	0.76	(0.54-1.04)	0.71*	(0.51-0.98)	0.72*	(0.51-0.99)	0.71*	(0.51-0.99)
West	0.54**	(0.36-0.77)	0.49***	(0.33-0.71)	0.51***	(0.34-0.74)	0.50***	(0.33-0.74)
Socioeconomic Resources								
Income (median-centered)			1.00	(0.99-1.00)	1.00	(0.99-1.00)	1.00	(0.99-1.00)
Maternal Education								
High School Degree			0.80	(0.55-1.14)	0.83	(0.57-1.19)	0.86	(0.60-1.24)
College or more			0.69	(0.42-1.13)	0.73	(0.44-1.20)	0.77	(0.46-1.27)
Paternal Education								
High School Degree			0.78	(0.55-1.09)	0.79	(0.55-1.10)	0.79	(0.56-1.12)
College or more			0.63	(0.38-1.03)	0.65	(0.39-1.06)	0.67	(0.40-1.10)
Maternal Employment								
Employed <35 hours			1.07	(0.78-1.45)	1.10	(0.80-1.49)	1.11	(0.81-1.52)
Not in Formal Labor Force			1.07	(0.83-1.37)	1.09	(0.83-1.42)	1.10	(0.83-1.43)
Paternal Employment								
Employed <35 hours			1.28	(0.73-2.20)	1.27	(0.73-2.19)	1.26	(0.72-2.17)
Not in Formal Labor Force			0.75	(0.41-1.36)	0.74	(0.41-1.34)	0.73	(0.40-1.33)

Child Characteristics								
Any Outside Care					1.06	(0.80-1.41)	1.06	(0.79-1.41)
Never Breastfed					1.27	(0.95-1.69)	1.24	(0.93-1.65)
Low Birthweight					0.52***	(0.36-0.72)	0.52***	(0.36-0.73)
Behavioral Problems 2 yrs.					0.99	(0.96-1.02)	0.99	(0.96-1.02)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							1.00	(0.94-1.04)
Adverse Conflict Resolution (Maternal)							0.99	(0.94-1.05)
Maternal Depressive Symptoms							1.01	(0.97-1.03)
Routines							0.89	(0.79-1.01)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 7.10. Regression of Frequency of Family Meals on Emotional Regulation Skills: Conditional Model with Household Routines (N=4,000)

	B (SE)
Emotional Regulation Skills	0.05*** (0.01)
Routines	1.00** (0.28)
Emotional Regulation Skills* Routines	-0.01** (0.00)
Constant	2.16**
Prob > F	0.003
Notes: *p<0.05, **p<0.01, ***p<0.001. B = unstandardized beta coefficient; SE = standard error Adjusting for: Maternal/Paternal Employment, Maternal/Paternal Race, Maternal/Paternal Education, Maternal/Paternal Age (mean centered), Maternal/Paternal Adverse Conflict Resolution Style, Household Income (median centered), Region, Child ever Breastfed, Child ever in Childcare Outside the Home, Child Low Birthweight Status, Child Behavioral Problems at 2 years, Maternal Depressive Symptomology, Difficulty Raising Child at 2 years, Child Gender	

Figure 7.1 Differential Effects of Emotional Regulation Skills on Frequency of Family Meals by Number of Household Routines

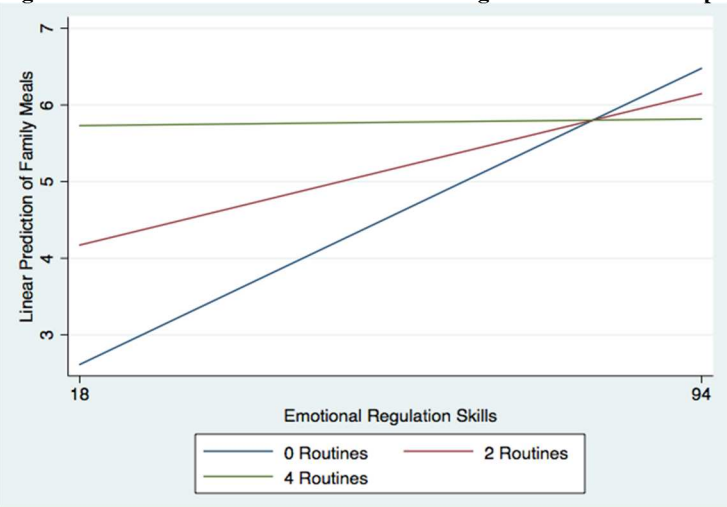


Table 7.11. Regression of Frequency of Family Meals on Emotional Regulation Skills: Conditional Model with Maternal Education (N=4,000)

	B (SE)
Emotional Regulation Skills	0.03** (0.01)
Maternal Education High School Degree/Some College College Degree or more	 2.39* (0.91) 2.01* (1.03)
Emotional Regulation * Maternal Education Emotional Regulation Skills* High School Degree/Some College Emotional Regulation Skills* College Degree or more	 -0.03* (0.01) -0.03 (0.02)
Constant	3.24**
Prob > F	0.04
Notes: *p<0.05, **p<0.01, ***p<0.001. B = unstandardized beta coefficient; SE = standard error Maternal Education reference category: less than high school degree. Adjusting for: Maternal/Paternal Employment, Maternal/Paternal Race, Maternal/Paternal Age (mean centered), Maternal/Paternal Adverse Conflict Resolution Style, Household Income (median centered), Region, Child ever Breastfed, Child ever in Childcare Outside the Home, Child Low Birthweight Status, Child Behavioral Problems at 2 years, Maternal Depressive Symptomology, Difficulty Raising Child at 2 years, Child Gender	

Figure 7.2 Differential Effects of Emotional Regulation Skills on Frequency of Family Meals by Maternal Level of Education

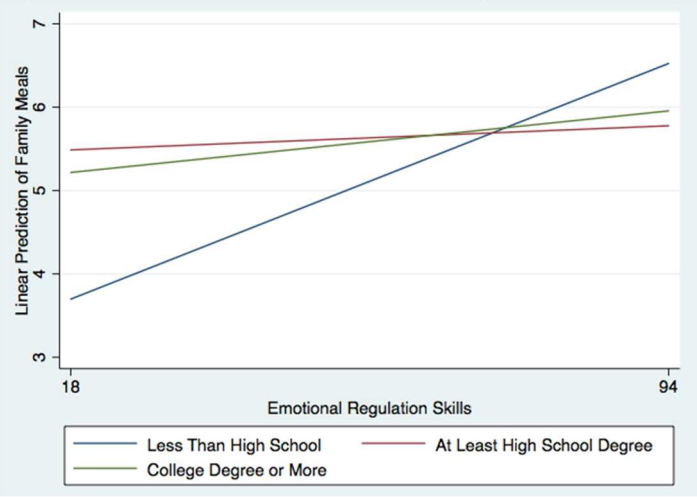


Table 7.12. Regression of Vegetable Consumption on Emotional Regulation Skills: Conditional Model with Household Income (N=4,000)

	B (SE)
Emotional Regulation Skills	0.03* (0.01)
Household Income	-0.04*** (0.02)
Emotional Regulation Skills* Household Income	0.001* (0.00)
Constant	8.37***
Prob > F	0.022

Notes: *p<0.05, **p<0.01, ***p<0.001. B = unstandardized beta coefficient; SE = standard error
Household Income centered at the median.
Adjusting for: Maternal/Paternal Employment, Maternal/Paternal Race, Maternal/Paternal Education, Maternal/Paternal Age (mean centered), Maternal/Paternal Adverse Conflict Resolution Style, Household Income (median centered), Region, Child ever Breastfed, Child ever in Childcare Outside the Home, Child Low Birthweight Status, Child Behavioral Problems at 2 years, Maternal Depressive Symptomology, Difficulty Raising Child at 2 years, Child Gender

Figure 7.3 Differential Effects of Emotional Regulation Skills on Vegetable Consumption by Household Income

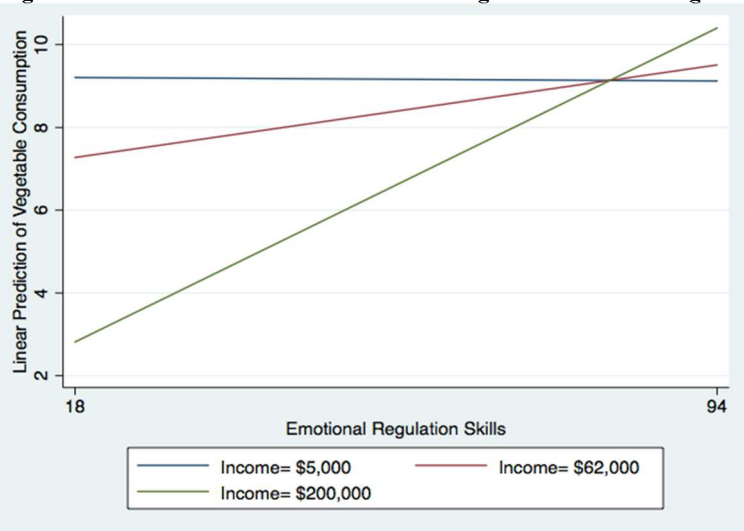


Table 7.13. Regression of Vegetable Consumption on Emotional Regulation Skills: Conditional Model with Household Routines (N=4,000)

	B (SE)
Emotional Regulation Skills	-0.06 (0.04)
Routines	-1.17 (0.93)
Emotional Regulation Skills* Routines	0.03*** (0.01)
Constant	14.19***
Prob > F	0.04
Notes: *p<0.05, **p<0.01, ***p<0.001. B = unstandardized beta coefficient; SE = standard error Adjusting for: Maternal/Paternal Employment, Maternal/Paternal Race, Maternal/Paternal Education, Maternal/Paternal Age (mean centered), Maternal/Paternal Adverse Conflict Resolution Style, Household Income (median centered), Region, Child ever Breastfed, Child ever in Childcare Outside the Home, Child Low Birthweight Status, Child Behavioral Problems at 2 years, Maternal Depressive Symptomology, Difficulty Raising Child at 2 years, Child Gender	

Figure 7.4 Differential Effects of Emotional Regulation Skills on Vegetable Consumption by Number of Household Routines

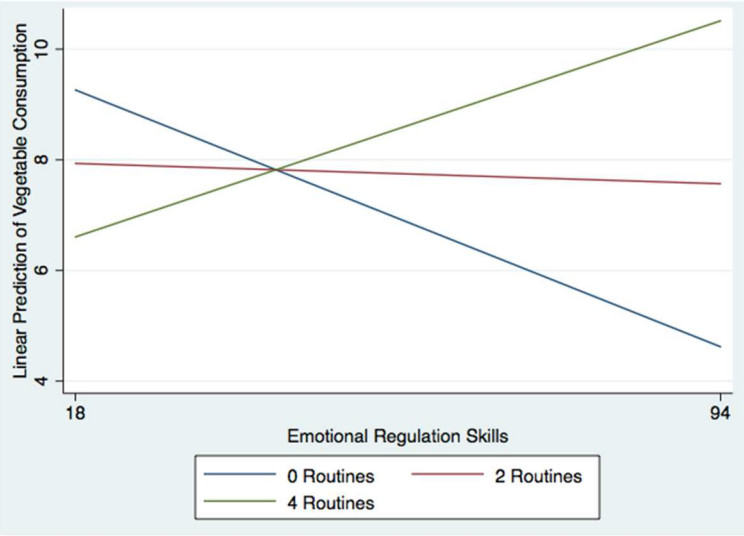


Table 7.14. Regression of Fruit Consumption on Emotional Regulation Skills: Conditional Model with Paternal Education (N=4,000)

	B (SE)
Emotional Regulation Skills	-0.08 (0.06)
Paternal Education	
High School Degree/Some College	-10.67*** (3.61)
College Degree or more	-10.55** (4.01)
Emotional Regulation * Paternal Education	
Emotional Regulation Skills* High School Degree/Some College	0.13** (0.05)
Emotional Regulation Skills* College Degree or more	0.13* (0.06)
Constant	14.69***
Prob > F	0.05
Notes: *p<0.05, **p<0.01, ***p<0.001. B = unstandardized beta coefficient; SE = standard error Paternal Education reference category: less than high school degree. Adjusting for: Maternal/Paternal Employment, Maternal/Paternal Race, Maternal/Paternal Age (mean centered), Maternal/Paternal Adverse Conflict Resolution Style, Household Income (median centered), Region, Child ever Breastfed, Child ever in Childcare Outside the Home, Child Low Birthweight Status, Child Behavioral Problems at 2 years, Maternal Depressive Symptomology, Difficulty Raising Child at 2 years, Child Gender	

Figure 7.5 Differential Effects of Emotional Regulation Skills on Fruit Consumption by Paternal Level of Education

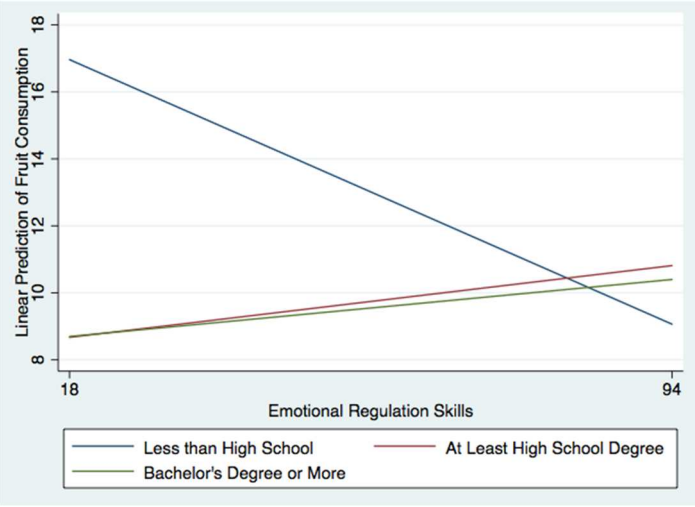
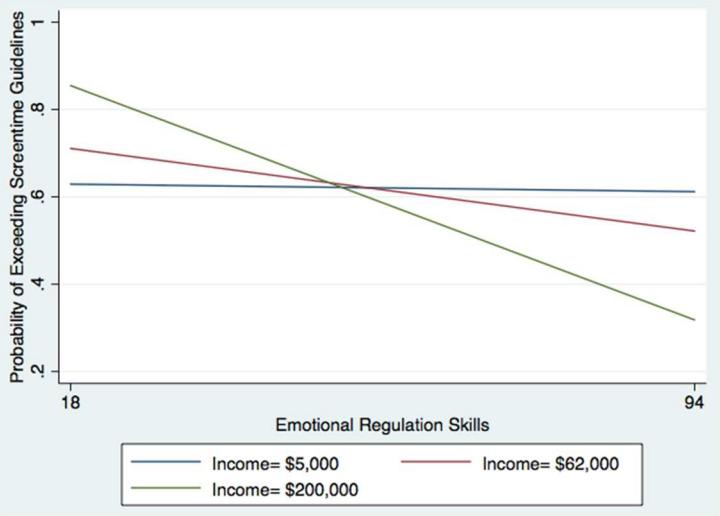


Table 7.15. Regression of Exceeding Daily Guidelines for Screentime on Emotional Regulation Skills: Conditional Model with Household Income (N=4,000)

	Odds Ratio (95% CI)
Emotional Regulation Skills	0.99* (0.98- 0.99)
Household Income	1.01 (0.99-1.02)
Emotional Regulation Skills* Household Income	0.99* (0.99-1.00)
Constant	2.77
Prob > F	0.054

Notes: *p<0.05, **p<0.01, ***p<0.001. B = unstandardized beta coefficient; CI = confidence interval
Household income centered at the median.
Adjusting for: Maternal/Paternal Employment, Maternal/Paternal Race, Maternal/Paternal Education, Maternal/Paternal Age (mean centered), Maternal/Paternal Adverse Conflict Resolution Style, Household Income (median centered), Region, Child ever Breastfed, Child ever in Childcare Outside the Home, Child Low Birthweight Status, Child Behavioral Problems at 2 years, Maternal Depressive Symptomology, Difficulty Raising Child at 2 years, Child Gender

Figure 7.6 Differential Effects of Emotional Regulation Skills on Odds of Exceeding Daily Guideline for Screentime by Household Income



Chapter 8: Aim 3 Results

Overview of Aim, Hypotheses and Methods

Aim 3 tested the relationship between the 3 indicators of parenting stress assessed previously in Aim 1 (happiness in relationship, conflict score, parenting stress) and the 8 obesity risk factors measured in Aim 2 (number of family meals, fast food consumption, soda consumption, fruit consumption, vegetable consumption, sleep duration, exceeding the daily guideline for screentime and the odds of being obese). I hypothesized that higher levels of parental stress would be positively associated with a child's engagement in obesity promoting behaviors and negatively associated with protective behaviors (e.g. family meals and fruit consumption). For this aim, I conducted multivariate OLS regression, multivariate logistic regression and negative binomial regression, depending on the specific outcome analyzed. For each relationship, I first tested the simple, or bivariate, association. Next, I expanded the analyses by running 4 nested regression models. The first multivariate model (Model 1) added socio-demographic variables including: race (for each parent), mean-centered age (for each parent), child gender and region of the country the interview was conducted in. The second model (Model 2) introduced indicators of the socioeconomic resources including maternal and paternal level of education, maternal and paternal employment status and median-centered household income. Model 3 introduced child-level covariates including whether the child was receiving any care outside the home, if the child had ever been breastfed, whether the child had been classified as low birthweight and the child's behavioral problems at 2 years of age score. The final model (Model 4) introduced parent-level covariates including: adverse conflict resolution style score (for each parent), maternal depressive symptomology score and the number of household routines. The second sub-question of this aim tested whether child's emotional regulation skills

mediated the relationship between the parental stressors and the child's obesity risk. To do this, I tested a model that included emotional regulation skills with all of the other covariates from Models 5 to test that the hypothesized mediator was associated with the outcome and that the main relationship was still significant. I also ran a model to test whether the mediator was associated with the independent variable. If all three criterion for mediation analyses were met, I formally tested for mediation. I assessed mediation using the Sobel test for models with a continuous outcome and the KHB method for models with a binary outcome.

The final sub-question of this aim included an autoregressive path analysis to assess the relationship between parental stressors other over time as well as how they influenced a child's odds of being obese at preschool. This was the only portion of the dissertation that included indicators of parental relationship quality (happiness in relationship and conflict score) from earlier waves, namely the 9 months and 2 years waves of the ECLS-B. Parenting stress was not included in these analyses because it was not measured in the 9-month wave.

Correlations

Table 8.1 shows the correlations between all of the main variables for Aim 3. As expected, maternal and paternal happiness in their relationship were correlated (r= 0.43) as were maternal and paternal reports of conflict in their relationship (r =0.44). Consistent with what I hypothesized, the correlation between happiness in relationship and conflict had a negative coefficient for both mothers (r= -0.43) and fathers (r= -0.44). Interestingly, maternal and paternal parenting stress had the weakest correlations among all three indicators of parental stress (0.27). There are unexpectedly weak correlations between the obesity risk factors with most of them having a coefficient below 0.1. Interestingly, only fruits and vegetables yielded a

moderate correlation (0.41). The results show that, overall, there are weak correlations between parental stressors and the child's obesity risk factors (r ranging from 0.01 to 0.08).

Bivariate and Multivariate Results

Happiness in Relationship

Family Meals

The bivariate results show that higher levels of maternal and paternal happiness in their relationship were associated with an increase in the frequency of family meals (b=0.31, p-value< 0.001 for mothers and b=0.25, p-value< 0.01 for fathers). None of the multivariate analyses yielded a statistically significant relationship between maternal happiness in relationship or paternal happiness in relationship and the frequency of family meals (See Table 8.2). However, several of the covariates were associated with the outcome. Most noticeably was that all parent-level covariates in Model 4 were associated with the frequency of family meals and in the hypothesized directions (adverse conflict resolution (for mothers and fathers) reduced frequency of family meals as did maternal depressive symptomology whereas family routines increased the frequency of family meals). Additional significant covariates included maternal race and maternal employment as Black mothers reported less frequent family meals than White mothers and mothers who reported not being in the workforce reported having more family meals than mothers who reported working 35 hours or more per week.

Fast Food Consumption

There were no significant bivariate relationships between maternal or paternal happiness in relationship and a child's fast food intake. Table 8.3 presents the multivariate analyses and shows that there was still no significant relationship between maternal or paternal happiness in relationship and a child's fast food intake in Model 1, which introduced sociodemographics, or in

Model 2 that adjusted for child-level covariates. However, a statistically significant relationship emerged between maternal happiness and a child's fast food intake in Model 4, after parent-level covariates were added to the model. Moreover, the results were in the opposite direction of what I had expected. Namely, children ate fast food more often when their mothers reported being happy in their relationship (b= 0.12, p-value< 0.05) in comparison to children whose mothers reported not being happy in their relationship. This finding suggests that there was suppression of the main effects in previous models. In addition, the findings suggested that children whose fathers were Asian ate less fast food than children with White fathers. Children living in the Southern and Western regions ate fast food more often than their peers in the Northeast. As expected, children who were never breastfed ate fast food more often than children who had been breastfed. Parental adverse conflict resolution style was associated with the outcome but in opposite directions for mothers and fathers: child's fast food intake increased as mothers reported more adverse confliction resolution styles whereas a child's fast food intake decreased as fathers reported more adverse styles of resolving conflict. As expected, the level of fast food consumption decreased as the number of household routines increased.

Soda Consumption

There were no significant bivariate relationships between parental happiness in relationship and a child's soda intake. None of the multivariate analyses yielded a statistically significant relationship between maternal happiness in relationship or paternal happiness in relationship and a child's soda intake (See Table 8.4). However, several covariates were associated with the outcome. Most noticeably, all of the parent-level covariates added in Model 4 were associated with a child's soda intake. The results showed that a higher level of household routines decreased a child's soda intake, which supports the hypothesized direction. In addition,

higher levels of maternal depressive symptomology and adverse conflict resolution style were both associated with a child consuming more soda, which supported my hypotheses. However, paternal adverse conflict resolution style yielded an unexpected association suggesting that children whose fathers had more destructive conflict resolution styles drank less soda. Additional significant covariates included maternal and paternal education, which supported the hypothesis that higher parental level of education reduces a child's soda intake. Moreover, children in the South drank more soda than children in the Northeast. And, as expected, children who had never been breastfed drank more soda than children who had been breastfed.

Vegetable Consumption

There were no significant bivariate relationships between happiness in relationship among fathers or among mothers and their child's vegetable intake. None of the multivariate analyses yielded a statistically significant relationship between maternal happiness in relationship or paternal happiness in relationship and a child's vegetable consumption (See Table 8.5). However, some covariates were associated with the outcome in the final model (Model 4). For example, children in the Midwest and West ate more vegetables than children living in the Northeast. As expected, children who had never been breastfed ate fewer vegetables than children who had been breastfed. And, as hypothesized, there was a positive association with the number of household routines and a child's vegetables consumption.

Odds of Exceeding Guidelines for Daily Recommended Screentime

At the bivariate level, there was not a significant finding for parental happiness and a child's odds of exceeding the daily recommended guidelines for screentime. The multivariate results show that there was no statistically significant relationship between maternal happiness or paternal happiness in their relationship and a child's odds of exceeding the daily recommended

guideline of less than 2 hours of screentime (See Table 8.7). However, in the final model (Model 4), which introduced parent-level covariates, there were variables associated with the outcome. For example, all but one of the parent-level covariates (paternal adverse conflict resolution being the exception) were associated with the outcome and supported the hypothesized directions. The results showed that higher levels of maternal adverse conflict resolution style and maternal depressive symptomology increased the odds of a child engaging in more than 2 hours of screentime per day whereas a higher number of household routines decreased the odds.

Sleep Duration

At the bivariate level, there was no association between maternal or paternal report of happiness in their relationship and a child's sleep duration. None of the multivariate analyses yielded a significant association between maternal or paternal happiness and a child's sleep duration either (Table 8.8). However, in the final model (Model 4), several covariates were associated with the outcome. For example, Asian and mothers in the "Other" category reported that their child slept less than White mothers reported. Living in the South was associated with shorter sleep duration for children in comparison to living in the Northeast. Mothers who worked less than 35 hours per week or who were not employed in the formal labor force reported that their child slept longer than mothers who worked 35 hours or more per week in the formal labor force. Children receiving any care outside of the home slept less than children who only received care within the home. And higher levels of behavioral problems at 2 year of age were associated with shorter sleep duration at preschool.

Fruit Consumption

There was not a significant bivariate relationship between maternal happiness in relationship and a child's fruit consumption. However, there was a statistically significant

positive relationship between fathers' report of happiness in their relationship and a child's fruit intake (beta= 0.70, p-value< 0.05). None of the multivariate analyses yielded a statistically significant relationship between maternal happiness in relationship or paternal happiness in relationship and a child's fruit consumption (See Table 8.6). However, some covariates were associated with the outcome in the final model, which added parent-level covariates. For example, there was a positive association with the number of household routines and a child's fruit intake and as hypothesized, higher levels of maternal adverse conflict resolution style was associated with a decrease in fruit consumption. Interestingly, Asian mothers reported that their child ate fruit less often than White mothers but children whose fathers were Asian ate more fruit than children whose fathers were White. Surprisingly, higher levels of education among fathers was associated with a decrease in child's fruit consumption but there was no association between maternal education and the outcome. Mothers who were not employed in the formal labor force reported that their child ate more fruit than mothers who worked 35 hours or more per week in the formal labor force.

Odds of being Obese

At the bivariate level, mothers' happiness in relationship was associated with a child's decreased odds of being obese (OR= 0.76, p-value<0.05). Table 8.9 presents the results from the multivariate analyses. In Model 1, which adjusted for sociodemographic characteristics, suggested that maternal report of happiness in her relationship was associated with a child's lower odds of being obese (AOR=0.74, p-value>0.05). The relationship was not significant among fathers. In addition, Latino mothers had higher odds of having an obese child than White mothers and an increase in maternal age was associated with lower odds of a child being obese. Children residing in the Western region of the United States had lower odds of being obese than

children living in the Northeast. Maternal happiness and paternal happiness in their relationship was not associated a child's odds of being obese in Model 2 which included socioeconomic resources. Neither maternal nor paternal happiness in relationship was associated with the outcome in Model 3, which adjusted for child-level covariates, either. In Model 4, which included parent-level covariates, however, the relationship between maternal happiness and a child's odds of being obese reappeared (AOR= 0.70, p-value<0.05) suggesting it had been suppressed in Models 2 and 3. Also, in the final model (Model 4) being born low birthweight and living in the Southern and Western regions were associated with lower odds of being obese.

Parental Conflict

Family Meals

The bivariate results that higher levels conflict, for both mothers and fathers, was associated with a decrease in family meals (b= -0.06, p-value< 0.001 for mothers and b= -0.04, p-value< 0.001 for fathers). Fathers' report of conflict with their spouse/partner was not associated with the frequency of family meals in any of the multivariate models (Table 8.10). However, there was a statistically significant association between maternal conflict with her spouse/partner in each model (Table 8.10). In Model 1, after adjusting for sociodemographic covariates, the results showed that maternal report of higher levels of conflict were associated with less frequent family meals (b= -.06, p-value <0.01). In addition, Black mothers reported having family meals less often than White mothers. Similarly, in Model 2, which adjusted for socioeconomic resources, maternal report of higher levels of conflict was associated with less frequent family meals (b= -.05, p-value <0.01). Maternal education was also associated with family meals such that mothers with at least a high school degree or with a college degree or more, reported having family meals more often than mothers who had less than a high school

degree. Also, mothers who were not employed in the formal labor force reported having family meals more often than mothers who reported working 35 hours or more per week in the formal labor force. Black mothers reported having family meals less often than White mothers. The results in Model 3, which added child-level covariates, were identical to those in Model 2. Model 3, however, showed that children with more behavioral problems at 2 years of age were associated with less family meals at preschool. Lastly, Model 4 added parent-level covariates and the relationship between maternal conflict and family meals persisted (b= -0.03 p-value<0.001) showing that higher levels of maternal report of conflict decreased the frequency of a family meal. In addition, mothers who showed higher levels of depressive symptomology reported less frequent family meals whereas the frequency of family meals increased among households that had higher levels of household routines. The relationships between Black mothers, mothers who were not employed in the labor force and a child's behavioral problems at 2 years of age remained associated with the outcome in the final model.

Fast Food Consumption

At the bivariate level, there was a positive association between maternal conflict score and a child's level of fast food intake (b= 0.02, p-value<0.01). None of the multivariate models yielded a statistically significant relationship between paternal report of conflict and a child's fast food consumption (Table 8.11). Higher levels of conflict as reported by mothers, however, was associated with children eating fast food more frequently (b =0.02, p-value< 0.05) in Model 1, which added sociodemographic characteristics. Children living in the South and West ate fast food more often than children living in the Northeast. The relationship between maternal report of conflict and child's fast food consumption persisted in Model 2, which added socioeconomic resources. The results suggest that children whose fathers had a college degree or more ate fast

food less often than children whose fathers had less than a high school degree. Living in the South and West were still associated with more frequent fast food consumption among children. Model 3 added child-level covariates and maintained the significant association between maternal report of conflict and child's fast food consumption. The results showed that children who had never been breastfed ate fast food more often than children who had been breastfed. In Model 3, living in all three regions (South, Midwest and West) was associated with children eating more fast food than children living in the Northeast. Paternal education remained associated with the outcome as well. This result suggests that the initial relationship detected may have been spurious. The relationship between maternal conflict and a child's fast food consumption disappeared in Model 4 after adjusting for parent-level covariates. In regards to parent-level covariates, higher levels of adverse conflict resolution styles among mothers was associated with a child eating fast food more often. And, as expected, an increase in household routines was associated with lower levels of fast food consumption. Never being breastfed, living in South and West remained associated with the outcome as in previous models.

Soda Consumption

At the bivariate level, there was a positive association between mothers' conflict score and a child's soda intake (b= 0.03, p-value< 0.001). In Model 1, after adjusting for sociodemographic characteristics, fathers' report of conflict with the mother was associated with a decrease in child's soda intake, the opposite direction of what I expected. (See Table 8.12). However, this relationship was no longer significant in Models 2-4. Maternal report of conflict with the father, on the other hand, was associated with an increase in a child's soda intake thereby supporting my hypothesis that conflict between parents may lead children to engage in more obesity-promoting behaviors (b=0.04, p-value< 0.001). An increase in maternal age as

well as residing in the South were associated with higher levels of soda consumption for children in comparison to children with younger mothers and children living in the Northeast. In Model 2, which added socioeconomic resources, the relationship between paternal report of conflict and a child's soda intake disappeared but the relationship persisted for maternal report of conflict (b=0.03, p-value< 0.01). The results also showed that both maternal and paternal education were associated with the outcome such that mothers and fathers with at least a high school degree or at least a college degree reported that their child drank soda less often than mothers and fathers who had less than a high school degree. Mothers who were employed 35 hours or less in the formal labor force reported that their child drank soda less often than mothers who were employed 35 hours or more per week in the formal labor force. Living in the South remained associated with higher levels of soda intake among children in comparison to their peers who lived in the Northeast. Maternal report of conflict remained associated with a child's soda intake in Model 3 after adjusting for child-level covariates (b=0.03, p-value< 0.01). Among the child-level covariates, never being breastfed was associated with a child consuming more soda than a child who had been breastfed. Also, higher levels of behavioral problems at 2 years of age were associated with higher levels of soda intake at preschool. Living in the South, a father having at least a college degree, having a mother with at least a high school degree or a college degree and mothers working 35 hours or less per week all remained associated with the outcome as in previous models. The main effects between maternal report of conflict and child's soda intake persisted in Model 4 after including parent-level covariates ((b=0.02, p-value< 0.01). Greater levels of household routines were associated with lower levels of soda intake, consistent with what I had hypothesized. A child's behavioral problems at 2 years of age, never being breastfed, living in the South, a father having at least a college degree, having a mother with at least a high

school degree or a college degree and mothers working 35 hours or less per week all remained associated with the outcome as Model 3.

Vegetable Consumption

There were no significant bivariate relationships between maternal or paternal report of conflict and their child's vegetable intake. The multivariate analyses suggested that there was no association between fathers' report of conflict in the relationship and vegetable consumption in any of the models (See Table 8.13). Among mothers, there was no significant relationship in Model 1, which introduced sociodemographic characteristics. However, a relationship did emerge between maternal report of conflict and a child's vegetable intake (b= -0.06, p-value<0.05) in Model 2, which adjusted for socioeconomic resources. The results supported the hypothesis that higher levels of conflict would be associated with a decrease in a child's vegetable intake. Living in the Western and Midwestern regions was associated with higher vegetable intake compared to children living in the Northeast. Latina mothers also reported higher levels of vegetable intake for their children in comparison to White mothers. The relationship between maternal report of conflict persisted in Model 3, which added child-level covariates (b= -0.06, p-value<0.05). Moreover, the results suggested that children who had never been breastfed ate vegetables less often than children who had been breastfed. Living in the Western and Midwestern regions were still associated with greater vegetable intake for children in comparison to their peers living in the Northeast. The relationship between maternal report of conflict and child's vegetable intake disappeared in Model 4, suggesting that the relationship shown in previous models was perhaps spurious. Higher levels of household routines was associated with greater vegetable intake. Living in the Western and Midwestern regions were still associated with greater vegetable intake for children in comparison to their

peers living in the Northeast and never being breastfed was still associated with lower levels of vegetable consumption for children.

Fruit Consumption

At the bivariate level, there was a statistically significant negative relationship between conflict score for mothers (b=-0.08, p-value<0.05) and fathers (b= -0.08, p-value<0.05), and a child's fruit consumption. The multivariate models did not yield a statistically significant relationship between fathers' report of conflict with the mother and a child's fruit consumption (See Table 8.14). However, there was a negative association among mothers in Model 2 (when indicators of socioeconomic resources were added), but this relationship was no longer significant in the subsequent models. In the final model (Model 4) that introduced parent-level covariates, the results showed that fruit consumption increased as the number of household routines increased. Surprisingly, in the final model child's fruit consumption was lower among fathers with higher levels of education as opposed to fathers with less than a high school degree. Another unexpected finding was that Asian mothers reported that their child ate less fruit than White mothers but the opposite was true between Asian and White fathers.

Odds of Exceeding Guidelines for Daily Recommended Screentime

At the bivariate level, there was a positive association between maternal conflict and a child's odds of exceeding the daily guideline for screentime (OR=1.03, p-value< 0.05). None of the multivariate analyses yielded a statistically significant relationship between maternal or paternal report of conflict with one another and a child's odds of exceeding the daily recommended guideline of less than 2 hours of screentime (See Table 8.15). However, the final model showed that some covariates were associated with the outcome. Among parent-level covariates, an increase in maternal depressive symptomology increased the odds of a child

exceeding the guideline and a greater number of household routines decreased a child's odds of exceeding the guideline (p-value <0.01).

Sleep Duration

At the bivariate level, there was no association between maternal conflict and a child's sleep duration. Table 8.16 presents the results from the multivariate analyses . In Model 1, which adjusted for sociodemographics, an increase in maternal conflict score was associated with shorter sleep duration for the child

(b= -0.71, p-value< 0.05). In addition, Asian and mothers in the "Other" category reported that their child slept less than children whose mother was White. Children in the South also slept less than children living in the Northeast. The relationship between maternal conflict and a child's sleep duration disappeared in all subsequent models suggesting that this association was perhaps spurious. In the final model (Model 4), however several covariates were associated with the outcome. All of the aforementioned covariates from Model 1 remained associated with the outcome and in the same direction. In addition, mothers who either worked less than 35 hours per week in the labor force or were not employed in the formal labor force reported that their child slept longer than mothers who worked 35 hours or more per week in the formal labor force. In addition, children who were receiving any childcare outside the home slept shorter than children who only received care within the home. Higher levels of behavioral problems at 2 year of age were associated with shorter sleep duration whereas sleep duration increase for each additional household routine.

Odds of Being Obese

There was no bivariate association between maternal or paternal conflict and a child's odds of being obese. None of the multivariate analyses yielded a significant association between

maternal or paternal conflict score and a child's odds of being obese (Table 8.17). In the final model (Model 4), however, some covariates remained associated with the outcome. For example, living in the West and South were associated with lower odds of being obese in comparison to living in the Northeast. Moreover, being born low birthweight decreased the odds of being obese.

Parenting Stress

Family Meals

At the bivariate level, maternal parenting stress is associated with a decrease in family meals (b=-0.04, p-value<0.01). There was no bivariate relationship among fathers. The multivariate results assessing the relationship between parenting stress and family meals yielded surprising differences between mothers and fathers (Table 8.18). In Model 1, which accounted for sociodemographic characteristics, there was no association between fathers' parenting stress and the frequency of family meals whereas the frequency of family meals decreased as levels of maternal parenting stress increased (b= -0.04, p-value<0.001). Also, Black mothers reported having family meals less often than White mothers. After adjusting for socioeconomic resources in Model 2, the relationship between maternal parenting stress and frequency of family meals persisted (b= -0.04, p-value <0.05). Moreover, the results showed that mothers who worked less than 35 hours per week in the formal labor force and mothers who were not employed at all in the formal labor force reported having family meals more often than mothers who were employed 35 hours or more per week. Also, mothers with a college degree or more education had family meals more often than mothers who had less than a high school degree. Black mothers still reported having less family meals than White mothers. The significant associations found in Model 2 were also present in Model 3, which added child-level covariates. Model 3

also showed that higher levels of behavioral problems at 2 years of age were associated with less family meals at preschool. In Model 4, parent-level covariates were added to the model and the relationship between maternal parenting stress and family meals disappeared. However, a significant association emerged for fathers' parenting stress but in the opposite direction of what I had expected; higher levels of parenting stress among fathers was associated with a child having more family meals per week (b=0.03,
p-value< 0.05). Having a mother who was not employed in the formal labor force, having a Black mother and child's behavioral problems at 2 year of age were all still associated with the outcome as in previous models. In addition, higher levels of adverse conflict resolution styles, for both mothers and fathers, and mothers who exhibited higher levels of depressive symptomology were all associated with a child having less frequent family meals per week. On the other hand, having more household routines was associated with having more family meals per week.

Fast Food Consumption

At the bivariate level, there was a positive association between maternal parenting stress and a child's level of fast food consumption (b=0.02, p-value<0.05)but no relationship among fathers. The multivariate results assessing the relationship between parenting stress and child's fast food consumption are presented in Table 8.19. In Model 1, which adjusted for sociodemographics, higher levels of parenting stress for mothers were associated with greater fast food intake for children (b=0.03, p-value<0.01) but the relationship was in the opposite direction for fathers' report of parenting stress (b= -0.02, p-value< 0.05). The results suggested that children living in the South and West ate more fast food than their peers in the Northeast and that girls ate fast food less often than boys. The same relationship persisted between maternal

and paternal parenting stress and a child's fast food intake in Model 3, after adjusting for socioeconomic resources and in Model 4, which took child-level covariates into account. Moreover, the results suggest that children who have a father with a college degree or higher education eat less fast food than a child with a father who has less than a high school degree. Children who had never been breastfeed and were living in either the South, Midwest and West ate fast food more often than their peers who had been breastfed and who lived in the Northeast. The relationship between maternal and paternal parenting stress and a child's fast food intake, however, disappeared in Model 4 after parent-level covariates were added to the model. Model 4 showed that higher levels of adverse conflict resolution style among father was associated with a decrease in fast food consumption, which was opposite of what I had expected. The relationship between maternal adverse conflict resolution style and a child's fast food intake, however, supported the hypothesis that less optimal conflict resolution styles between parents is associated with more obesity-promoting behaviors for their children. On the other hand, children who were exposed to more household routines ate less fast food than their peers who had fewer routines. The relationship between breastfeeding and the regional differences found in previous models were also present in Model 4. A new finding emerged among sociodemographics in Model 4 showing that Asian fathers reported that their child ate fast food less often than White fathers.

Soda Consumption

Bivariate analyses yielded an unexpected negative relationship between paternal parenting stress and a child's soda intake ($b=-0.03$, p-value<0.05). There was no bivariate relationship between maternal parenting stress and a child's soda consumption. Similarly to multivariate results assessing the relationship between parenting stress and a child's fast food intake, the relationship between parenting stress and a child's soda intake differed between

mothers and fathers (Table 8.20). In Model 1 (that adjusted for sociodemographics), Model 2 (that adjusted for socioeconomic resources) and in Model 3 (that included child-level covariates), a higher level of parenting stress among mothers was associated with a child consuming more soda ($b=0.02$, p-value<0.01 in all three models) whereas higher levels of parenting stress among fathers was associated with a decrease in the child's soda intake ($b= -0.03$, p-value<0.01 in Model 1 and $b= -0.02$, p-value< 0.05 in Models 2 and 3 for fathers). The results show that children in the South drank more soda than children residing in the Northeast. Moreover, mothers with at least a high school degree and mothers with a college degree or more education reported that their children drank soda less often than mothers who had less than a high school degree. Among fathers, having a college degree or more was associated with their child drinking less soda than fathers who had less than a high school degree in Models 1-3. Mothers who were employed 35 hours or less per week reported that their child drank soda less often than mothers who were employed 35 hours or more per week. Children who had never been breastfed drank more soda than their peers who had been breasted and children with higher levels of behavioral problems at 2 years of age drank more soda than children with lower levels of behavioral problems at 2 year of age. The relationship between maternal and paternal parenting stress and a child's soda intake disappeared in Model 4 once parent-level covariates were taken into account. A higher number of household routines was associated with lower soda intake for children and all other covariates that were significant in previous models remained significant: living in the South, maternal education, maternal employment, ever being breastfed and behavioral problems at 2 years of age.

Vegetable Consumption

There was not a significant bivariate relationship between parenting stress and a child's vegetable intake when assessing data from mothers or from fathers. The multivariate results for the relationship between parenting stress and a child's vegetable consumption were identical to that in the model assessing parental happiness in their relationship. Namely, none of the multivariate analyses yielded a statistically significant relationship between maternal or paternal parenting stress and vegetable consumption (See Table 8.21). However, some covariates remained significant in the final model that adjusted for parent-level covariates. For example, children in the Midwest and West ate more vegetables than children living in the Northeast. Children who had never been breastfed ate fewer vegetables than children who had been breastfed. Lastly, as hypothesized, there was a positive association with the number of household routines and a child's vegetables consumption.

Fruit Consumption

There was a negative bivariate relationship between mothers' parenting stress and a child's fruit consumption (b= -0.16, p-value <0.001) but no relationship among fathers. Maternal report of parenting stress was associated with a decrease in child's fruit consumption in all multivariate models (Table 8.22). In Model 1, after adjusting for sociodemographics, the findings suggested that child fruit consumption decreases as a mother's report of parenting stress increases (b= -0.18, p-value< 0.001). Latino mothers reported that their child ate more fruit than White mothers whereas Asian mothers reported the opposite in comparison to White mothers. In Model 2, the coefficient for the relationship between maternal parenting stress and a child's fruit intake increased (b= -0.21, p-value<0.001) and remained statistically significant. In this model, mothers who were not employed in the labor force reported that their child ate fruit more often

than mothers who were employed 35 hours or more per week in the labor force. Parental level of education, for mothers and fathers, was also associated with the outcome but the direction of the relationship differed between mothers and fathers. Whereas mothers with a college degree or more reported that their child ate fruit more often than mothers who had less than a high school degree, fathers with higher levels of education reported that their child ate less fruit than fathers who had less than a high school education. Having an Asian mother was still associated with lower levels of fruit consumption for children. In Model 3, the findings were similar to what was found in Model 2, even after taking child-level covariates into account. The one difference between the two models was that maternal education was no longer associated with the outcome but all other covariates that were significant in Model 2 remained significant in Model 3. In addition, children whose mothers who reported that they never breastfed their child consumed less fruit than children who had been breastfed. The relationship between maternal parenting stress and child's fruit intake remains the same in Model 4, which introduced parent-level covariates. However, a significant association emerged among fathers, for the first time and in the opposite direction of what I had hypothesized. Namely, the results in Model 4, suggested that an increase in fathers' parenting stress was associated with a child consuming more fruit ($b=0.11$, p-value< 0.05). Another new finding in Model 4 was that Asian fathers reported that their child ate more fruit than children whose fathers were White. Covariates that were significant in the previous model remained significant in Model 4 (never being breasted, maternal employment and father's level of education). Model 4 also showed that children who were exposed to more household routines also consumed more fruit per week.

Odds of Exceeding Guidelines for Daily Recommended Screentime

Bivariate analyses yielded unexpected decreased odds of exceeding the guideline for screentime as fathers' report of parenting stress increased (OR=0.97, p-value<0.05). There was, however, no bivariate relationship between maternal parenting stress and the outcome. None of the multivariate analyses yielded a statistically significant relationship between maternal or paternal report of conflict with one another and a child's odds of exceeding the daily recommended guideline of less than 2 hours of screentime (See Table 8.23). However, a few covariates were associated with the outcome in the final model after parent-level covariates were taken into account. For example, an increase in father's age was associated with higher odds of children exceeding the daily guideline for screentime. Income was statistically associated with the outcome (p-value< 0.05). However, the adjusted odds ratio of 1.00 suggests that there was no practical difference in the outcome by household income. The association between parental level of education and the outcome differed between mothers and fathers. For example, there was lower odds of children exceeding the daily guideline for children whose mother had a college degree or more education, however, children whose father had at least a high school degree had higher odds of engaging in screentime for more than 2 hours per day. Having a mother who was not employed in the formal labor force was associated with higher odds of exceeding the guideline in comparison to having a mother who worked 35 hours or more per week in the formal labor force. Children who received any care outside the home had lower odds of exceeding the guideline in comparison to children who only received care within the home. Lastly, three out of the four parent-level covariates were associated with the outcome. For example, higher levels of maternal adverse conflict resolution style and maternal depressive

symptomology were both associated with increased odds of exceeding the guideline (p-value <0.05) whereas more household routines decreased the odds (p-value <0.01).

Sleep Duration

Bivariate analyses showed an unexpected positive association between paternal parenting stress and a child's sleep duration (b=0.96, p-value<0.05). There was, however, no bivariate relationship between maternal parenting stress and the child's sleep duration. Multivariate analyses did not yield a statistically significant relationship between maternal or paternal parenting stress and a child's sleep duration (Table 8.24). However, several covariates were associated with the outcome in the final model (Model 4). Asian and mothers in the "Other" category reported that their child slept less than children whose mother was White. Children in the South also slept less than children living in the Northeast. Mothers who either worked less than 35 hours per week in the labor force or were not employed in the formal labor force reported that their child slept longer than mothers who worked 35 hours or more per week in the formal labor force. In addition, children who were receiving any childcare outside the home slept shorter than children who only received care within the home. Higher levels of behavioral problems at 2 year of age were associated with shorter sleep duration whereas sleep duration increased for each additional household routine.

Odds of Being Obese

There were no significant bivariate results between maternal or paternal parenting stress and a child's odds of being obese. Further, none of the multivariate models reached statistical significance for the main relationship of interest (Table 8.25). However, the final model (Model 4) showed that covariates were associated with the outcome. For example, being born low birthweight was associated with lower odds of being obese. Children residing in the South and

West had lower odds of being obese in comparison to children living in the Northeast. Interestingly, unlike several of the other outcomes tested in this aim, the number of household routines was not associated with the outcome.

Mediation Analysis: Results

As described above in the overview of the aim, I also tested whether a preschooler's emotional regulation skills mediated the relationship between each stressor (happiness in relationship, parental conflict and parenting stress) and each of the 8 obesity risk factors. To do this, each of the 3 criterion for mediation had to be met: 1) a statistically significant relationship between the independent variable and the dependent variable, 2) a statistically significant relationship the mediator (emotional regulation skills) and the independent variable and 3) a statistically significant relationship the mediator (emotional regulation skills) and the dependent variable. These three criterion were only met twice 1) testing the relationship between maternal conflict score and the frequency of family meals and 2) testing the relationship between maternal happiness in relationship and a child's odds of being obese. A Sobel test was performed to formally test mediation when frequency of family meals was the outcome. Mediation was tested using the KHB-method when the child's odds of being obese was the dependent variable because this method allows for formal testing of mediation with a binary outcome.

Evaluating Emotional Regulation Skills as a Mediator between Maternal Conflict with Partner/Souse and the Frequency of Family Meals

The findings from the Sobel test support the hypothesized mediating role of a child's emotional regulation skills in the relationship between maternal conflict and the frequency of family meals. Both the indirect (beta= -0.002, p-value<0.05) and direct effects (beta= -0.032,

p-value<0.01) were statistically significant indicating partial mediation. Moreover, the results suggested that 6% of the total effect of maternal conflict with her spouse/partner on the frequency of family meals was mediated by the child's emotional regulation skills.

Evaluation Emotional Regulation Skills as a Mediator between Maternal Happiness in her Relationship and the Child's Odds of Being Obese

The results of the KHB model did not support the hypothesized mediating role of emotional regulation skills in the relationship between maternal happiness in her relationship and a child's odds of being obese. In other words, none of the results were statistically significant (total effect b= -0.08, p-value= 0.50, direct effect b= -0.09, p-value= 0.46, indirect effect b= -.01, p-value=0.82).

Autoregressive Path Analysis

As discussed in more detail in the Analytic Plan, I extended my cross-sectional analysis of the relationship of parental stressors on a preschooler's odds of being obese by including exposures to parental stress from earlier waves (9 months of age and 2 years of age). I hypothesized that indicators of parental stressors across waves would be associated with each other and that each would be associated with a preschooler's odds of being obese. I ran two autoregressive path analyses: 1) one that tested the association between maternal and paternal happiness in relationship at all three waves and the child's odds of being obese at preschool and 2) a second that tested the association between maternal and paternal conflict at all three waves and the child's odds of being obese at preschool. Both of the models adjusted for the following covariates: maternal/paternal race, maternal/paternal level of education at 9 months, maternal/paternal employment at 9 months, household income at 9 months, child's behavioral problems at 9 months of age, maternal perception of difficulty raising child at 9 months of age.

The results of the autoregressive path analysis supported my hypothesis that the autoregressive effects between the indicators of parental stressors over time would be associated with each other. For example, maternal conflict score at 9 months was associated with maternal conflict score at 2 years of age

(p-value< 0.001) and maternal conflict score at 2 years was associated with maternal conflict score at preschool (p-value< 0.001). The same findings were found for paternal conflict score (both p-values<0.001). However, none of the paths testing the relationship between conflict score (among mothers and fathers) was associated with a child's odds of being obese at preschool (See Figure 8.1). I assessed the AIC and BIC between the specified model and the base model (AIC for specified model: 46,999.77, BIC for specified model: 47,168.73; AIC for base model: 113,335.4, BIC for base model: 113,538.2). Given that the AIC and BIC are lower for the specified model I conclude that this is the better model fit.

The findings were identical to what was found when I assessed the relationship of happiness in relationship over time and the child's odds of being obese (not shown). In other words, the autoregressive effects between each stressor over time were statistically significant but none of the paths between the stressor and the odds of being obese at preschool were significant. The AIC for specified model was 9,102.802 and the BIC for specified model was 9,249.232. Both of these were lower than the values yielded for the base model (AIC= 42,272.54 and BIC= 43, 336.97), which indicates that the specified model was a better model fit than the base model.

Figure 8.1 Results for Autoregressive Path Analysis of Parental Conflict at all Three Waves of Data on a Child's Odds of Being Obese at Preschool (N=2,050)

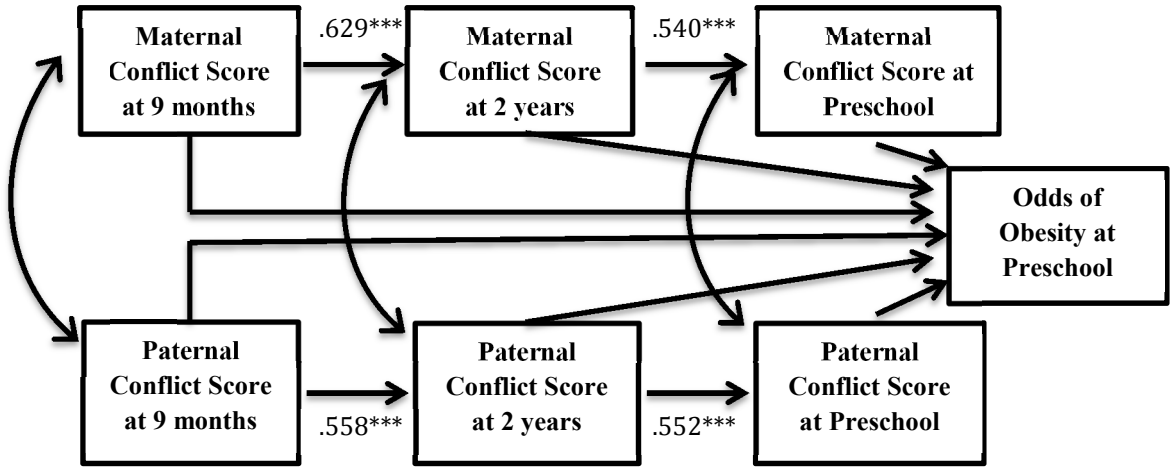


Table 8.1 Correlations Between Parental Stressors and Child's Engagement in Obesity Risk Factors, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Maternal happiness	1.00													
2. Paternal happiness	0.43 ***	1.00												
3. Maternal conflict	-0.44 ***	0.32 ***	1.00											
4. Paternal conflict	-0.30 ***	0.43 ***	0.44 ***	1.00										
5. Maternal parenting stress	-0.21 ***	-0.16 ***	0.35 ***	0.17 ***	1.00									
6. Paternal parenting stress	-0.10 ***	-0.22 ***	0.174 ***	0.36 ***	0.27 ***	1.00								
7. Obese	-0.02	-0.01	0.01	-0.01	-0.01	-0.03	1.00							
8. Family meals	0.07 ***	0.05 ***	-0.12 ***	-0.08 ***	-0.04 ***	0.01	-0.01**	1.00						
9. Sleep duration	0.06 ***	0.03**	-0.07 ***	-0.03**	0.00	0.02	-0.05 ***	0.03**	1.00					
10. Screentime	-0.02	0.01	0.05 ***	0.01	-0.00**	-0.03	0.06 ***	-0.08 ***	0.05*	1.00				
11. Fruit	0.01*	0.01	-0.03*	-0.04**	-0.04**	0.01	0.02	0.09 ***	0.03*	-0.04**	1.00			
12. Vegetable	0.02	0.01	-0.02	-0.02	-0.02*	0.01	0.01	0.06 ***	-0.02	-0.07**	0.41 ***	1.00		
13. Soda	-0.07*	0.01	0.07 ***	0.01	0.02 ***	-0.05**	0.04 ***	-0.07 ***	-0.04 ***	0.15 ***	0.04 ***	0.03 ***	1.00	
14. Fast food	-0.03	-0.04	0.07 ***	0.02*	0.04	-0.01 ***	0.03**	-0.08 ***	-0.01*	0.10 ***	0.02*	0.01*	0.19 ***	1.00

Note: *p<0.05, ** p<0.01, *** p<0.001.

Table 8.2 Regression Models of Frequency of Family Meals on Parental Happiness in Relationship, hector!
Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	0.22*	(0.09)	0.15	(0.08)	0.13	(0.09)	-0.09	(0.10)
Paternal Happiness	0.14	(0.09)	0.14	(0.09)	0.14	(0.09)	-0.04	(0.11)
Sociodemographics								
Maternal Race								
Black	-0.88**	(0.27)	-0.87**	(0.26)	-0.81**	(0.27)	-0.78**	(0.26)
Latino	-0.08	(0.18)	-0.05	(0.17)	-0.05	(0.17)	-0.07	(0.16)
Asian	0.00	(0.22)	-0.02	(0.23)	0.02	(0.24)	0.11	(0.22)
Other	-0.17	(0.31)	-0.12	(0.30)	-0.09	(0.30)	-0.01	(0.28)
Paternal Race								
Black	0.18	(0.24)	0.28	(0.25)	0.26	(0.24)	0.21	(0.24)
Latino	-0.13	(0.18)	-0.03	(0.18)	-0.04	(0.18)	-0.00	(0.17)
Asian	-0.09	(0.22)	-0.05	(0.23)	-0.06	(0.23)	0.04	(0.23)
Other	0.30	(0.21)	0.32	(0.20)	0.33	(0.20)	0.36	(0.21)
Parental Age								
Maternal Age	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	0.02	(0.07)	0.01	(0.07)	0.00	(0.07)	0.01	(0.07)
Region								
Midwest	-0.07	(0.14)	-0.05	(0.14)	-0.07	(0.14)	-0.07	(0.14)
South	-0.13	(0.14)	-0.14	(0.14)	-0.14	(0.14)	-0.16	(0.14)
West	0.03	(0.13)	0.01	(0.13)	-0.02	(0.13)	-0.03	(0.13)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			0.30*	(0.15)	0.31*	(0.15)	0.21	(0.14)
College or more			0.36*	(0.17)	0.35*	(0.18)	0.23	(0.16)
Paternal Education								
High School Degree			0.08	(0.15)	0.09	(0.15)	0.03	(0.15)
College or more			0.15	(0.15)	0.15	(0.15)	0.07	(0.15)
Maternal Employment								
Employed <35 hours			0.17	(0.10)	0.16	(0.10)	0.13	(0.10)
Not in Formal Labor Force			0.53***	(0.08)	0.50***	(0.08)	0.49***	(0.08)
Paternal Employment								
Employed <35 hours			-0.10	(0.23)	-0.10	(0.23)	-0.12	(0.22)
Not in Formal Labor Force			0.01	(0.18)	0.00	(0.18)	0.06	(0.18)

Child Characteristics								
Any Outside Care					-0.13	(0.09)	-0.15	(0.09)
Never Breastfed					-0.07	(0.08)	-0.01	(0.07)
Low Birthweight					-0.08	(0.11)	-0.11	(0.11)
Behavioral Problems 2 yrs.					-0.03**	(0.01)	-0.02*	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.04*	(0.02)
Adverse Conflict Resolution (Maternal)							-0.06***	(0.02)
Maternal Depressive Symptoms							-0.02**	(0.01)
Routines							0.20***	(0.05)
Constant	5.51***	(0.18)	4.91***	(0.25)	5.39***	(0.27)	5.88***	(0.37)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.3 Regression Models of Preschoolers' Fast Food Consumption on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	0.02	(0.06)	0.02	(0.06)	0.02	(0.06)	0.12*	(0.06)
Paternal Happiness	-0.06	(0.05)	-0.06	(0.05)	-0.06	(0.05)	-0.06	(0.06)
Sociodemographics								
Maternal Race								
Black	0.20	(0.14)	0.20	(0.13)	0.16	(0.13)	0.16	(0.12)
Latino	0.13	(0.07)	0.10	(0.08)	0.13	(0.08)	0.12	(0.07)
Asian	0.12	(0.12)	0.11	(0.11)	0.12	(0.11)	0.08	(0.11)
Other	0.08	(0.10)	0.07	(0.10)	0.06	(0.10)	0.04	(0.09)
Paternal Race								
Black	-0.05	(0.12)	-0.06	(0.13)	-0.05	(0.12)	-0.04	(0.11)
Latino	0.07	(0.07)	0.04	(0.07)	0.05	(0.07)	0.00	(0.08)
Asian	-0.22*	(0.11)	-0.20	(0.11)	-0.21	(0.11)	-0.24*	(0.11)
Other	-0.06	(0.12)	-0.08	(0.11)	-0.09	(0.10)	-0.10	(0.10)
Parental Age								
Maternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	-0.09	(0.05)	-0.08	(0.05)	-0.08	(0.05)	-0.08	(0.05)
Region								
Midwest	0.19	(0.10)	0.20	(0.10)	0.21*	(0.10)	0.20	(0.10)
South	0.44***	(0.10)	0.44***	(0.10)	0.43***	(0.10)	0.41***	(0.10)
West	0.23*	(0.10)	0.22*	(0.10)	0.26*	(0.10)	0.23*	(0.10)
Socioeconomic Resources								
Income (median-centered)								
Maternal Education								
High School Degree			-0.12	(0.08)	-0.09	(0.08)	-0.03	(0.08)
College or more			-0.07	(0.12)	-0.01	(0.11)	0.04	(0.10)
Paternal Education								
High School Degree			-0.15*	(0.07)	-0.15*	(0.07)	-0.10	(0.07)
College or more			-0.22**	(0.08)	-0.21*	(0.08)	-0.14	(0.07)
Maternal Employment								
Employed <35 hours			0.06	(0.08)	0.07	(0.08)	0.08	(0.08)
Not in Formal Labor Force			0.00	(0.05)	0.00	(0.06)	0.01	(0.06)
Paternal Employment								
Employed <35 hours			0.11	(0.22)	0.08	(0.21)	0.07	(0.18)
Not in Formal Labor Force			0.17	(0.13)	0.15	(0.12)	0.07	(0.10)

Child Characteristics								
Any Outside Care					-0.02	(0.06)	-0.02	(0.06)
Never Breastfed					0.20**	(0.07)	0.16*	(0.07)
Low Birthweight					0.05	(0.06)	0.08	(0.06)
Behavioral Problems 2 yrs.					0.01	(0.01)	0.00	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03**	(0.01)
Adverse Conflict Resolution (Maternal)							0.05***	(0.01)
Maternal Depressive Symptoms							0.00	(0.00)
Routines							-0.13***	(0.03)
Constant	0.62***	(0.13)	0.82***	(0.16)	0.45*	(0.21)	0.70***	(0.25)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.4 Regression Models of Preschoolers' Soda Consumption on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	-0.11	(0.08)	-0.04	(0.07)	-0.02	(0.07)	0.08	(0.07)
Paternal Happiness	0.01	(0.06)	-0.02	(0.07)	-0.03	(0.07)	-0.05	(0.07)
Sociodemographics								
Maternal Race								
Black	0.38	(0.20)	0.31	(0.24)	0.24	(0.21)	0.26	(0.20)
Latino	0.12	(0.11)	-0.02	(0.10)	0.00	(0.10)	0.00	(0.10)
Asian	0.09	(0.13)	0.09	(0.12)	0.09	(0.11)	0.06	(0.11)
Other	0.10	(0.13)	0.01	(0.12)	-0.01	(0.12)	-0.03	(0.11)
Paternal Race								
Black	-0.15	(0.17)	-0.15	(0.21)	-0.12	(0.19)	-0.15	(0.18)
Latino	0.11	(0.12)	-0.05	(0.13)	-0.04	(0.12)	-0.08	(0.12)
Asian	-0.24	(0.16)	-0.16	(0.14)	-0.15	(0.14)	-0.19	(0.14)
Other	0.17	(0.15)	0.08	(0.14)	0.06	(0.13)	0.03	(0.12)
Parental Age								
Maternal Age	-0.02*	(0.01)	0.00	(0.01)	0.00	(0.01)	0.00	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.01	(0.01)
Female Child	-0.03	(0.06)	0.00	(0.06)	0.01	(0.06)	0.02	(0.06)
Region								
Midwest	0.13	(0.11)	0.14	(0.11)	0.16	(0.10)	0.14	(0.11)
South	0.42***	(0.09)	0.38***	(0.08)	0.37***	(0.08)	0.36***	(0.09)
West	0.06	(0.11)	0.01	(0.10)	0.06	(0.11)	0.03	(0.11)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			-0.27**	(0.09)	-0.25**	(0.09)	-0.21*	(0.09)
College or more			-0.50***	(0.10)	-0.45***	(0.11)	-0.40***	(0.11)
Paternal Education								
High School Degree			-0.18*	(0.08)	-0.17*	(0.08)	-0.15	(0.08)
College or more			-0.53***	(0.11)	-0.48***	(0.11)	-0.43***	(0.11)
Maternal Employment								
Employed <35 hours			-0.23*	(0.09)	-0.21*	(0.09)	-0.21*	(0.09)
Not in Formal Labor Force			-0.06	(0.07)	-0.06	(0.07)	-0.06	(0.07)
Paternal Employment								
Employed <35 hours			0.09	(0.12)	0.06	(0.12)	0.09	(0.12)
Not in Formal Labor Force			0.12	(0.08)	0.11	(0.09)	0.05	(0.09)

Child Characteristics								
Any Outside Care					-0.02	(0.07)	-0.02	(0.07)
Never Breastfed					0.26***	(0.06)	0.24***	(0.06)
Low Birthweight					0.06	(0.07)	0.06	(0.07)
Behavioral Problems 2 yrs.					0.02***	(0.01)	0.02**	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03*	(0.01)
Adverse Conflict Resolution (Maternal)							0.04*	(0.01)
Maternal Depressive Symptoms							0.01*	(0.01)
Routines							-0.10***	(0.03)
Constant	1.24***	(0.14)	1.87***	(0.15)	1.23***	(0.19)	1.31***	(0.27)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.5 Regression Models of Preschoolers' Vegetable Consumption on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	0.19	(0.36)	0.27	(0.37)	0.32	(0.37)	-0.03	(0.39)
Paternal Happiness	0.07	(0.37)	0.05	(0.37)	0.05	(0.36)	-0.11	(0.38)
Sociodemographics								
Maternal Race								
Black	0.27	(1.07)	0.29	(1.07)	0.32	(1.05)	0.30	(1.00)
Latino	1.37*	(0.59)	1.26*	(0.58)	1.08	(0.59)	1.12	(0.58)
Asian	0.10	(0.58)	0.09	(0.58)	-0.03	(0.59)	0.16	(0.57)
Other	0.22	(0.91)	0.14	(0.91)	0.15	(0.91)	0.20	(0.88)
Paternal Race								
Black	0.56	(0.98)	0.42	(0.97)	0.37	(0.95)	0.29	(0.91)
Latino	-0.73	(0.59)	-0.85	(0.60)	-0.91	(0.60)	-0.78	(0.58)
Asian	0.22	(0.56)	0.24	(0.57)	0.31	(0.58)	0.51	(0.59)
Other	0.19	(1.08)	0.14	(1.08)	0.13	(1.05)	0.21	(1.04)
Parental Age								
Maternal Age	-0.07*	(0.03)	-0.06	(0.03)	-0.05	(0.03)	-0.05	(0.03)
Paternal Age	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)
Female Child	0.25	(0.26)	0.24	(0.25)	0.21	(0.26)	0.21	(0.25)
Region								
Midwest	0.82*	(0.32)	0.77*	(0.32)	0.72*	(0.33)	0.75*	(0.33)
South	0.73*	(0.35)	0.69	(0.36)	0.66	(0.36)	0.65	(0.36)
West	1.04**	(0.34)	1.01**	(0.34)	0.84*	(0.34)	0.86*	(0.34)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.01	(0.00)	-0.01	(0.00)
Maternal Education								
High School Degree			0.21	(0.49)	0.01	(0.49)	-0.28	(0.52)
College or more			0.33	(0.61)	-0.01	(0.63)	-0.35	(0.66)
Paternal Education								
High School Degree			-0.47	(0.51)	-0.51	(0.51)	-0.65	(0.50)
College or more			-0.47	(0.58)	-0.61	(0.58)	-0.86	(0.58)
Maternal Employment								
Employed <35 hours			0.00	(0.36)	-0.09	(0.37)	-0.17	(0.37)
Not in Formal Labor Force			-0.04	(0.29)	-0.08	(0.30)	-0.16	(0.30)
Paternal Employment								
Employed <35 hours			0.18	(0.73)	0.23	(0.72)	0.25	(0.71)
Not in Formal Labor Force			0.34	(0.61)	0.41	(0.60)	0.60	(0.61)

Child Characteristics								
Any Outside Care					-0.02	(0.39)	-0.02	(0.38)
Never Breastfed					-1.21***	(0.30)	-1.06***	(0.30)
Low Birthweight					0.41	(0.27)	0.34	(0.26)
Behavioral Problems 2 yrs.					0.02	(0.03)	0.03	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.00	(0.06)
Adverse Conflict Resolution (Maternal)							-0.14	(0.08)
Maternal Depressive Symptoms							-0.01	(0.02)
Routines							0.73***	(0.15)
Constant	7.25***	(0.55)	7.52***	(0.93)	9.31***	(1.28)	8.04***	(1.40)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.6 Regression Models of Preschoolers' Fruit Consumption on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	0.26	(0.41)	0.18	(0.41)	0.16	(0.41)	-0.22	(0.40)
Paternal Happiness	0.62	(0.41)	0.56	(0.40)	0.57	(0.40)	0.24	(0.42)
Sociodemographics								
Maternal Race								
Black	0.39	(1.38)	0.54	(1.38)	0.73	(1.38)	0.74	(1.33)
Latino	1.43*	(0.68)	1.34	(0.69)	1.24	(0.68)	1.31	(0.68)
Asian	-2.18**	(0.64)	-2.39***	(0.66)	-2.35***	(0.67)	-2.11**	(0.65)
Other	0.55	(0.90)	0.63	(0.86)	0.68	(0.85)	0.72	(0.82)
Paternal Race								
Black	0.97	(1.24)	1.10	(1.25)	1.00	(1.27)	0.89	(1.21)
Latino	0.52	(0.66)	0.51	(0.68)	0.48	(0.69)	0.60	(0.67)
Asian	0.98	(0.58)	1.01	(0.59)	1.01	(0.58)	1.26*	(0.58)
Other	-0.04	(1.13)	-0.02	(1.10)	0.01	(1.07)	0.14	(1.04)
Parental Age								
Maternal Age	0.03	(0.04)	0.00	(0.04)	0.00	(0.04)	0.01	(0.04)
Paternal Age	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)
Female Child	0.26	(0.28)	0.26	(0.27)	0.21	(0.27)	0.20	(0.26)
Region								
Midwest	0.00	(0.56)	0.09	(0.58)	0.04	(0.57)	0.05	(0.57)
South	-0.82	(0.54)	-0.81	(0.57)	-0.80	(0.57)	-0.84	(0.55)
West	0.46	(0.54)	0.52	(0.57)	0.39	(0.56)	0.36	(0.56)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			0.12	(0.63)	-0.01	(0.64)	-0.28	(0.65)
College or more			1.42*	(0.69)	1.15	(0.69)	0.84	(0.71)
Paternal Education								
High School Degree			-1.75**	(0.62)	-1.76**	(0.63)	-1.90**	(0.64)
College or more			-1.81**	(0.67)	-1.87**	(0.69)	-2.13**	(0.70)
Maternal Employment								
Employed <35 hours			0.63*	(0.31)	0.56	(0.31)	0.47	(0.31)
Not in Formal Labor Force			0.88**	(0.32)	0.85*	(0.34)	0.74*	(0.34)
Paternal Employment								
Employed <35 hours			-0.27	(0.73)	-0.26	(0.73)	-0.22	(0.70)
Not in Formal Labor Force			0.91	(0.71)	0.94	(0.72)	1.11	(0.73)

Child Characteristics								
Any Outside Care					0.03	(0.41)	0.02	(0.40)
Never Breastfed					-0.85*	(0.36)	-0.70	(0.36)
Low Birthweight					0.05	(0.33)	-0.02	(0.33)
Behavioral Problems 2 yrs.					-0.07*	(0.03)	-0.06	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.07	(0.07)
Adverse Conflict Resolution (Maternal)							-0.18*	(0.07)
Maternal Depressive Symptoms							0.03	(0.03)
Routines							0.77***	(0.15)
Constant	8.96***	(0.68)	9.46***	(1.14)	11.43***	(1.38)	10.18***	(1.56)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.7 Regression Models of Preschoolers' Odds of Exceeding Daily Recommended Screentime on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Maternal Happiness	0.84	(0.65-1.06)	0.84	(0.65-1.07)	0.84	(0.65-1.07)	0.98	(0.75-1.28)
Paternal Happiness	1.05	(0.87-1.26)	1.06	(0.87-1.28)	1.06	(0.87-1.28)	1.14	(0.90-1.42)
Sociodemographics								
Maternal Race								
Black	1.20	(0.56-2.53)	1.05	(0.47-2.29)	0.99	(0.44-2.19)	0.99	(0.44-2.19)
Latino	1.41*	(1.01-1.97)	1.17	(0.82-1.67)	1.23	(0.86-1.75)	1.26	(087-1.80)
Asian	0.97	(0.66-1.42)	1.09	(0.72-1.65)	1.10	(0.71-1.68)	1.03	(0.67-1.57)
Other	1.20	(0.80-1.80)	1.11	(0.75-1.65)	1.14	(0.77-1.68)	1.09	(0.72-1.62)
Paternal Race								
Black	1.62	(0.80-3.28)	1.66	(0.80-3.41)	1.73	(0.82-3.59)	1.79	(0.87-3.64)
Latino	1.53*	(1.09-2.11)	1.34	(0.95-1.87)	1.33	(0.93-1.87)	1.27	(0.90-1.78)
Asian	0.81	(0.54-1.20)	0.97	(0.62-1.50)	0.96	(0.60-1.54)	0.90	(0.55-1.44)
Other	1.81	(0.95-3.42)	1.54	(0.84-2.78)	1.50	(0.82-2.72)	1.47	(0.80-2.69)
Parental Age								
Maternal Age	0.95***	(0.92-0.96)	0.98	(0.95-1.00)	0.98	(0.95-1.00)	0.98	(0.95-1.00)
Paternal Age	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)
Female Child	1.04	(0.87-1.23)	1.08	(0.90-1.27)	1.08	(0.90-1.28)	1.07	(0.90-1.27)
Region								
Midwest	1.09	(0.79-1.50)	1.05	(0.76-1.44)	1.05	(0.76-1.43)	1.04	(0.75-1.42)
South	1.07	(0.77-1.46)	0.97	(0.70-1.35)	0.94	(0.68-1.30)	0.95	(0.68-1.31)
West	1.13	(0.80-1.57)	0.97	(0.69-1.43)	0.99	(0.70-1.37)	0.98	(0.69-1.38)
Socioeconomic Resources								
Income (median-centered)			1.00**	(0.99-0.99)	1.00*	(0.99-0.99)	1.00*	(0.99-0.99)
Maternal Education								
High School Degree			0.65*	(0.43-0.95)	0.70	(0.46-1.03)	0.75	(0.49-1.13)
College or more			0.37***	(0.24-0.57)	0.42***	(0.27-0.66)	0.47**	(0.29-0.72)
Paternal Education								
High School Degree			1.36	(0.97-1.88)	1.36	(0.97-1.89)	1.43*	(1.00-2.02)
College or more			0.95	(0.65-1.38)	0.97	(0.65-1.41)	1.04	(0.70-1.53)
Maternal Employment								
Employed <35 hours			1.19	(0.91-1.54)	1.19	(0.91-1.54)	1.21	(0.92-1.57)
Not in Formal Labor Force			1.58***	(1.27-1.96)	1.46***	(1.17-1.82)	1.48***	(1.18-1.84)
Paternal Employment								
Employed <35 hours			0.79	(0.48-1.27)	0.77	(0.46-1.25)	0.77	(0.46-1.28)
Not in Formal Labor Force			1.17	(0.75-1.80)	1.14	(0.73-1.77)	1.09	(0.69-1.70)

Child Characteristics								
Any Outside Care					0.65**	(0.50-0.84)	0.66**	(0.50-0.84)
Never Breastfed					1.27*	(1.01-1.59)	1.21	(0.97-1.51)
Low Birthweight					1.02	(0.80-1.29)	1.04	(0.82-1.32)
Behavioral Problems 2 yrs.					1.02	(0.99-1.04)	1.01	(0.99-1.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							1.00	(0.95-1.05)
Adverse Conflict Resolution (Maternal)							1.04*	(1.00-1.08)
Maternal Depressive Symptoms							1.02*	(100-1.04)
Routines							0.84***	(0.76-0.92)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.8 Regression Models of Preschoolers' Sleep Duration on Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Happiness	5.43	(3.15)	1.77	(2.97)	1.12	(2.98)	-1.61	(3.01)
Paternal Happiness	-0.56	(2.49)	-0.91	(2.46)	-0.65	(2.47)	-0.46	(2.81)
Sociodemographics								
Maternal Race								
Black	-9.78	(12.98)	-9.45	(13.02)	-7.23	(13.14)	-7.71	(12.54)
Latino	-1.58	(4.79)	-3.70	(4.90)	-3.33	(4.86)	-3.01	(4.87)
Asian	-18.39**	(5.45)	-18.17**	(5.51)	-16.91**	(5.47)	-15.48**	(5.55)
Other	-18.69*	(7.98)	-16.24*	(6.98)	-14.54*	(7.02)	-14.12*	(6.61)
Paternal Race								
Black	-9.54	(12.23)	-3.58	(12.83)	-4.18	(12.74)	-4.59	(12.06)
Latino	-3.02	(4.89)	-0.15	(4.61)	-1.01	(4.71)	0.23	(4.64)
Asian	-6.99	(5.82)	-4.82	(5.86)	-5.21	(5.76)	-3.88	(5.87)
Other	11.33	(10.01)	10.21	(8.60)	9.86	(9.14)	10.14	(8.94)
Parental Age								
Maternal Age	-0.30	(0.30)	-0.19	(0.31)	-0.25	(0.30)	-0.22	(0.31)
Paternal Age	-0.10	(0.24)	-0.23	(0.25)	-0.23	(0.25)	-0.19	(0.25)
Female Child	0.24	(1.87)	0.63	(1.81)	-0.18	(1.83)	-0.08	(1.84)
Region								
Midwest	-3.20	(4.28)	-2.61	(4.11)	-3.86	(4.11)	-3.57	(4.01)
South	-20.07***	(4.16)	-20.58***	(4.02)	-21.31***	(4.07)	-21.15***	(3.95)
West	-0.15	(3.92)	-2.13	(3.79)	-3.76	(3.67)	-3.17	(3.55)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.03)	0.01	(0.03)	0.00	(0.03)
Maternal Education								
High School Degree			-3.00	(5.80)	-2.22	(5.64)	-5.01	(5.74)
College or more			-3.98	(5.59)	-3.45	(5.40)	-6.69	(5.47)
Paternal Education								
High School Degree			-1.93	(4.83)	-2.09	(4.79)	-3.28	(4.70)
College or more			4.30	(5.07)	3.99	(5.07)	1.78	(5.01)
Maternal Employment								
Employed <35 hours			24.95***	(2.64)	23.71***	(2.65)	22.98***	(2.57)
Not in Formal Labor Force			31.30***	(2.55)	28.13***	(2.61)	27.50***	(2.51)
Paternal Employment								
Employed <35 hours			10.77	(6.01)	10.27	(5.82)	10.42	(6.20)
Not in Formal Labor Force			-0.27	(5.84)	-0.86	(5.69)	1.07	(5.77)

Child Characteristics								
Any Outside Care					-13.30***	(3.01)	-13.32***	(3.01)
Never Breastfed					-4.57	(2.74)	-3.20	(2.66)
Low Birthweight					4.45	(2.76)	3.88	(2.70)
Behavioral Problems 2 yrs.					-0.88**	(0.29)	-0.75*	(0.29)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.75	(0.47)
Adverse Conflict Resolution (Maternal)							-1.03	(0.64)
Maternal Depressive Symptoms							-0.21	(0.22)
Routines							6.48***	(1.57)
Constant	639.94***	(4.62)	625.65***	(7.71)	652.53***	(9.60)	637.78***	(12.37)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.9 Regression Models Predicting Preschoolers' Obesity Odds from Parental Happiness in Relationship, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Maternal Happiness	0.74*	(0.55-0.97)	0.77	(0.57-1.01)	0.75	(0.56-1.00)	0.70*	(0.51-0.94)
Paternal Happiness	1.12	(0.85-1.47)	1.11	(0.84-1.46)	1.11	(0.84-1.45)	1.06	(0.76-1.48)
Sociodemographics								
Maternal Race								
Black	1.76	(0.65-4.70)	1.75	(0.62-4.91)	1.82	(0.62-5.31)	1.82	(0.62-5.25)
Latino	1.56*	(1.00-2.41)	1.42	(0.88-2.27)	1.50	(0.93-2.39)	1.49	(0.92-2.39)
Asian	1.40	(0.69-2.79)	1.52	(0.72-3.18)	1.61	(0.76-3.38)	1.67	(0.78-3.54)
Other	1.54	(0.79-2.99)	1.53	(0.77-3.03)	1.54	(0.76-3.10)	1.57	(0.78-3.12)
Paternal Race								
Black	1.00	(0.36-2.71)	0.94	(0.33-2.63)	0.96	(0.33-2.74)	0.96	(0.33-2.70)
Latino	1.26	(0.79-1.98)	1.08	(0.66-1.76)	1.08	(0.66-1.76)	1.07	(0.65-1.75)
Asian	0.59	(0.30-1.15)	0.61	(0.29-1.26)	0.59	(0.28-1.23)	0.59	(0.28-1.24)
Other	1.28	(0.75-2.16)	1.18	(0.68-2.01)	1.20	(0.70-2.04)	1.18	(0.69-2.02)
Parental Age								
Maternal Age	0.97*	(0.94-0.99)	0.98	(0.95-1.01)	0.98	(0.95-1.01)	0.98	(0.95-1.01)
Paternal Age	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.02	(0.99-1.04)
Female Child	0.91	(0.72-1.14)	0.92	(0.73-1.15)	0.93	(0.73-1.17)	0.93	(0.73-1.16)
Region								
Midwest	0.77	(0.54-1.10)	0.75	(0.52-1.07)	0.75	(0.52-1.07)	0.75	(0.52-1.07)
South	0.75	(0.54-1.02)	0.70*	(0.50-0.96)	0.71*	(0.51-0.98)	0.70*	(0.50-0.96)
West	0.53**	(0.36-0.76)	0.49***	(0.33-0.70)	0.50***	(0.34-0.73)	0.49***	(0.33-0.72)
Socioeconomic Resources								
Income (median-centered)			1.00	(0.99-1.00)	1.00	(0.99-1.00)	1.00	(0.99-1.00)
Maternal Education								
High School Degree			0.81	(0.56-1.15)	0.84	(0.58-1.14)	0.86	(0.59-1.22)
College or more			0.69	(0.41-1.13)	0.73	(0.41-1.12)	0.75	(0.45-1.24)
Paternal Education								
High School Degree			0.81	(0.57-1.13)	0.82	(0.81-1.52)	0.82	(0.57-1.15)
College or more			0.66	(0.40-1.08)	0.69	(0.85-1.46)	0.69	(0.41-1.13)
Maternal Employment								
Employed <35 hours			1.09	(0.80-1.49)	1.12	(0.69-2.12)	1.13	(0.82-1.54)
Not in Formal Labor Force			1.09	(0.85-1.39)	1.12	(0.40-1.32)	1.13	(0.85-1.47)
Paternal Employment								
Employed <35 hours			1.23	(0.70-2.13)	1.22	(0.69-2.12)	1.19	(0.68-2.06)
Not in Formal Labor Force			0.74	(0.40-1.34)	0.73	(0.40-1.32)	0.73	(0.39-1.33)

Child Characteristics								
Any Outside Care					1.07	(0.80-1.41)	1.06	(0.79-1.41)
Never Breastfed					1.28	(0.95-1.70)	1.27	(0.95-1.68)
Low Birthweight					0.52***	(0.36-0.72)	0.51***	(0.36-0.71)
Behavioral Problems 2 yrs.					0.98	(0.29-0.95)	0.99	(0.95-1.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.99	(0.93-1.05)
Adverse Conflict Resolution (Maternal)							0.96	(0.90-1.01)
Maternal Depressive Symptoms							1.00	(0.97-1.02)
Routines							0.92	(0.80-1.03)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.10 Regression Models of Frequency of Family Meals on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	-0.06***	(0.01)	-0.05***	(0.01)	-0.05***	(0.01)	-0.03***	(0.01)
Paternal Conflict Score	-0.01	(0.01)	-0.02	(0.01)	-0.01	(0.01)	-0.00	(0.01)
Sociodemographics								
Maternal Race								
Black	-0.83**	(0.27)	-0.82**	(0.26)	-0.77**	(0.27)	-0.76**	(0.26)
Latino	-0.08	(0.17)	-0.06	(0.16)	-0.05	(0.16)	-0.06	(0.16)
Asian	0.04	(0.22)	0.01	(0.23)	0.04	(0.23)	0.08	(0.23)
Other	-0.12	(0.32)	-0.08	(0.31)	-0.05	(0.32)	-0.03	(0.30)
Paternal Race	0.00		0.00		0.00		0.00	
Black	0.14	(0.23)	0.24	(0.24)	0.23	(0.24)	0.21	(0.23)
Latino	-0.09	(0.17)	-0.01	(0.17)	-0.02	(0.17)	0.00	(0.17)
Asian	-0.07	(0.22)	-0.02	(0.22)	-0.03	(0.23)	0.04	(0.23)
Other	0.30	(0.21)	0.32	(0.21)	0.32	(0.21)	0.37	(0.21)
Parental Age								
Maternal Age	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
Paternal Age	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.00	(0.01)
Female Child	0.02	(0.07)	0.01	(0.07)	-0.00	(0.07)	0.01	(0.07)
Region								
Midwest	-0.01	(0.14)	0.00	(0.14)	-0.02	(0.14)	-0.03	(0.14)
South	-0.11	(0.14)	-0.12	(0.14)	-0.13	(0.14)	-0.14	(0.14)
West	0.05	(0.13)	0.03	(0.13)	0.01	(0.13)	-0.00	(0.13)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			0.31*	(0.15)	0.31*	(0.15)	0.23	(0.14)
College or more			0.36*	(0.17)	0.36*	(0.18)	0.25	(0.17)
Paternal Education								
High School Degree			0.04	(0.15)	0.04	(0.15)	0.02	(0.15)
College or more			0.09	(0.16)	0.09	(0.16)	0.05	(0.15)
Maternal Employment								
Employed <35 hours			0.17	(0.10)	0.16	(0.10)	0.13	(0.10)
Not in Formal Labor Force			0.51***	(0.08)	0.47***	(0.08)	0.46***	(0.08)
Paternal Employment								
Employed <35 hours			-0.11	(0.23)	-0.11	(0.23)	-0.10	(0.22)
Not in Formal Labor Force			0.01	(0.18)	0.00	(0.18)	0.05	(0.18)

Child Characteristics								
Any Outside Care					-0.13	(0.09)	-0.14	(0.09)
Never Breastfed					-0.07	(0.08)	-0.02	(0.07)
Low Birthweight					-0.10	(0.11)	-0.11	(0.11)
Behavioral Problems 2 yrs.					-0.02**	(0.01)	-0.02*	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03	(0.02)
Adverse Conflict Resolution (Maternal)							-0.02	(0.02)
Maternal Depressive Symptoms							-0.02*	(0.01)
Routines							0.19***	(0.05)
Constant	6.36***	(0.17)	5.73***	(0.24)	6.11***	(0.28)	5.80***	(0.31)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.11 Regression Models of Preschoolers' Fast Food Consumption on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	0.02*	(0.01)	0.02*	(0.01)	0.02*	(0.01)	0.00	(0.01)
Paternal Conflict Score	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.00	(0.01)
Sociodemographics								
Maternal Race								
Black	0.17	(0.14)	0.17	(0.14)	0.14	(0.13)	0.15	(0.12)
Latino	0.12	(0.08)	0.10	(0.08)	0.12	(0.08)	0.11	(0.07)
Asian	0.11	(0.12)	0.09	(0.11)	0.11	(0.11)	0.09	(0.11)
Other	0.07	(0.10)	0.06	(0.10)	0.05	(0.10)	0.05	(0.09)
Paternal Race	0.00		0.00		0.00		0.00	
Black	-0.04	(0.13)	-0.04	(0.13)	-0.03	(0.12)	-0.03	(0.11)
Latino	0.06	(0.08)	0.04	(0.08)	0.04	(0.08)	0.01	(0.08)
Asian	-0.22	(0.11)	-0.20	(0.11)	-0.21	(0.11)	-0.24*	(0.11)
Other	-0.04	(0.12)	-0.06	(0.11)	-0.07	(0.11)	-0.09	(0.10)
Parental Age								
Maternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	-0.09	(0.05)	-0.08	(0.05)	-0.08	(0.05)	-0.08	(0.05)
Region								
Midwest	0.18	(0.10)	0.19	(0.10)	0.20*	(0.10)	0.19	(0.10)
South	0.44***	(0.09)	0.44***	(0.09)	0.44***	(0.09)	0.41***	(0.10)
West	0.22*	(0.10)	0.22*	(0.10)	0.25*	(0.10)	0.23*	(0.10)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			-0.12	(0.08)	-0.09	(0.08)	-0.04	(0.08)
College or more			-0.07	(0.12)	-0.01	(0.11)	0.03	(0.11)
Paternal Education								
High School Degree			-0.13	(0.08)	-0.13	(0.08)	-0.09	(0.07)
College or more			-0.20*	(0.08)	-0.18*	(0.08)	-0.13	(0.08)
Maternal Employment								
Employed <35 hours			0.06	(0.08)	0.07	(0.08)	0.08	(0.08)
Not in Formal Labor Force			0.01	(0.05)	0.01	(0.06)	0.02	(0.06)
Paternal Employment								
Employed <35 hours			0.11	(0.22)	0.08	(0.21)	0.06	(0.18)
Not in Formal Labor Force			0.15	(0.12)	0.14	(0.12)	0.08	(0.10)

Child Characteristics								
Any Outside Care					-0.02	(0.06)	-0.02	(0.06)
Never Breastfed					0.19**	(0.07)	0.17*	(0.07)
Low Birthweight					0.06	(0.06)	0.08	(0.06)
Behavioral Problems 2 yrs.					0.01	(0.01)	0.00	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03	(0.01)
Adverse Conflict Resolution (Maternal)							0.04**	(0.01)
Maternal Depressive Symptoms							0.00	(0.01)
Routines							-0.13***	(0.03)
Constant	0.50***	(0.14)	0.68***	(0.16)	0.34	(0.22)	0.76**	(0.24)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.12 Regression Models of Preschoolers' Soda Consumption on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	0.04***	(0.01)	0.03***	(0.01)	0.03***	(0.01)	0.02**	(0.01)
Paternal Conflict Score	-0.02*	(0.01)	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)
Sociodemographics								
Maternal Race								
Black	0.33	(0.23)	0.25	(0.26)	0.19	(0.23)	0.23	(0.22)
Latino	0.11	(0.11)	-0.03	(0.11)	-0.01	(0.10)	-0.00	(0.10)
Asian	0.08	(0.14)	0.07	(0.13)	0.08	(0.12)	0.07	(0.12)
Other	0.06	(0.13)	-0.02	(0.12)	-0.04	(0.12)	-0.03	(0.12)
Paternal Race								
Black	-0.11	(0.20)	-0.10	(0.23)	-0.08	(0.21)	-0.12	(0.20)
Latino	0.09	(0.13)	-0.06	(0.13)	-0.05	(0.12)	-0.08	(0.12)
Asian	-0.24	(0.16)	-0.16	(0.15)	-0.16	(0.14)	-0.18	(0.14)
Other	0.23	(0.16)	0.13	(0.15)	0.10	(0.14)	0.05	(0.13)
Parental Age								
Maternal Age	-0.02**	(0.01)	-0.00	(0.01)	-0.00	(0.01)	0.00	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.01	(0.01)
Female Child	-0.02	(0.06)	0.01	(0.06)	0.02	(0.06)	0.02	(0.06)
Region								
Midwest	0.13	(0.11)	0.13	(0.11)	0.15	(0.11)	0.14	(0.11)
South	0.43***	(0.09)	0.39***	(0.08)	0.38***	(0.09)	0.36***	(0.09)
West	0.06	(0.11)	0.01	(0.11)	0.06	(0.11)	0.03	(0.11)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education			0.00		0.00		0.00	
High School Degree			-0.27**	(0.08)	-0.25**	(0.09)	-0.21*	(0.09)
College or more			-0.50***	(0.10)	-0.45***	(0.11)	-0.41***	(0.11)
Paternal Education								
High School Degree			-0.17*	(0.08)	-0.16	(0.08)	-0.14	(0.08)
College or more			-0.49***	(0.11)	-0.45***	(0.11)	-0.42***	(0.11)
Maternal Employment								
Employed <35 hours			-0.23*	(0.09)	-0.21*	(0.09)	-0.20*	(0.09)
Not in Formal Labor Force			-0.05	(0.07)	-0.05	(0.07)	-0.05	(0.07)
Paternal Employment								
Employed <35 hours			0.11	(0.12)	0.08	(0.12)	0.08	(0.12)
Not in Formal Labor Force			0.09	(0.08)	0.08	(0.08)	0.05	(0.08)

Child Characteristics								
Any Outside Care					-0.02	(0.07)	-0.02	(0.07)
Never Breastfed					0.25***	(0.06)	0.23***	(0.06)
Low Birthweight					0.07	(0.07)	0.07	(0.07)
Behavioral Problems 2 yrs.					0.02**	(0.01)	0.02**	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.02	(0.01)
Adverse Conflict Resolution (Maternal)							0.01	(0.02)
Maternal Depressive Symptoms							0.01	(0.00)
Routines							-0.09***	(0.03)
Constant	0.98***	(0.15)	1.65***	(0.16)	1.05***	(0.20)	1.31***	(0.23)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.13 Regression Models of Preschoolers' Vegetable Consumption on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	-0.06	(0.03)	-0.06*	(0.03)	-0.06*	(0.03)	-0.02	(0.04)
Paternal Conflict Score	0.01	(0.03)	0.01	(0.03)	0.01	(0.03)	0.01	(0.04)
Sociodemographics								
Maternal Race								
Black	0.31	(1.07)	0.33	(1.06)	0.34	(1.04)	0.31	(0.99)
Latino	1.38*	(0.59)	1.27*	(0.59)	1.09	(0.59)	1.14	(0.59)
Asian	0.15	(0.58)	0.15	(0.59)	0.03	(0.59)	0.15	(0.58)
Other	0.26	(0.91)	0.18	(0.91)	0.19	(0.92)	0.19	(0.88)
Paternal Race								
Black	0.54	(0.98)	0.40	(0.97)	0.36	(0.95)	0.31	(0.89)
Latino	-0.70	(0.59)	-0.82	(0.59)	-0.88	(0.59)	-0.78	(0.58)
Asian	0.22	(0.57)	0.24	(0.58)	0.32	(0.59)	0.50	(0.59)
Other	0.18	(1.09)	0.12	(1.09)	0.10	(1.06)	0.21	(1.04)
Parental Age								
Maternal Age	-0.07*	(0.03)	-0.05	(0.03)	-0.05	(0.03)	-0.05	(0.03)
Paternal Age	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)
Female Child	0.24	(0.26)	0.23	(0.25)	0.20	(0.26)	0.21	(0.25)
Region								
Midwest	0.87**	(0.32)	0.82*	(0.33)	0.78*	(0.33)	0.76*	(0.33)
South	0.74*	(0.35)	0.70	(0.35)	0.66	(0.36)	0.65	(0.36)
West	1.07**	(0.33)	1.03**	(0.34)	0.86*	(0.33)	0.87*	(0.34)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.01	(0.00)	-0.01	(0.00)
Maternal Education								
High School Degree			0.20	(0.49)	0.00	(0.50)	-0.28	(0.52)
College or more			0.31	(0.62)	-0.03	(0.64)	-0.35	(0.65)
Paternal Education								
High School Degree			-0.51	(0.50)	-0.55	(0.51)	-0.65	(0.50)
College or more			-0.52	(0.58)	-0.66	(0.58)	-0.86	(0.58)
Maternal Employment								
Employed <35 hours			0.01	(0.36)	-0.07	(0.37)	-0.17	(0.37)
Not in Formal Labor Force			-0.06	(0.27)	-0.09	(0.29)	-0.18	(0.29)
Paternal Employment								
Employed <35 hours			0.16	(0.72)	0.20	(0.71)	0.26	(0.71)
Not in Formal Labor Force			0.36	(0.60)	0.43	(0.60)	0.60	(0.61)

Child Characteristics								
Any Outside Care					-0.02	(0.39)	-0.02	(0.39)
Never Breastfed					-1.19***	(0.30)	-1.06***	(0.30)
Low Birthweight					0.38	(0.27)	0.34	(0.27)
Behavioral Problems 2 yrs.					0.02	(0.03)	0.03	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.00	(0.08)
Adverse Conflict Resolution (Maternal)							-0.11	(0.08)
Maternal Depressive Symptoms							-0.00	(0.02)
Routines							0.72***	(0.15)
Constant	7.86***	(0.55)	8.28***	(0.90)	10.05***	(1.19)	7.89***	(1.31)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.14 Regression Models of Preschoolers' Fruit Consumption on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	-0.08*	(0.04)	-0.08	(0.04)	-0.07	(0.04)	-0.03	(0.04)
Paternal Conflict Score	-0.04	(0.03)	-0.04	(0.04)	-0.04	(0.04)	-0.01	(0.05)
Sociodemographics								
Maternal Race								
Black	0.47	(1.39)	0.63	(1.40)	0.81	(1.40)	0.79	(1.33)
Latino	1.42*	(0.68)	1.33	(0.68)	1.22	(0.68)	1.32	(0.68)
Asian	-2.09**	(0.65)	-2.31***	(0.67)	-2.29**	(0.68)	-2.13**	(0.66)
Other	0.65	(0.89)	0.72	(0.85)	0.77	(0.84)	0.72	(0.81)
Paternal Race								
Black	0.86	(1.26)	0.98	(1.27)	0.90	(1.28)	0.85	(1.21)
Latino	0.58	(0.66)	0.56	(0.67)	0.52	(0.68)	0.60	(0.67)
Asian	1.00	(0.59)	1.04	(0.60)	1.04	(0.59)	1.25*	(0.58)
Other	-0.06	(1.15)	-0.04	(1.11)	-0.01	(1.09)	0.14	(1.04)
Parental Age								
Maternal Age	0.04	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)
Paternal Age	-0.00	(0.04)	-0.00	(0.04)	-0.00	(0.04)	0.00	(0.04)
Female Child	0.25	(0.28)	0.25	(0.27)	0.21	(0.27)	0.19	(0.26)
Region								
Midwest	0.08	(0.56)	0.17	(0.58)	0.11	(0.57)	0.08	(0.57)
South	-0.78	(0.53)	-0.78	(0.56)	-0.77	(0.56)	-0.82	(0.55)
West	0.50	(0.53)	0.56	(0.56)	0.42	(0.56)	0.38	(0.56)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			0.15	(0.64)	0.02	(0.65)	-0.26	(0.66)
College or more			1.45*	(0.70)	1.19	(0.71)	0.88	(0.72)
Paternal Education								
High School Degree			-1.84**	(0.61)	-1.84**	(0.62)	-1.93**	(0.63)
College or more			-1.91**	(0.66)	-1.97**	(0.68)	-2.17**	(0.69)
Maternal Employment			0.00		0.00		0.00	
Employed <35 hours			0.64*	(0.31)	0.57	(0.31)	0.47	(0.31)
Not in Formal Labor Force			0.85**	(0.32)	0.83*	(0.33)	0.71*	(0.33)
Paternal Employment			0.00		0.00		0.00	
Employed <35 hours			-0.29	(0.73)	-0.27	(0.72)	-0.20	(0.70)
Not in Formal Labor Force			0.89	(0.72)	0.92	(0.73)	1.08	(0.74)

Child Characteristics								
Any Outside Care					0.04	(0.41)	0.03	(0.41)
Never Breastfed					-0.84*	(0.36)	-0.71	(0.36)
Low Birthweight					-0.00	(0.34)	-0.04	(0.34)
Behavioral Problems 2 yrs.					-0.06	(0.03)	-0.05	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.07	(0.09)
Adverse Conflict Resolution (Maternal)							-0.14	(0.07)
Maternal Depressive Symptoms							0.03	(0.03)
Routines							0.76***	(0.15)
Constant	10.54***	(0.76)	10.98***	(1.22)	12.80***	(1.47)	10.27***	(1.59)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.15 Regression Models Predicting Preschoolers' Odds of Exceeding Daily Guidelines for Screentime from Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Maternal Conflict Score	1.03*	(1.00-1.04)	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.00	(0.97-1.02)
Paternal Conflict Score	1.00	(0.97-1.01)	1.00	(0.98-1.02)	1.00	(0.98-1.02)	1.00	(0.97-1.02)
Sociodemographics								
Maternal Race								
Black	1.19	(0.56-2.51)	1.04	(0.47-2.28)	0.99	(0.44-2.18)	1.00	(0.44-2.20)
Latino	1.41*	(100-1.98)	1.18	(0.82-1.68)	1.24	(0.86-1.76)	1.26	(0.87-1.80)
Asian	0.95	(0.64-1.39)	1.08	(0.71-1.62)	1.08	(0.70-1.66)	1.05	(0.68-1.60)
Other	1.19	(0.78-1.78)	1.10	(0.74-1.63)	1.13	(0.76-1.67)	1.10	(0.74-1.60)
Paternal Race								
Black	1.63	(0.80-3.31)	1.67	(0.80-3.45)	1.73	(0.83-3.61)	1.76	(0.85-3.60)
Latino	1.51*	(1.08-2.09)	1.32	(0.93-1.86)	1.31	(0.92-1.86)	1.27	(0.90-1.79)
Asian	0.81	(0.54-1.20)	0.96	(0.61-1.50)	0.96	(0.59-1.53)	0.90	(0.55-1.45)
Other	1.82	(0.95-3.49)	1.54	(0.84-2.81)	1.51	(0.82-2.76)	1.48	(0.80-2.69)
Parental Age								
Maternal Age	0.95***	(0.92-0.96)	0.98	(0.95-1.00)	0.98	(0.95-1.00)	0.98	(0.95-1.00)
Paternal Age	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)
Female Child	1.05	(0.88-1.24)	1.08	(0.90-1.28)	1.08	(0.90-1.28)	1.07	(0.90-1.27)
Region								
Midwest	1.07	(0.77-1.47)	1.03	(0.75-1.41)	1.03	(0.74-1.40)	1.03	(0.74-1.42)
South	1.07	(0.77-1.46)	0.97	(0.69-1.34)	0.94	(0.67-1.30)	0.94	(0.67-1.31)
West	1.12	(0.80-1.55)	0.96	(0.69-1.33)	0.98	(0.70-1.36)	0.97	(0.68-1.37)
Socioeconomic Resources								
Income (median-centered)			1.00**	(0.99-0.99)	1.00*	(0.99-0.99)	1.00*	(0.99-0.99)
Maternal Education								
High School Degree			0.65*	(0.43-0.96)	0.70	(0.47-1.04)	0.75	(0.49-1.13)
College or more			0.38***	(0.24-0.58)	0.43***	(0.27-0.66)	0.47**	(0.29-0.73)
Paternal Education								
High School Degree			1.37	(0.98-1.90)	1.37	(0.97-1.91)	1.42*	(1.00-2.01)
College or more			0.96	(0.66-1.40)	0.97	(0.66-1.43)	1.04	(0.70-1.53)
Maternal Employment								
Employed <35 hours			1.18	(0.90-1.53)	1.18	(0.90-1.53)	1.21	(0.93-1.57)
Not in Formal Labor Force			1.59***	(1.28-1.96)	1.47***	(1.18-1.81)	1.48***	(1.19-1.84)
Paternal Employment								
Employed <35 hours			0.80	(0.48-1.31)	0.78	(0.47-1.29)	0.78	(0.46-1.29)
Not in Formal Labor Force			1.16	(0.75-1.79)	1.13	(0.72-1.76)	1.09	(0.69-1.69)

Child Characteristics								
Any Outside Care					0.65**	(0.50-0.84)	0.66**	(0.50-0.84)
Never Breastfed					1.26*	(1.00-1.58)	1.22	(0.97-1.51)
Low Birthweight					1.03	(0.80-1.30)	1.04	(0.81-1.03)
Behavioral Problems 2 yrs.					1.02	(0.99-1.03)	1.01	(0.99-1.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.99	(0.94-1.03)
Adverse Conflict Resolution (Maternal)							1.04	(0.99-1.08)
Maternal Depressive Symptoms							1.02*	(1.00-1.04)
Routines							0.84***	(0.76-0.92)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.16 Regression Models of Preschoolers' Sleep Duration on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Conflict Score	-0.71*	(0.35)	-0.48	(0.34)	-0.39	(0.33)	0.03	(0.37)
Paternal Conflict Score	0.35	(0.29)	0.35	(0.26)	0.35	(0.26)	0.30	(0.31)
Sociodemographics								
Maternal Race								
Black	-9.73	(12.79)	-9.39	(12.87)	-7.23	(12.99)	-7.65	(12.34)
Latino	-1.28	(4.73)	-3.49	(4.87)	-3.09	(4.83)	-2.89	(4.85)
Asian	-17.34**	(5.36)	-17.60**	(5.43)	-16.42**	(5.41)	-15.45**	(5.52)
Other	-18.10*	(7.93)	-16.08*	(6.97)	-14.44*	(7.02)	-14.28*	(6.65)
Paternal Race								
Black	-9.46	(12.32)	-3.39	(12.83)	-3.96	(12.74)	-4.40	(12.00)
Latino	-2.72	(4.87)	-0.00	(4.53)	-0.90	(4.64)	0.11	(4.63)
Asian	-7.49	(5.72)	-5.05	(5.79)	-5.45	(5.70)	-3.86	(5.79)
Other	10.72	(9.99)	9.87	(8.61)	9.54	(9.13)	10.26	(8.96)
Parental Age								
Maternal Age	-0.27	(0.30)	-0.16	(0.31)	-0.23	(0.30)	-0.22	(0.31)
Paternal Age	-0.12	(0.24)	-0.23	(0.25)	-0.22	(0.25)	-0.17	(0.25)
Female Child	0.07	(1.86)	0.51	(1.81)	-0.28	(1.82)	-0.12	(1.84)
Region								
Midwest	-2.80	(4.26)	-2.33	(4.10)	-3.65	(4.13)	-3.72	(4.05)
South	-20.05***	(4.08)	-20.61***	(3.96)	-21.36***	(4.03)	-21.32***	(3.96)
West	-0.01	(3.83)	-2.05	(3.74)	-3.69	(3.64)	-3.36	(3.61)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.03)	0.01	(0.03)	0.00	(0.03)
Maternal Education								
High School Degree			-3.23	(5.75)	-2.41	(5.60)	-5.08	(5.75)
College or more			-4.28	(5.56)	-3.67	(5.38)	-6.79	(5.51)
Paternal Education								
High School Degree			-2.11	(4.83)	-2.24	(4.77)	-3.24	(4.71)
College or more			4.04	(5.07)	3.78	(5.05)	1.81	(5.02)
Maternal Employment								
Employed <35 hours			24.97***	(2.67)	23.73***	(2.68)	22.86***	(2.61)
Not in Formal Labor Force			31.14***	(2.55)	28.00***	(2.59)	27.35***	(2.49)
Paternal Employment								
Employed <35 hours			10.65	(6.03)	10.20	(5.83)	10.57	(6.18)
Not in Formal Labor Force			0.08	(5.87)	-0.55	(5.72)	1.16	(5.73)

Child Characteristics								
Any Outside Care					-13.31***	(3.01)	-13.36***	(3.02)
Never Breastfed					-4.44	(2.73)	-3.19	(2.66)
Low Birthweight					4.29	(2.76)	3.92	(2.67)
Behavioral Problems 2 yrs.					-0.86**	(0.29)	-0.76**	(0.28)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.47	(0.56)
Adverse Conflict Resolution (Maternal)							-1.01	(0.65)
Maternal Depressive Symptoms							-0.21	(0.23)
Routines							6.51***	(1.57)
Constant	646.52***	(5.41)	627.85***	(8.39)	653.26***	(10.21)	634.97***	(11.50)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.17 Regression Models of Predicting Preschoolers' Odds of Being Obese on Parental Conflict, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Maternal Conflict Score	1.00	(0.97-1.02)	0.99	(0.67-1.01)	0.99	(0.96-1.01)	0.99	(0.95-1.02)
Paternal Conflict Score	1.00	(0.97-1.02)	1.00	(0.97-1.02)	1.00	(0.97-1.02)	1.00	(0.97-1.03)
Sociodemographics								
Maternal Race								
Black	1.83	(0.67-4.97)	1.82	(0.63-5.17)	1.88	(0.63-5.57)	1.89	(0.64-5.52)
Latino	1.57*	(1.02-2.40)	1.43	(0.89-2.27)	1.50	(0.94-2.38)	1.51	(0.94-2.39)
Asian	1.36	(0.68-2.70)	1.50	(0.72-3.11)	1.58	(0.76-3.29)	1.59	(0.75-3.32)
Other	1.53	(0.78-2.99)	1.52	(0.76-3.03)	1.53	(0.75-3.08)	1.52	(0.76-3.01)
Paternal Race								
Black	0.99	(0.35-2.72)	0.92	(0.32-2.60)	0.94	(0.32-2.71)	0.94	(0.32-2.70)
Latino	1.27	(0.80-2.00)	1.08	(0.65-1.75)	1.08	(0.65-1.75)	1.06	(0.64-1.72)
Asian	0.61	(0.31-1.18)	0.62	(0.29-1.28)	0.60	(0.28-1.25)	0.59	(0.28-1.24)
Other	1.31	(0.77-2.21)	1.20	(0.69-2.05)	1.21	(0.70-2.07)	1.20	(0.70-2.06)
Parental Age								
Maternal Age	0.97*	(0.94-0.99)	0.98	(0.95-1.01)	0.98	(0.95-1.01)	0.98	(0.95-1.01)
Paternal Age	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.02	(0.99-1.05)
Female Child	0.91	(0.72-1.14)	0.92	(0.72-1.15)	0.93	(0.73-1.16)	0.92	(0.72-1.16)
Region								
Midwest	0.79	(0.55-1.11)	0.77	(0.53-1.08)	0.77	(0.53-1.09)	0.76	(0.53-1.07)
South	0.75	(0.54-1.03)	0.70*	(0.51-0.96)	0.71*	(0.51-0.98)	0.70*	(0.50-0.97)
West	0.53**	(0.36-0.76)	0.49***	(0.33-0.70)	0.51***	(0.34-0.74)	0.50***	(0.33-0.73)
Socioeconomic Resources								
Income (median-centered)			1.00	(0.99-1.00)	1.00	(0.99-1.00)	1.00	(0.99-1.00)
Maternal Education								
High School Degree			0.81	(0.56-1.16)	0.84	(0.58-1.21)	0.87	(0.60-1.24)
College or more			0.70	(0.42-1.14)	0.74	(0.44-1.21)	0.77	(0.46-1.27)
Paternal Education								
High School Degree			0.79	(0.79-1.46)	0.79	(0.56-1.12)	0.80	(0.56-1.13)
College or more			0.64	(0.82-1.34)	0.66	(0.40-1.08)	0.68	(0.41-1.11)
Maternal Employment								
Employed <35 hours			1.08	(0.17)	1.10	(0.80-1.49)	1.11	(0.81-1.51)
Not in Formal Labor Force			1.05	(0.13)	1.07	(0.82-1.40)	1.08	(0.82-1.41)
Paternal Employment								
Employed <35 hours			1.25	(0.72-2.17)	1.25	(0.71-2.16)	1.23	(0.71-2.13)
Not in Formal Labor Force			0.74	(0.40-1.33)	0.73	(0.40-1.31)	0.72	(0.39-1.30)

Child Characteristics								
Any Outside Care					1.07	(0.80-1.41)	1.07	(0.80-1.42)
Never Breastfed					1.27	(0.94-1.69)	1.24	(0.93-1.65)
Low Birthweight					0.51***	(0.36-0.71)	0.51***	(0.36-0.72)
Behavioral Problems 2 yrs.					0.99	(0.95-1.01)	0.99	(0.95-1.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.99	(0.93-1.05)
Adverse Conflict Resolution (Maternal)							0.99	(0.92-1.05)
Maternal Depressive Symptoms							1.00	(0.97-1.03)
Routines							0.91	(0.80-1.03)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.18 Regression Models of Frequency of Family Meals on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	-0.04***	(0.01)	-0.04***	(0.01)	-0.04***	(0.01)	-0.02	(0.01)
Paternal Parenting Stress	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.03*	(0.01)
Sociodemographics								
Maternal Race								
Black	-0.87**	(0.28)	-0.85**	(0.27)	-0.79**	(0.27)	-0.77**	(0.26)
Latino	-0.08	(0.17)	-0.05	(0.17)	-0.04	(0.17)	-0.06	(0.16)
Asian	0.07	(0.22)	0.04	(0.23)	0.07	(0.24)	0.10	(0.23)
Other	-0.12	(0.31)	-0.06	(0.30)	-0.04	(0.30)	-0.01	(0.28)
Paternal Race								
Black	0.14	(0.25)	0.25	(0.26)	0.23	(0.25)	0.22	(0.24)
Latino	-0.12	(0.18)	-0.02	(0.17)	-0.03	(0.17)	0.00	(0.17)
Asian	-0.12	(0.22)	-0.06	(0.23)	-0.08	(0.24)	0.04	(0.24)
Other	0.27	(0.21)	0.30	(0.21)	0.31	(0.21)	0.37	(0.21)
Parental Age								
Maternal Age	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	0.02	(0.07)	0.01	(0.07)	0.00	(0.07)	0.01	(0.07)
Region								
Midwest	-0.08	(0.14)	-0.06	(0.14)	-0.08	(0.14)	-0.07	(0.14)
South	-0.14	(0.14)	-0.15	(0.14)	-0.15	(0.14)	-0.16	(0.14)
West	0.02	(0.13)	-0.00	(0.13)	-0.02	(0.13)	-0.04	(0.13)
Socioeconomic Resources								
Income (median-centered)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			0.28	(0.15)	0.29	(0.15)	0.21	(0.14)
College or more			0.37*	(0.17)	0.36*	(0.18)	0.23	(0.16)
Paternal Education								
High School Degree			0.07	(0.15)	0.08	(0.15)	0.03	(0.14)
College or more			0.14	(0.16)	0.14	(0.16)	0.05	(0.15)
Maternal Employment								
Employed <35 hours			0.21*	(0.10)	0.19	(0.10)	0.13	(0.10)
Not in Formal Labor Force			0.58***	(0.08)	0.55***	(0.08)	0.48***	(0.08)
Paternal Employment								
Employed <35 hours			-0.08	(0.23)	-0.09	(0.23)	-0.10	(0.22)
Not in Formal Labor Force			-0.00	(0.18)	-0.01	(0.18)	0.05	(0.18)

Child Characteristics								
Any Outside Care					-0.13	(0.09)	-0.14	(0.09)
Never Breastfed					-0.07	(0.08)	-0.02	(0.07)
Low Birthweight					-0.08	(0.11)	-0.10	(0.11)
Behavioral Problems 2 yrs.					-0.02**	(0.01)	-0.02*	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.05**	(0.02)
Adverse Conflict Resolution (Maternal)							-0.05**	(0.02)
Maternal Depressive Symptoms							-0.02*	(0.01)
Routines							0.20***	(0.05)
Constant	5.91***	(0.16)	5.28***	(0.23)	5.70***	(0.26)	5.71***	(0.31)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.19 Regression Models of Preschoolers' Fast Food Consumption on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	0.03**	(0.01)	0.03**	(0.01)	0.03**	(0.01)	0.01	(0.01)
Paternal Parenting Stress	-0.02*	(0.01)	-0.02*	(0.01)	-0.02*	(0.01)	-0.01	(0.01)
Sociodemographics								
Maternal Race								
Black	0.18	(0.14)	0.18	(0.14)	0.14	(0.13)	0.15	(0.12)
Latino	0.12	(0.07)	0.09	(0.08)	0.12	(0.08)	0.11	(0.07)
Asian	0.09	(0.12)	0.08	(0.11)	0.09	(0.11)	0.08	(0.11)
Other	0.07	(0.10)	0.05	(0.10)	0.04	(0.10)	0.04	(0.09)
Paternal Race								
Black	-0.03	(0.13)	-0.04	(0.13)	-0.03	(0.12)	-0.03	(0.11)
Latino	0.06	(0.08)	0.04	(0.08)	0.04	(0.08)	0.01	(0.08)
Asian	-0.22	(0.11)	-0.19	(0.11)	-0.21	(0.11)	-0.24*	(0.11)
Other	-0.05	(0.12)	-0.07	(0.11)	-0.08	(0.11)	-0.10	(0.10)
Parental Age								
Maternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Paternal Age	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.00	(0.01)
Female Child	-0.10*	(0.05)	-0.09	(0.05)	-0.08	(0.05)	-0.08	(0.05)
Region								
Midwest	0.20	(0.10)	0.21*	(0.10)	0.22*	(0.10)	0.20*	(0.10)
South	0.45***	(0.10)	0.44***	(0.10)	0.44***	(0.10)	0.42***	(0.10)
West	0.23*	(0.10)	0.23*	(0.10)	0.26*	(0.10)	0.23*	(0.10)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			-0.11	(0.08)	-0.08	(0.08)	-0.04	(0.08)
College or more			-0.08	(0.12)	-0.02	(0.11)	0.02	(0.11)
Paternal Education								
High School Degree			-0.13	(0.07)	-0.13	(0.07)	-0.09	(0.07)
College or more			-0.20*	(0.08)	-0.18*	(0.08)	-0.12	(0.07)
Maternal Employment								
Employed <35 hours			0.05	(0.08)	0.06	(0.08)	0.07	(0.08)
Not in Formal Labor Force			-0.01	(0.05)	-0.01	(0.06)	0.01	(0.06)
Paternal Employment								
Employed <35 hours			0.08	(0.22)	0.05	(0.21)	0.05	(0.19)
Not in Formal Labor Force			0.17	(0.12)	0.15	(0.11)	0.09	(0.10)

Child Characteristics								
Any Outside Care					-0.02	(0.06)	-0.02	(0.06)
Never Breastfed					0.20**	(0.07)	0.17*	(0.07)
Low Birthweight					0.06	(0.06)	0.08	(0.06)
Behavioral Problems 2 yrs.					0.01	(0.01)	0.00	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.03*	(0.01)
Adverse Conflict Resolution (Maternal)							0.04**	(0.01)
Maternal Depressive Symptoms							0.00	(0.01)
Routines							-0.12***	(0.03)
Constant	0.54**	(0.18)	0.74***	(0.18)	0.39	(0.24)	0.77**	(0.25)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.20 Regression Models of Preschoolers' Soda Consumption on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	0.02**	(0.01)	0.02**	(0.01)	0.02**	(0.01)	0.01	(0.01)
Paternal Parenting Stress	-0.03**	(0.01)	-0.02*	(0.01)	-0.02*	(0.01)	-0.02	(0.01)
Sociodemographics								
Maternal Race								
Black	0.40	(0.21)	0.30	(0.24)	0.22	(0.22)	0.25	(0.20)
Latino	0.12	(0.11)	-0.03	(0.10)	-0.00	(0.10)	0.00	(0.10)
Asian	0.06	(0.13)	0.06	(0.12)	0.06	(0.11)	0.06	(0.11)
Other	0.07	(0.12)	-0.03	(0.12)	-0.04	(0.11)	-0.04	(0.11)
Paternal Race								
Black	-0.16	(0.18)	-0.14	(0.22)	-0.11	(0.20)	-0.14	(0.18)
Latino	0.08	(0.12)	-0.07	(0.13)	-0.06	(0.12)	-0.08	(0.12)
Asian	-0.22	(0.16)	-0.14	(0.14)	-0.14	(0.14)	-0.18	(0.14)
Other	0.20	(0.15)	0.11	(0.14)	0.08	(0.13)	0.04	(0.12)
Parental Age								
Maternal Age	-0.02*	(0.01)	0.00	(0.01)	0.00	(0.01)	0.00	(0.01)
Paternal Age	-0.01	(0.01)	-0.00	(0.01)	-0.00	(0.01)	-0.01	(0.01)
Female Child	-0.03	(0.06)	0.00	(0.06)	0.01	(0.06)	0.01	(0.06)
Region								
Midwest	0.16	(0.11)	0.16	(0.11)	0.17	(0.11)	0.15	(0.11)
South	0.42***	(0.09)	0.38***	(0.08)	0.37***	(0.09)	0.36***	(0.09)
West	0.07	(0.11)	0.01	(0.10)	0.06	(0.11)	0.03	(0.11)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Maternal Education								
High School Degree			-0.26**	(0.09)	-0.24**	(0.09)	-0.20*	(0.09)
College or more			-0.50***	(0.11)	-0.45***	(0.11)	-0.40***	(0.11)
Paternal Education								
High School Degree			-0.17*	(0.08)	-0.16	(0.08)	-0.15	(0.08)
College or more			-0.50***	(0.11)	-0.45***	(0.11)	-0.42***	(0.11)
Maternal Employment								
Employed <35 hours			-0.24**	(0.09)	-0.22*	(0.09)	-0.20*	(0.09)
Not in Formal Labor Force			-0.07	(0.07)	-0.07	(0.07)	-0.06	(0.07)
Paternal Employment								
Employed <35 hours			0.08	(0.12)	0.05	(0.12)	0.08	(0.12)
Not in Formal Labor Force			0.13	(0.08)	0.12	(0.09)	0.07	(0.09)

Child Characteristics								
Any Outside Care					-0.02	(0.07)	-0.02	(0.07)
Never Breastfed					0.25***	(0.06)	0.24***	(0.06)
Low Birthweight					0.06	(0.07)	0.06	(0.07)
Behavioral Problems 2 yrs.					0.03***	(0.01)	0.02**	(0.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.02	(0.01)
Adverse Conflict Resolution (Maternal)							0.03	(0.01)
Maternal Depressive Symptoms							0.01	(0.01)
Routines							-0.09***	(0.03)
Constant	1.20***	(0.16)	1.81***	(0.17)	1.21***	(0.20)	1.36***	(0.24)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.21 Regression Models of Preschoolers' Vegetable Consumption on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	-0.03	(0.05)	-0.04	(0.05)	-0.04	(0.05)	0.00	(0.06)
Paternal Parenting Stress	0.03	(0.04)	0.04	(0.04)	0.04	(0.04)	0.04	(0.04)
Sociodemographics								
Maternal Race								
Black	0.27	(1.06)	0.28	(1.05)	0.31	(1.03)	0.30	(0.98)
Latino	1.38*	(0.59)	1.27*	(0.59)	1.09	(0.59)	1.14	(0.59)
Asian	0.15	(0.59)	0.15	(0.60)	0.04	(0.60)	0.14	(0.59)
Other	0.26	(0.91)	0.19	(0.91)	0.21	(0.92)	0.19	(0.88)
Paternal Race								
Black	0.54	(0.98)	0.42	(0.97)	0.37	(0.95)	0.32	(0.90)
Latino	-0.72	(0.60)	-0.83	(0.60)	-0.89	(0.60)	-0.77	(0.59)
Asian	0.18	(0.56)	0.20	(0.57)	0.27	(0.58)	0.50	(0.59)
Other	0.16	(1.08)	0.11	(1.08)	0.09	(1.05)	0.21	(1.03)
Parental Age								
Maternal Age	-0.07*	(0.03)	-0.06	(0.03)	-0.05	(0.03)	-0.05	(0.03)
Paternal Age	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)	-0.03	(0.03)
Female Child	0.25	(0.26)	0.24	(0.25)	0.21	(0.26)	0.22	(0.25)
Region								
Midwest	0.80*	(0.32)	0.75*	(0.32)	0.70*	(0.32)	0.74*	(0.33)
South	0.72*	(0.35)	0.68	(0.36)	0.65	(0.36)	0.64	(0.36)
West	1.04**	(0.34)	1.00**	(0.34)	0.83*	(0.34)	0.86*	(0.34)
Socioeconomic Resources								
Income (median-centered)			-0.00	(0.00)	-0.00	(0.00)	-0.01	(0.00)
Maternal Education								
High School Degree			0.18	(0.49)	-0.02	(0.49)	-0.28	(0.52)
College or more			0.32	(0.61)	-0.02	(0.63)	-0.36	(0.65)
Paternal Education								
High School Degree			-0.47	(0.50)	-0.51	(0.51)	-0.65	(0.50)
College or more			-0.48	(0.58)	-0.61	(0.58)	-0.88	(0.58)
Maternal Employment								
Employed <35 hours			0.03	(0.36)	-0.05	(0.37)	-0.19	(0.37)
Not in Formal Labor Force			0.02	(0.28)	-0.02	(0.30)	-0.18	(0.29)
Paternal Employment								
Employed <35 hours			0.19	(0.73)	0.23	(0.72)	0.25	(0.71)
Not in Formal Labor Force			0.33	(0.61)	0.40	(0.61)	0.60	(0.62)

Child Characteristics								
Any Outside Care					-0.02	(0.39)	-0.02	(0.39)
Never Breastfed					-1.20***	(0.30)	-1.06***	(0.31)
Low Birthweight					0.41	(0.27)	0.35	(0.27)
Behavioral Problems 2 yrs.					0.02	(0.03)	0.03	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.00	(0.06)
Adverse Conflict Resolution (Maternal)							-0.13	(0.08)
Maternal Depressive Symptoms							-0.01	(0.02)
Routines							0.72***	(0.15)
Constant	7.42***	(0.61)	7.74***	(0.97)	9.58***	(1.29)	7.81***	(1.34)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.22 Regression Models of Preschoolers' Fruit Consumption on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	-0.18***	(0.04)	-0.21***	(0.04)	-0.20***	(0.04)	-0.19***	(0.05)
Paternal Parenting Stress	0.08	(0.05)	0.08	(0.05)	0.08	(0.05)	0.11*	(0.05)
Sociodemographics								
Maternal Race								
Black	0.48	(1.37)	0.67	(1.37)	0.84	(1.37)	0.88	(1.32)
Latino	1.46*	(0.69)	1.35	(0.70)	1.25	(0.69)	1.34	(0.69)
Asian	-1.94**	(0.65)	-2.16**	(0.67)	-2.14**	(0.67)	-2.04**	(0.66)
Other	0.73	(0.91)	0.84	(0.86)	0.88	(0.85)	0.81	(0.82)
Paternal Race								
Black	0.83	(1.24)	0.97	(1.26)	0.89	(1.27)	0.82	(1.21)
Latino	0.57	(0.68)	0.56	(0.69)	0.52	(0.70)	0.62	(0.69)
Asian	0.91	(0.58)	0.97	(0.59)	0.97	(0.59)	1.25*	(0.58)
Other	-0.11	(1.16)	-0.08	(1.14)	-0.05	(1.12)	0.16	(1.08)
Parental Age								
Maternal Age	0.03	(0.04)	0.00	(0.04)	0.00	(0.04)	0.01	(0.04)
Paternal Age	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.01	(0.04)
Female Child	0.26	(0.29)	0.26	(0.28)	0.22	(0.28)	0.20	(0.27)
Region								
Midwest	-0.06	(0.55)	0.05	(0.57)	-0.01	(0.55)	-0.00	(0.56)
South	-0.85	(0.52)	-0.86	(0.54)	-0.85	(0.55)	-0.90	(0.53)
West	0.43	(0.52)	0.49	(0.55)	0.35	(0.54)	0.32	(0.54)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Maternal Education								
High School Degree			0.02	(0.65)	-0.11	(0.66)	-0.34	(0.66)
College or more			1.46*	(0.71)	1.19	(0.71)	0.90	(0.72)
Paternal Education								
High School Degree			-1.82**	(0.62)	-1.83**	(0.63)	-1.95**	(0.63)
College or more			-1.88**	(0.66)	-1.96**	(0.68)	-2.20**	(0.69)
Maternal Employment								
Employed <35 hours			0.75*	(0.30)	0.67*	(0.31)	0.54	(0.31)
Not in Formal Labor Force			1.04**	(0.31)	1.01**	(0.32)	0.83*	(0.32)
Paternal Employment								
Employed <35 hours			-0.16	(0.74)	-0.14	(0.73)	-0.07	(0.70)
Not in Formal Labor Force			0.85	(0.71)	0.89	(0.72)	1.02	(0.73)

Child Characteristics								
Any Outside Care					0.03	(0.41)	0.04	(0.40)
Never Breastfed					-0.86*	(0.35)	-0.73*	(0.35)
Low Birthweight					0.04	(0.34)	-0.00	(0.34)
Behavioral Problems 2 yrs.					-0.06	(0.03)	-0.05	(0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							-0.13	(0.08)
Adverse Conflict Resolution (Maternal)							-0.11	(0.07)
Maternal Depressive Symptoms							0.05	(0.03)
Routines							0.76***	(0.14)
Constant	10.04***	(0.80)	10.62***	(1.24)	12.45***	(1.48)	10.21***	(1.57)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.23 Regression Models of Preschoolers' Odds of Exceeding Daily Recommended Screentime on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Maternal Parenting Stress	1.01	(0.98-1.04)	1.02	(0.98-1.05)	1.01	(0.97-1.04)	0.99	(-0.04-0.02)
Paternal Parenting Stress	0.98	(0.94-1.00)	0.98	(0.94-1.01)	0.98	(0.94-1.01)	0.98	(-0.05-0.01)
Sociodemographics								
Maternal Race								
Black	1.22	(0.58-2.54)	1.05	(0.48-2.29)	1.00	(0.45-2.19)	1.00	(-0.79-0.79)
Latino	1.41*	(1.00-1.95)	1.17	(0.82-1.66)	1.22	(0.86-1.74)	1.25	(-0.13-0.58)
Asian	0.95	(0.64-1.40)	1.07	(0.70-1.62)	1.07	(0.69-1.66)	1.05	(-0.38=0.47)
Other	1.18	(0.78-1.78)	1.09	(0.73-1.62)	1.12	(0.75-1.65)	1.10	(-0.30-0.49)
Paternal Race								
Black	1.61	(0.80-3.23)	1.64	(0.80-3.37)	1.71	(0.82-3.54)	1.73	(-0.15-1.25)
Latino	1.52*	(1.09-2.10)	1.33	(0.94-1.86)	1.31	(0.93-1.85)	1.26	(-0.10-0.57)
Asian	0.83	(0.64-1.40)	0.98	(0.62-1.53)	0.98	(0.60-1.57)	0.90	(-0.57-0.37)
Other	1.84	(0.78-1.78)	1.56	(0.85-2.83)	1.52	(0.83-2.78)	1.48	(-0.21-0.99)
Parental Age								
Maternal Age	0.95***	(0.92-0.96)	0.98	(0.95-1.00)	0.98	(0.95-1.00)	0.98	(-0.04-0.00)
Paternal Age	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(1.00-1.03)	1.02*	(0.00-0.03)
Female Child	1.04	(0.87-1.23)	1.07	(0.90-1.27)	1.08	(0.90-1.28)	1.07	(-0.10-0.24)
Region								
Midwest	1.11	(0.80-1.52)	1.06	(0.77-1.44)	1.05	(0.77-1.43)	1.04	(-0.27-0.35)
South	1.07	(0.78-1.47)	0.98	(0.70-1.35)	0.95	(0.68-1.31)	0.94	(-0.38-0.27)
West	1.13	(0.80-1.57)	0.97	(0.69-1.34)	0.99	(0.70-1.38)	0.98	(-0.36-0.32)
Socioeconomic Resources								
Income (median-centered)			1.00**	(0.99-0.99)	1.00*	(0.99-0.99)	1.00*	(-0.00,-0.00)
Maternal Education								
High School Degree			0.66*	(0.44-0.97)	0.71	(0.47-1.05)	0.75	(-0.70-0.12)
College or more			0.38***	(0.24-0.58)	0.43***	(0.27-0.66)	0.47**	(-1.20, -0.29)
Paternal Education								
High School Degree			1.35	(0.97-1.86)	1.34	(0.96-1.86)	1.42*	(0.00-0.69)
College or more			0.95	(0.65-1.37)	0.96	(0.65-1.40)	1.05	(-0.33-0.43)
Maternal Employment								
Employed <35 hours			1.17	(0.90-1.51)	1.17	(0.90-1.52)	1.23	(-0.06-0.47)
Not in Formal Labor Force			1.54***	(1.24-1.90)	1.43**	(1.15-1.76)	1.50***	(0.18-0.62)
Paternal Employment								
Employed <35 hours			0.79	(0.48-1.28)	0.77	(0.47-1.27)	0.78	(-0.75-0.25)
Not in Formal Labor Force			1.17	(0.75-1.81)	1.14	(0.73-1.77)	1.09	(-0.36-0.52)

Child Characteristics								
Any Outside Care					0.65**	(0.50-0.84)	0.66**	(-0.67, -0.16)
Never Breastfed					1.26*	(1.00-1.58)	1.21	(-0.03-0.41)
Low Birthweight					1.02	(0.80-1.29)	1.04	(-0.19-0.27)
Behavioral Problems 2 yrs.					1.02*	(1.00-1.04)	1.02	(-0.00-0.03)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							1.00	(-0.03-0.04)
Adverse Conflict Resolution (Maternal)							1.05*	(0.01-0.08)
Maternal Depressive Symptoms							1.03*	(0.00-0.04)
Routines							0.84***	(-0.26-0.07)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.24 Regression Models of Preschoolers' Sleep Duration on Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Maternal Parenting Stress	0.21	(0.46)	-0.22	(0.44)	-0.10	(0.44)	0.30	(0.45)
Paternal Parenting Stress	0.84	(0.44)	0.73	(0.43)	0.77	(0.43)	0.68	(0.42)
Sociodemographics								
Maternal Race								
Black	-10.70	(12.72)	-9.71	(12.85)	-7.47	(13.00)	-7.87	(12.49)
Latino	-1.24	(4.82)	-3.44	(4.91)	-3.01	(4.86)	-2.79	(4.87)
Asian	-18.12***	(5.22)	-17.97**	(5.30)	-16.79**	(5.31)	-15.92**	(5.42)
Other	-18.42*	(7.97)	-15.99*	(6.98)	-14.38*	(7.01)	-14.33*	(6.60)
Paternal Race								
Black	-9.00	(12.18)	-3.18	(12.80)	-3.76	(12.72)	-4.12	(12.04)
Latino	-2.78	(4.98)	0.12	(4.61)	-0.72	(4.71)	0.41	(4.66)
Asian	-8.12	(5.74)	-5.21	(5.79)	-5.65	(5.70)	-3.98	(5.84)
Other	10.45	(9.82)	9.86	(8.47)	9.53	(9.02)	10.17	(8.87)
Parental Age								
Maternal Age	-0.28	(0.30)	-0.18	(0.31)	-0.24	(0.30)	-0.20	(0.31)
Paternal Age	-0.12	(0.24)	-0.23	(0.25)	-0.22	(0.25)	-0.18	(0.25)
Female Child	0.26	(1.84)	0.68	(1.80)	-0.15	(1.82)	-0.05	(1.84)
Region								
Midwest	-3.61	(4.29)	-2.82	(4.12)	-4.07	(4.15)	-3.66	(4.09)
South	-20.03***	(4.19)	-20.65***	(4.04)	-21.32***	(4.11)	-21.10***	(4.01)
West	-0.22	(3.90)	-2.19	(3.79)	-3.80	(3.70)	-3.19	(3.63)
Socioeconomic Resources								
Income (median-centered)			0.00	(0.03)	0.01	(0.03)	0.00	(0.03)
Maternal Education								
High School Degree			-3.18	(5.78)	-2.29	(5.65)	-4.79	(5.79)
College or more			-4.19	(5.56)	-3.66	(5.41)	-6.88	(5.53)
Paternal Education								
High School Degree			-1.91	(4.82)	-2.09	(4.78)	-3.32	(4.69)
College or more			3.93	(5.04)	3.55	(5.04)	1.24	(4.96)
Maternal Employment								
Employed <35 hours			24.95***	(2.72)	23.60***	(2.72)	22.48***	(2.65)
Not in Formal Labor Force			31.48***	(2.60)	28.18***	(2.63)	27.00***	(2.54)
Paternal Employment								
Employed <35 hours			10.79	(5.95)	10.27	(5.76)	10.37	(6.11)
Not in Formal Labor Force			-0.31	(5.87)	-0.91	(5.72)	1.03	(5.73)

Child Characteristics								
Any Outside Care					-13.22***	(3.01)	-13.26***	(3.01)
Never Breastfed					-4.52	(2.74)	-3.18	(2.65)
Low Birthweight					4.51	(2.75)	3.90	(2.68)
Behavioral Problems 2 yrs.					-0.92**	(0.29)	-0.80**	(0.29)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							0.55	(0.41)
Adverse Conflict Resolution (Maternal)							-1.01	(0.59)
Maternal Depressive Symptoms							-0.26	(0.24)
Routines							6.43***	(1.58)
Constant	638.48***	(5.48)	623.99***	(8.37)	650.07***	(10.27)	634.18***	(11.56)

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Table 8.25 Regression Models Predicting Preschoolers' Obesity Odds from Parenting Stress, Early Childhood Longitudinal Study-Birth Cohort, (N=4,000)

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Maternal Parenting Stress	0.99	(0.95-1.02)	0.99	(0.95-1.02)	0.99	(0.95-1.02)	0.99	(0.95-1.02)
Paternal Parenting Stress	0.99	(0.95-1.03)	0.99	(0.96-1.02)	0.99	(0.95-1.02)	0.99	(0.96-1.03)
Sociodemographics								
Maternal Race								
Black	1.84	(0.67-5.01)	1.83	(0.64-5.22)	1.89	(0.63-5.60)	1.89	(0.32-2.67)
Latino	1.56*	(1.01-2.40)	1.42	(0.88-2.27)	1.49	(0.93-2.38)	1.50	(0.64-1.73)
Asian	1.38	(0.69-2.73)	1.51	(0.72-3.14)	1.59	(0.76-3.32)	1.60	(0.28-1.26)
Other	1.53	(0.78-2.99)	1.53	(0.76-3.04)	1.54	(0.76-3.08)	1.53	(0.71-2.06)
Paternal Race								
Black	0.98	(0.35-2.68)	0.91	(0.32-2.57)	0.93	(0.32-2.65)	0.93	(0.32-2.67)
Latino	1.26	(0.79-1.99)	1.07	(0.65-1.75)	1.07	(0.65-1.75)	1.06	(0.95-1.01)
Asian	0.61	(0.31-1.19)	0.63	(0.30-1.29)	0.61	(0.29-1.26)	0.60	(0.99-1.05)
Other	1.32	(0.78-2.22)	1.21	(0.70-2.06)	1.22	(0.71-1.17)	1.21	(0.73-1.16)
Parental Age								
Maternal Age	0.97*	(0.94-0.99)	0.98	(0.95-1.01)	0.98	(0.53-1.07)	0.98	(0.53-1.07)
Paternal Age	1.02	(0.99-1.04)	1.02	(0.99-1.04)	1.02	(0.50-0.97)	1.02	(0.50-0.97)
Female Child	0.91	(0.72-1.14)	0.92	(0.72-1.15)	0.93	(0.34-0.73)	0.92	(0.33-0.72)
Region								
Midwest	0.78	(0.55-1.10)	0.76	(0.53-1.07)	0.76	(0.53-1.07)	0.76	(0.53-1.07)
South	0.75	(0.54-1.02)	0.70*	(0.50-0.96)	0.71*	(0.50-0.97)	0.70*	(0.50-0.97)
West	0.53***	(0.72-1.14)	0.48***	(0.33-0.70)	0.50***	(0.34-0.73)	0.49***	(0.33-0.72)
Socioeconomic Resources								
Income (median-centered)			1.00	(0.99-1.00)	1.00	(0.99-1.00)	1.00	(0.99-1.00)
Maternal Education								
High School Degree			0.81	(0.56-1.14)	0.83	(0.58-1.19)	0.86	(0.60-1.23)
College or more			0.70	(0.42-1.15)	0.74	(0.44-1.22)	0.77	(0.46-1.27)
Paternal Education								
High School Degree			0.79	(0.55-1.11)	0.80	(0.56-1.12)	0.81	(0.57-1.13)
College or more			0.65	(0.39-1.06)	0.67	(0.41-1.10)	0.68	(0.41-1.12)
Maternal Employment								
Employed <35 hours			1.09	(0.79-1.48)	1.11	(0.81-1.51)	1.12	(0.81-1.53)
Not in Formal Labor Force			1.07	(0.82-1.38)	1.09	(0.82-1.43)	1.09	(0.83-1.44)
Paternal Employment								
Employed <35 hours			1.26	(0.72-2.19)	1.25	(0.71-2.18)	1.24	(0.71-2.15)
Not in Formal Labor Force			0.74	(0.40-1.32)	0.73	(0.40-1.31)	0.72	(0.39-1.30)

Child Characteristics								
Any Outside Care					1.06	(0.80-1.41)	1.07	(0.79-1.42)
Never Breastfed					1.26	(0.94-1.68)	1.24	(0.93-1.64)
Low Birthweight					0.51***	(0.36-0.72)	0.51***	(0.36-0.72)
Behavioral Problems 2 yrs.					0.99	(0.95-1.01)	0.99	(0.95-1.01)
Parenting/Parental Characteristics								
Adverse Conflict Resolution (Paternal)							1.00	(0.94-1.05)
Adverse Conflict Resolution (Maternal)							0.98	(0.92-1.03)
Maternal Depressive Symptoms							1.00	(0.97-1.03)
Routines							0.91	(0.80-1.03)
Constant								

Notes: All analyses weighted using jackknife replicate weights provided by ECLS-B to adjust for sampling design. Sample size was rounded to the nearest 50 due to National Center for Education Statistics Guidelines.
Omitted reference categories: Race (White), Gender (Male), Region (Northeast), Education (Less than high school), Employment (35 hours or more per week).

Chapter 9: Discussion

Overview of the Dissertation

The overall goal of this dissertation was to study the roles of parental stressors (including happiness in relationship, conflict with spouse/partner and parenting stress) and emotional regulation skills on early childhood obesity risk. The results yielded mixed findings in regards to the effects of parental stressors on emotional regulation skills and a child's obesity risk. Table 9.1 provides an overview of the results for the main relationship in each aim. The results also showed little support for a child's emotional regulation skills mediating the relationship between parental stressors and a child's obesity risk. In general, the results highlighted that the associations between parental stressors and a child's outcomes varied by parental gender with mothers' report of stress having a stronger effect. Moreover, the results elucidated that parental/parenting characteristics that represent the broader social-emotional climate of the household (e.g. parental conflict resolution style) that were originally conceptualized as covariates tended to explain away the main relationships I sought out to examine. Also, I found minimal support for the moderation of the relationship between parental stress and both a preschooler's emotional regulation skills and obesity risk by parenting resources, including socioeconomic resources and household routines.

Next, I first provide a brief overview of the key findings per aim and then discuss the two major themes that emerged from the results. Lastly, I describe the limitations, strengths and public health implications of the current study.

Aim 1 sought to determine the relationship between parental stressors and preschooler's emotional regulation skills. I hypothesized that higher levels of parental stressors would be associated with lower emotional regulation skills. This hypothesis was partially supported and

highlighted noteworthy differences by parental gender. Specifically, the results supported the hypotheses such that higher levels of both maternal report of conflict in her relationship and maternal parenting stress were both associated with a decrease in the child's emotional regulation skills. For maternal happiness, fathers' report of conflict and fathers' parenting stress, the relationships were no longer significant with a child's emotional regulation skills once parenting/parental characteristics (including parental conflict resolution style, the number of household routines and maternal depressive symptomology) were taken into account. Thus, these other indicators of the social-emotional climate of the household appear to influence a child's emotional regulation skills above and beyond that of the specific stressors I tested in this dissertation.

Existing research on emotional regulation has not examined the effects of parental stressors net of other parent-level characteristics, as was done in this dissertation, nor done so with a large, nationally representative sample of preschoolers. In this dissertation, the inclusion of parental/parenting characteristics significantly reduced or completely accounted for the association between parent stressors and a child's emotional regulation skills. Thus, these results highlight a nuanced conceptualization of these constructs when examining the relationship between parental stressors and a child's emotional regulation skills. Specifically, the results suggest that these parent-level characteristics may explain or mediate the relationship between parental stressors and a child's emotional regulation skills. For example, higher levels of parenting stress and/or conflict with one's partner may reduce the frequency of family routines and/or increase a mother's depressive symptomology which then impact a child's emotional regulation skills.

There is some literature that suggests that parental stressors are associated with these parent-level characteristics. For example, research increasingly recognizes that it is not the presence of conflict, per se, that is detrimental for child outcomes but the parents' conflict resolution styles (McCoy et al., 2013). Moreover, parents who are depressed are more likely to express negativity towards and within the family that then can incite conflict as well as destructive conflict resolution styles (Cummings et al., 2014). Thus, parent-level characteristics such as relationship conflict, relationship happiness and parenting stress potentially may be an indirect path by which parental stressors impact a child's emotional regulation skills.

Aim 2 sought to determine the relationship between a preschooler's emotional regulation skills and obesity risk. This aim tested the relationship between a preschooler's emotional regulation skills and their obesity risk, as measured by soda consumption, fast food consumption, fruit consumption, vegetable consumption, frequency of family meals, sleep duration, odds of exceeding the screentime guidelines, and the odds of being obese. I hypothesized that higher emotional regulation skills would be 1) associated with more obesity-protective factors, including family meals, longer sleep duration, and high fruit and vegetable consumption, and 2) fewer obesity-promoting factors, including excessive daily screentime, high soda and fast food consumption and higher odds of being obese.

The results provide mixed support for the hypotheses. As expected, higher emotional regulation skills were associated with increased vegetable consumption, higher frequency of family meals and an increased likelihood of staying within the recommended guideline for screentime. There was no association however, between a child's emotional regulation skills and fruit consumption. The few existing studies that have assessed the role of emotional regulation skills on preschoolers' obesity risk have only looked at weight status and not behavioral risk

factors for obesity (Francis & Susman, 2009; Graziano et al., 2013; Miller et al, 2012). However, the mixed findings on obesity risk factors are aligned with other recent studies (Dev et al., 2013; Jones et al., 2014; Dev et al., 2013) that included multiple risk factors.

The relationship between emotional regulation skills and fast food consumption, soda consumption and sleep duration was completely accounted for by parental/parenting characteristics, which is similar to findings presented in Aim 1. This finding is consistent with literature suggesting that parental/parenting characteristics, such as maternal depression, can both influence emotional regulation (Cummings et al., 2014) and child obesity risk (Wang et al., 2011) and therefore are more likely to be alternative explanations for the main relationship.

Surprisingly, the results suggest that higher emotional regulation skills were marginally associated with higher odds of a child being obese. The literature examining the relationship between emotional regulation skills and a child's weight status among preschoolers, however, is mixed with some findings showing the expected inverse relationship (Graziano et al., 2013) and others showing an association only between self-regulation within the eating context but not among more general indicators of emotional regulation (Hughes et al., 2015).

Aim 3 sought to determine the relationship between parental stressors and a preschooler's obesity risk. This aim built on the previous ones by testing the relationship between the parental stressors measured in Aim 1 and the obesity risk factors measured in Aim 2. I hypothesized that higher levels of parental stress would be associated with lower engagement in obesity-protective behaviors (i.e. family meals, fruit consumption, vegetable consumption, and longer sleep duration) and higher odds of being obese and engagement in obesity-promoting behaviors including fast food consumption, soda consumption and excess screentime. Similar to the previous aims, these analyses yielded mixed findings that both supported and contradicted the

hypothesized relationships. The results highlight the gendered nature of these processes, namely, that these associations primarily exist for maternal reports of stress; there were only two significant associations among fathers out of a total of twenty-four—paternal parenting stress and fruit consumption, and paternal parenting stress and frequency of family meals—and the two significant associations were in the opposite direction of what was hypothesized. I elaborate on the gendered nature of these associations later in this discussion. First, however, I will provide an overview of the findings for maternal report of each stressor.

As hypothesized, maternal happiness in her relationship was associated with lower likelihood of a child being obese. Although there are no studies that have looked at this particular parental stressor in relation to child obesity risk, there are studies that have looked at other stressors parents may face, including financial strain (Garasky et al., 2009) and maternal depression (Suglia et al., 2013), that have found a positive association between stress levels and likelihood of a child being obese. Interestingly, however, maternal happiness was also associated with more frequent fast food consumption for their child. I interpret this to be due to the tendency for mothers to use food as rewards or the practice of emotional eating such that mothers use fast food as a means of pleasing, or celebrating with, their child.

After accounting for parental/parenting characteristics, particularly household routines, there were no significant associations between maternal happiness and the other six outcomes. With the exception of the likelihood of a child being obese, household routines were associated with each behavioral outcome and in the hypothesized direction (i.e., a greater number of routines were associated with more positive behavioral outcomes). This suggests that household routines play a strong role in a child's health behaviors and could be a novel modifiable factor for early childhood obesity prevention interventions.

Maternal reports of parental conflict were associated with a lower frequency of family meals and a higher soda consumption among children, which aligns with my hypotheses. There was no association between conflict and a child's sleep duration, fruit consumption, screentime, or odds of being obese. However, the associations between maternal reports of conflict and a child's fast food and vegetable consumption were significant until parental/parenting characteristics were introduced to the model. Similar to findings for maternal relationship happiness, household routines seemed to play an important role in the relationship and was significantly associated with all but one outcome, odds of a child being obese.

Among mothers, higher parenting stress levels were associated with lower fruit consumption among children. Parenting stress was also associated with higher fast food consumption and fewer family meals but both associations became non-significant after adjusting for parent-level characteristics (i.e., household routines). No other obesity risk factors were associated with parenting stress. These mixed findings are consistent with a recent study that found maternal reports of parenting stress were associated with some behavioral risk factors among children (e.g., less healthful dietary habits and less physical activity) but not with indicators of risk, such as a child's weight (Walton et al., 2014).

Overall, the mixed findings of Aim 3 highlight the complexity of the relationship between parental stressors and child obesity risk, an area in need of further research. To date, there have been no published studies among preschoolers on either the relationship between parental relationship happiness and obesity risk or the relationship between parental conflict and obesity risk, focusing rather on other social stressors. However, the comparability of studies is limited due differences in the study populations and varying constructs and measures used to measure parental stressors (Walton et al., 2014). For example, Suglia et al., (2013) found an

association between social stressors (including food insecurity, maternal depression and maternal substance abuse) and obesity among female preschoolers but not among boys. Moreover, a study among Dutch parents assessed the relationship between maternal and paternal psychological distress during pregnancy and a child's weight status at preschool age and found no significant relationships for either gender (Guxens et al, 2013). Using a sample of children ages 5 to 17, Garasky and colleagues (2009) found an association between parental stress (as measured by financial strain) and child's weight status only among children 12-17 years old, while low cognitive stimulation and emotional support from parents were associated with child's weight status among children ages 5-11. Thus, it appears that findings vary depending on the operational definition of parental stressors used as well as children's age. Some forms of stress may impact child's weight status more so at different development stages than others, which may explain why the specific parental stressors examined in this dissertation were not associated with the likelihood of a child being obese, cross-sectionally, at the preschool stage. In other words, it could be that the particular stressors examined in this relationship are not the most influential for child's weight status as early as the preschool stage. Moreover, the findings suggest a longer time lapse between stress exposures and measuring the child's weight is needed in order to detect an association. That is, the effects of stress may not be evident until later stages, particularly when a child has more autonomy in terms of his/her behavior (Hughes et al., 2015).

Parental/Parenting Characteristics

The parental/parenting characteristics (i.e., household routines, maternal depressive symptoms, and conflict resolution style) were originally conceptualized as covariates in the conceptual framework for this dissertation. It is important to take these factors into account because they help contextualize the overall household environment in which the specific

stressors that were tested operate. The results, however, suggest that they could also be potential mediators of the effects of parental stressors or confounders of the association between child emotional regulation skill and obesity risk. Namely, for the majority of the associations in all three aims, the main effects were significant until the addition of parent/parenting characteristics in the last model. These characteristics can be conceptualized as indicators of a household's broader social-emotional climate, or context. The importance of these parental/parenting factors for child obesity risk are supported by emerging research emphasizing the need to address the social emotional context of the household in which specific parenting practices/behaviors take place (Davison et al., 2013) as they can moderate the effects specific behaviors have on a child's weight status and can also influence a child's stress response system which, in turn, can impact obesity risk. The results, therefore, support the growing recognition that family research on child obesity should gather a global assessment of the home environment given the limitations of focusing on specific parenting practices in child obesity research (Bost et al., 2014; Halliday et al., 2014; Sleddens et al., 2011; Walton et al., 2014).

For example, the results in Aim 1 suggest that the relationship between parental stressors and a child's emotional regulation skills could be mediated by parental conflict resolution styles such that higher levels of parenting stress lead to more hostile modes of resolving conflict that then compromise the child's development of optimal emotional regulation skills. There is empirical support that exposure to conflict, for example, is not always detrimental for children (Cummings & Schatz, 2012). This is explained by the idea that conflict within the family is considered a "regular phenomenon in family life," so that it is ultimately the nature in which parents handle conflict that can have varying effects on the child's outcome (Barthassat, 2014). Moreover, in Aim 3, maternal depressive symptomology could be mediating the relationship

between parenting stress and a child's engagement in healthy behaviors, such that higher levels of parenting stress increases a mother's depressive symptomology which might then compromise her parenting practices, specifically whether or not she engages her child in healthful eating behaviors.

In this dissertation, the number of household routines, parental/parenting characteristics, was especially important because it was consistently associated with outcomes. Drawing on research on models of "cumulative risk", researchers are now assessing how "cumulative protective routines" can work together to reduce obesity risk (Jones et al., 2014). Some posit that routines, such as having family meals, serve as a proxy for family functioning (Rhee, 2008) because families that are better at managing daily tasks and routines are also better at connecting emotionally, fulfilling roles, and communicating, which are more conducive for developing and maintaining a child's emotional regulation, promoting healthy behaviors, and decreasing obesity risk (Rhee, 2008; Skouteris et al., 2012). Given that there is no other activity that occurs with as much consistency and regularity as eating dinner as a family, family meals are the most widely studied routine in child obesity research (Anderson et al., 2012). Family meals serve as a symbol of the dynamics within the family unit. They provide a context in which family members interact, communicate, exchange information and share experiences (Rhee et al., 2008; Fiese et al., 2012) all of which are important for the child's socio-emotional development. The emphasis on family meals in studies on routines has been noted (Anderson et al., 2012, Jones et al., 2014) thus motivating researchers to examine the effects of additional routines on child obesity risk. For example, although relatively understudied, recent literature is expanding to examine routines and rules on bedtime and on screentime given that shorter sleep duration and longer duration of television viewing are both risk factors for obesity among children, including preschoolers

(Anderson et al., 2012; Jones et al., 2014). Thus, by including a more global assessment of routines with measures on bedtime and screentime in addition to family meals, this dissertation contributes to the literature by providing evidence that an increase in the total number of routines does in fact influence child behavior and obesity outcomes.

Parental Gender

Overall, there were few significant associations between fathers' report of stress and the child obesity risk outcome. In this dissertation, the two significant findings for fathers' reports of stress were in the opposite direction of what was hypothesized: higher levels parenting stress was associated with more frequent family meals and higher fruit consumption among children. These findings, although contrary to my hypotheses do not lead me to believe that fathers have little, or no effect, on their child's outcomes. Rather, I suggest that these results be interpreted with an understanding of larger social processes and norms. As Whitaker (2011) explains, the origins of childhood obesity are complex and conventional scientific inquiry that focuses on a single or linear chain of causation will not advance our understanding of the obesity epidemic. Instead, Whitaker argues that as opposed to the overemphasis on changing the environmental factors influencing children's dietary and physical activity patterns, childhood obesity research is in need of reform of societal values and norms that shape the environments children live in. I extend Whitaker's argument to family life/processes in the United States, in light of the demographic changes that have coincided with the rise in child obesity, and in particular, to patriarchal gender roles and norms that drive parenting practices and behavior.

I argue that the counter-intuitive findings among fathers is largely driven by the fact that women continue to carry-out the majority of childrearing tasks including the various behaviors measured in the dissertation, such as monitoring and providing foods, participating in a family

meal and maintaining household routines. In other words, stress among fathers may not directly influence their children's behavior and/or emotional regulation skills which helps explain the largely null findings in this dissertation. Another explanation is that the fathers in this sample resided with a female spouse/partner who may limit his involvement in childrearing tasks. Research suggests that the mother-father relationship is an important predictor of a father's level of engagement with his child(ren) (Fagan, 2013; Fagan & Cabrera, 2012) and that mothers may serve as "gatekeepers" to spending time with their child (Fagan & Cherson, 2015; Raley, Bianchi & Wang, 2012). Thus, the findings highlight areas of future research including assessing fathers' level of engagement with their children as potential mediators in the relationship between parental stressors and a child's engagement in obesity risk factors to advance our understanding of the role of fathers.

Despite the steady increase in the time fathers report spending with their children and on child-rearing tasks as women have increased their time in the formal labor force (Tanner et al., 2014; Khandpur et al., 2014; Bianchi & Milkie, 2010; Bianchi, Raley & Casper, 2012), women are still more engaged in childrearing tasks. Thus, although the ideals and values of fatherhood are changing and there is growing interest in the effects of paternal caregiving, a gendered, or feminist, perspective on the co-occurrence of the childhood obesity epidemic and the increase in women's participation in the formal labor force illustrates how there still remains undue burden on mothers (Tanner et al., 2014) in terms of childrearing and household duties (Wright et al., 2010). This is particularly true for child obesity; as Wright and colleagues (2010) explain, much of the rhetoric in childhood obesity research has placed the individual responsibility of child obesity on mothers and as a result, research is perpetuating the misperception that an overweight or obese child is a reflection of "poor maternal care."

Parenting Resources as Protective Factors

The findings yielded limited support for the hypothesis that parenting resources buffer the adverse effects of parental stressors on children's emotional regulation skills (Aim 1) and the effects of child emotional regulation skills on obesity risk (Aim 2). The effects of two types of parenting resources were examined, one representing socioeconomic resources (i.e., maternal and paternal level of education and household income) and the number of household routines, which the literature suggests is indicative of a certain level of cohesiveness and organization within a family (Rhee, 2008; Skouteris et al., 2012; Fiese et al., 2012).

Socioeconomic resources or the number of routines did not appear to buffer the impact of parental stress on child's emotional regulation. This was surprising given that the Risky Families Model posits that socioeconomic status can exacerbate the adverse effects of early-life stress exposures by further compromising parenting practices and limiting the availability of resources to more effectively cope with stressors (Taylor et al., 2004). Moreover, these results do not align with a recent study by Zajicek-Farber and colleagues (2014) that found maintaining routines can buffer the adverse effects of parental stress on preschoolers' behavioral problems. Although socioeconomic resources and household routines did not buffer the relationship between stress and a child's emotional regulation skills, these findings show that the parental stressors included in this dissertation may impact a child's emotional regulation skills regardless of the level of resources parents have which further highlights the importance of these relationships in child health and development.

On the other hand, socioeconomic resources or the number of routines appeared to buffer the impact of child's emotional regulation on certain measures of a child's obesity risk in Aim 2 (discussed in more detail in Chapter 7). These results suggest that some parenting resources may

serve as protective factors in the relationship between a child's emotional regulation skills and their obesity risk. This is a unique contribution to the literature as Frankel et al., (2012) identified the lack of studies on moderators and mediators in research on how emotional regulation skills influence young children's obesity risk. The findings that higher levels of parental education was protective against the effects of emotional regulation skills on family meals, vegetable consumption, fruit consumption, soda consumption and exceeding the guideline for screentime are consistent with existing literature suggesting an association between socioeconomic resources and a preschoolers' obesity risk (Ostbye et al., 2013; Pan et al., 2012; Hughes et al., 2015). The protective effect of household routines on vegetable consumption and family meals is aligned with emerging research on routines as an indicator of family functioning that is conducive for the maintenance of health promoting behaviors including better dietary behaviors (Fiese et al., 2012; Haines et al., 2013; Jones et al., 2014; Zajicek-Farber et al., 2012; Zajicek-Farber et al., 2014).

However, there was a general lack of a consistent theme or pattern, in the findings on the moderating effects of parental resources on child's behaviors. Interestingly, this is consistent with recent studies among preschoolers that found varying effects on indicators of socioeconomic resources, including parental education and level of food security, on a child's engagement in obesity risk factors including the consumption of fruit, vegetable, soda and energy-dense snacks (Fernandez et al., 2016; Ostbye et al., 2013). Thus the findings challenge the conclusion that parenting resources uniformly buffer or exacerbate the effects of a child's emotional regulation skills on their obesity risk. Rather, as the results show, certain parenting resources buffer some outcomes but not others. Therefore, the results on socioeconomic

resources and/or number of household routines serving as protective factors should be interpreted with some caution.

Additional Factors: Obesogenic Environments

It is critical to acknowledge the role of the obesogenic environment in any study on obesity. Examining the relatively new obesogenic environment (characterized by an abundance of cheap, energy dense foods) helps explain how broader contextual factors have contributed to the rapid increase in obesity rates within the past few decades whereas parents, undoubtedly, experienced stress prior to the obesity epidemic. Although there is growing interest in the role of the built environment, some experts explain that changes in the built environment have not occurred simultaneously and universally to provide the strongest explanations for the dramatic rise in obesity rates since the 1960s (Swinburn et al., 2011). Thus, more emphasis has been placed on the changes in the food production systems.

Specifically, the obesity epidemic has coincided with major changes in the food production system including: 1) the availability of cheap, palatable, energy-dense foods, 2) advancements in technology (including microwaves and vacuum packing) and transportation that have increased the availability and convenience of food and 3) expansion of food marketing (Swinburn et al., 2011). Cumulatively, these factors resulted in a dramatic increase in the mass production (Swinburn et al., 2011), demand for (Anderson & Butcher, 2006) and consumption (Cutler et al., 2003) of low-cost foods high in carbohydrates and refined fats since the 1970s. Given that these changes coincided with the onset of the obesity epidemic, the mass preparation of food that emerged in the 1970's is the most likely explanation for the increase in caloric intake and weight gain (Swinburn et al., 2011; Cutler et al., 2003).

Not only has there been an increase in the supply of cheap, unhealthy food since the 1970's but portion sizes have increased as well (Anderson & Butcher, 2006). An analysis of packaged convenience foods showed that portion sizes changed less than ten times every five years in the 1970s, a time in which child obesity was not widely documented (Anderson & Butcher, 2006). This is in sharp contrast to the last half of the 1990's when portion sizes of those types of foods changed more than sixty times and when child obesity had already become a major public health issue (Anderson & Butcher, 2006). Moreover, reports have documented an increase in snacking since the 1980s (Swinburn et al., 2011), largely due to the availability of a variety of convenience foods. Thus, all of these factors help not only explain the increases in population caloric intake and population-level weight gain but also how the food environment influences the relationship between parenting stress and obesity risk.

Specifically, these changes in the food production systems provide an explanation for why parental stress may have more of an influence on child obesity than in earlier periods. For example, scholars posit that we make over a hundred decisions based on eating and food on any given day (Sigman-Grant et al., 2015). Moreover, behavioral economists explain that the majority of our decisions on food are influenced by environmental stimuli including perceived convenience and portion sizes (Sigman-Grant et al., 2015). Thus, families with higher levels of stress, and less resources for positive stress coping mechanisms, may find it more challenging to navigate an obesogenic environment (Sigman-Grant et al., 2015).

In other words, unlike parents in previous generations, parents are now facing the additional challenge of managing their stress and parenting practices within an obesogenic environment that offers an abundance of nutrient-poor "convenience foods" that are detrimental for their child's health. Therefore, it is imperative for public health professionals to recognize

the influence of these structural factors and become actively involved in policies that place constraints on the availability and marketing of cheap, energy-dense foods and sugar-sweetened beverages so that the "healthy choice is the easy choice" for families (Swinburn et al., 2011).

Limitations of the Dissertation

There are limitations to the dissertation that can contextualize some of the findings. First, although the data come from a nationally representative sample, there are factors that may undermine the generalizability of the findings. As discussed in the Methods chapter (i.e., Chapter 3), cases that were included in the analyses were different from those who were excluded due to missing data. Specifically, the analytic sample was less racially diverse, had higher levels of education, higher levels of parental relationship happiness and lower levels of parental conflict. Therefore, the lack of statistically significant findings may be more indicative of the sample comprising less "risky families" (i.e., having lower levels of stress and less conflict), and having less variation in the stressors measured, rather than a lack of an actual relationship between the constructs. In addition, the sample was restricted to dual-headed households at the preschool wave and it could be that parents in the most risky households may have either separated or dropped out of the study before the preschool wave. The findings may also be biased due to the design of the study itself as mothers were provided the father's questionnaire, to give to him, only after she completed her own questionnaire. Therefore, the sample of fathers is subject to biases based on the fact that it only included fathers whose spouse/partner completed their own questionnaires first and then agreed to provide the father with the questionnaire. The study design also did not allow for the examination of how these relationships varied between heterosexual and same-sex dual-headed households as it was assumed that the second questionnaire was administered by a "father figure" when in fact the

gender of the respondent was not collected. Also, all of the variables are based on self-reported data with child height and weight being the only exceptions. The use of self-reported data may increase social desirability bias in the responses provided. Furthermore, the measure for emotional regulation skills, although validated for measuring internalizing and externalizing behavior among preschool-aged children, may not have included items that are most relevant for dietary behaviors. This is supported by (Hughes et al., 2015) findings that found associations between preschoolers' self-regulation in the eating context and their weight status but not among measures of general emotional regulation. Moreover, the measure of parenting stress does not capture whether each parent perceives that this specific stressor, in fact, influences their behaviors or practices, and whether this varies by parental gender. This would be an informative addition to the measure to empirically test whether and/or to what extent this stressor changes parenting practices. Also, the measure of happiness in relationship may not be comprehensive enough to capture the multidimensional nature of relationship quality. For example, it could be that a parent perceives that they are "happy" in their relationship but that their partner does not adequately support them in the coparenting role, which then influences their stress levels as well as their relationship quality. This, however, is not measured in the ECLS-B.

Despite the rich data provided by ECLS-B, it lacks variables on parental health behaviors which are important components of the home environment especially given the importance of parental modeling on a child's development. Moreover, despite the growing interest in childhood obesity research among preschoolers, it could be that the relationship between parental stressors and the child outcomes measured in this dissertation may, in fact, need more time to lapse in order to detect an effect. This may help explain the lack of significant associations in Aim 3 when assessing the effect of parental stressors at earlier waves of data (when the child was 9

months and at 2 years of age) and the child's odds of being obese at preschool. This can be addressed by future longitudinal studies, by accessing the ECLS-K data that follows these children to middle school. Lastly, future longitudinal studies could also address the potential limitation that the relationships examined in this dissertation are, in fact, bidirectional, such that children with lower emotional regulation skills and/or less healthful behaviors (shorter sleep duration, higher intake of energy-dense foods) are more likely to increase the parents' stress levels. This process, however, could not be captured in this current study due to the cross-sectional design. However, future studies could examine this.

Strengths of the Dissertation

Despite the aforementioned limitations, there are several strengths of this dissertation. This study adds to the growing body of literature on the effects of stressors within the family environment on early childhood obesity risk. To date, the role of early childhood stressors on obesity risk is not well understood. This study aimed to identify novel risk factors, specifically parental stressors, and advance our understanding of factors contributing to the childhood obesity epidemic.

This study was guided by theory and empirical research suggesting that the higher risk of adverse child and adolescent outcomes detected in single headed households in comparison to their dual-headed counterparts is due to the level of conflict and stress in the household before the dissolution of the parental relationship (Arkes, 2012; Troxel & Matthews, 2004). In addition, research on the stress and child obesity has relied on psychosocial measures from either the parent or the child whereas this study included measures from both: stressors from parents and a comprehensive, validated measure of a preschooler's emotional regulation skills. Whereas most studies focus on a single or subset of obesity risk factors, this study fills gaps in the literature by

examining the relationship between preschoolers' emotional regulation and multiple behavioral risk factors associated with obesity. As Dev and colleagues (2013) argue, it is important to look at a wide range of contributing factors because these behaviors do not operate in isolation and there is no single, definitive predictor of child obesity (Dev et al., 2013; Skelton et al., 2011). This can help delineate whether the relationship between stressors is uniform across the outcomes or whether the risk is greater for some behaviors than others.

Another strength of the dissertation is the use of ECLS-B that provides a nationally representative sample of households. Existing research on the role of emotional regulation skills on a preschoolers' obesity risk have either been based on small or clinical samples (Graziano et al., 2010; Graziano et al., 2013; Frankel et al., 2012). This study makes an important contribution to the literature by looking at a more global assessment of emotional regulation skills, namely a widely-used validated measure of a child's social competence and externalizing behaviors at the preschool stage. Also, few studies have included fathers in their sample or the effects of paternal characteristics of child obesity risk. Moreover, the ECLS-B collected the data directly from fathers, as opposed to the more common practice of relying on maternal reports of the fathers' data (Goeke-Morey & Cummings, 2007). The ECLS-B also provided measures of several potential covariates to capture the myriad of familial characteristics that influence a child's outcomes. The inclusion of the parenting/parental characteristics, such as depressive symptomology, conflict resolution styles and household routines, is a contribution to the existing body of literature as the findings highlighted novel relationships that have, to date, not been included in early childhood obesity research.

Implications for Public Health Research and Practice

This dissertation addresses timely public health topics that can help advance our efforts to prevent childhood obesity. First, the effect of the parental/parenting characteristics on the main relationships emphasizes the need for programs that can help parents more effectively cope with their stressors to improve child health and development. Of note to public health researchers and practitioners, these parenting characteristics are modifiable and highlight novel strategies for future public health interventions to prevent child obesity. Results yield support for child obesity programs that provide parents with skills and support to incorporate more routines into their child's life, manage depressive symptoms, and/or provide parents with skills and support to adopt more positive conflict resolution styles. Future programs could ascertain whether strategies to minimize these stressors go above and beyond the more traditional approaches of obesity prevention that focus on the two components of energy balance, dietary intake and physical activity. Moreover, these results highlight the importance of a family-based approach that goes beyond intervening on an individual (either the child or one parent) and recognizes that multiple relationships are at play within the family context that influence, and are influenced by, child behaviors and child health.

In addition, future studies can expand on the relationships tested in this dissertation by formally testing whether conflict resolution style, depressive symptomology and household routines function as mediators. Follow-up studies can also identify whether each household routine has distinct effects on specific child outcomes as opposed to looking at all of them as a cumulative score as done in this dissertation. Moreover, as previously mentioned, paternal level of engagement should be more fully examined as a determinant of child outcomes. The questions of the dissertation can also be addressed in other nationally representative datasets that

include variables on parental health behaviors to empirically test whether parental stress influences child behaviors indirectly through their own behaviors. In addition, this dissertation also highlights the need for future studies that collect qualitative data, especially from fathers, to better delineate how these parental stressors influence parenting practices that then impact the child's behaviors. Lastly, this dissertation identified the need for studies that include both maternal and paternal report of child behaviors as this study follows the conventional design of collecting this data solely from mothers, even when data are collected from father. A unique contribution to the literature, and one that could help assess whether engagement in these child behaviors are still heavily gendered, would be a study that analyzes data collected from both parents to examine their (dis)concordance.

The study also provided important theoretical insights. While the Risky Families Model guided this dissertation, the hypotheses generated by this model were not fully supported in this current study. The development of childhood obesity appears to be too complex to be adequately accounted for by generalized models of disease, especially one that ignores the role of parental gender, such as that set forth by the Risky Families Model. Future models need to account for the specific health behaviors that are consequences of parental stressors and precursors of child obesity among preschoolers. Also, the current dissertation highlights that parental stress operates in a very gendered way. This nuance is not captured in the Risky Families Framework, which makes no considerations for gender.

Conclusion

There is increasing interest in the relationship between social-emotional and physical health and how these relationships develop early-on in the lifecourse. This dissertation aimed to

build on our understanding of how early childhood exposure to stress influences both emotional regulation skills and obesity risk among a nationally representative sample of preschoolers.

This dissertation contributes to the burgeoning body of literature on psychosocial correlates of child obesity by highlighting the importance of going beyond assessing individual parental practices, or behaviors, and instead examining the broader social-emotional climate of the household to better understand how the family context influences child behavior and health. This dissertation identified novel risk factors for child obesity prevention including parental conflict resolution styles, household routines and maternal depression. Moreover, this dissertation suggested that the relationships between parental stressors and child outcomes vary by parental gender. The delineation of the distinct pathways of each of these findings merits future research.

Table 9.1 Overview of Findings: Aim 1 Relationship between Parental Stressors and Child's Emotional Regulation Skills

	Emotional Regulation Skills
Maternal Happiness	NS *
Paternal Happiness	NS *
Maternal Conflict	-
Paternal Conflict	NS
Maternal Parenting Stress	-
Paternal Parenting Stress	NS *

Table 9.2 Overview of Findings: Aim 2 Relationship between Emotional Regulation Skills and Obesity Risk Factors

	Fruit Consumption	Vegetables Consumption	Soda Consumption	Fast Food Consumption	Sleep Duration	Exceeding Screentime Guidelines	Family Meals	Obesity Odds
Emotional Regulation Skills	NS	+	NS *	NS *	NS *	-	NS	+

Table 9.3 Overview of Findings: Aim 3 Relationship between Parental Stressors and Child's Obesity Risk Factors

	Fruit Consumption	Vegetables Consumption	Soda Consumption	Fast Food Consumption	Sleep Duration	Exceeding Screentime Guidelines	Family Meals	Obesity Odds
Maternal Happiness	NS	NS	NS	+	NS	NS	NS	-
Paternal Happiness	NS	NS	NS	NS	NS	NS	NS	NS
Maternal Conflict	NS	NS *	+	NS	NS	NS	-	NS
Paternal Conflict	NS	NS	NS	NS	NS	NS	NS	NS
Maternal Parenting Stress	-	NS	NS *	NS *	NS	NS	NS *	NS
Paternal Parenting Stress	+	NS	NS	NS	NS	NS	+	NS

Notes:
NS: Not statistically significant + : positive statistically significant relationship - : negative statistically significant relationship,
* the main relationship was significant until the final model that adjusted for parental/parenting characteristics

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