

AN EXAMINATION OF WORK TO FAMILY SPILLOVER, FAMILY MEAL RITUALS  
AND PARENTING STYLE ON CHILDREN'S OUTCOME OF OBESITY

A Dissertation

by

SAMUEL GEORGE ROBERSON, SR.

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2012

Major Subject: Recreation, Park and Tourism Sciences

An Examination of Work to Family Spillover, Family Meal Rituals and Parenting Style  
on Children's Outcome of Obesity

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Approved by:

Chair of Committee,	Wm. Alex McIntosh
Committee Members,	Corliss Outley
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	Michael Edwards
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## ABSTRACT

An Examination of Work to Family Spillover, Family Meal Rituals and Parenting Styles  
on Children's Outcome of Obesity. (May 2012)

Samuel George Roberson, Sr., B.S. Weber State University; M.S., Texas A&M  
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Chair of Advisory Committee: Dr. Wm. Alex McIntosh

Obesity has been on the rise for several decades in both children and adults. Furthermore, obesity is associated with diseases. Children's environment is suspected to affect children's eating habits and lack of exercise, but the salient aspects of children's environments are still not well understood. The present research addresses the possibility that work to family spillover may disrupt family eating patterns and children's physical activity sufficient enough to cause weight gain. Other researchers have examined the environment of the family in terms of parenting style and family rituals. This literature however has not examined the possible moderating effect of parenting styles on the effects of work to family spillover on children's obesity.

The study included a cross-sectional sample of children and adolescents (n = 312) in a Houston study. Participants included both parents (if a father was present in the household) and one child aged either 9–11 or 13–15. Bivariate, multivariate, and logistic regression analyses were performed.

Work to family spillover, family meal rituals and parenting styles were found to have a relationship with children obesity measures for both age groups. However, these relationships are less strong when combined into a full model. Only a mothers' work strain was associated with increased odds of having overweight children in the 9-11 age group. Although the relationship between mothers' work strain and mothers' controlling parenting style and obesity-related variables remained significant, there was no evidence that a maternal or paternal parenting style moderates the relationship between work spillover and children obesity measures.

Father dinner ritual importance was associated with lower odds of having overweight children among 13-15 year old adolescents. However, findings did not support hypothesis that family meal ritual variables children eating while watching TV, mother eating while watching TV nor Father dinner ritual (all significant in the full model) moderated the positive relationship between mothers work strain and overweight, at-risk for overweight, or healthy weight children for neither age group.

## DEDICATION

I dedicate this achievement to friendships and experiences shared in the hood that provided the perseverance and survival skills to complete this accomplishment. To which I am now positioned to profess knowledge and inspiring stories that may have a positive influence or impact on youth, students, adults, families, communities, and nations in a way that makes a difference in the lives of people. People like you and I who mattered even when it appeared we didn't have a voice. I dedicate this achievement to you: Joey (my white and first best friend), Glenn and Eric "Eckie" Williams and family, Wayne Ellis and family, The Gillis's, The Webb family, Peety, Tyrone Batson (and Ms. Shirley who welcomed and fed me on many nights), Ronnie and Lonnie Fields, Shaw (Taught me to catch a football by starting close in before moving far), Jose Alcantar (my Hispanic best friend), Rueben "Big Rueb" McFarland, Kenneth Wong (my Asian best friend) Reggie Quinn, Wawa "Juice" Darrell Brown, "Mooney" Kelvin Bryant, Tony Mayfield, The Terrell's, Kim Evans and family, McKinnon street, The Easley's, The Webb family, Charlie C. and family, Johnny Holman, Navy Road crew, Pierre "Fidel" Middleton (RIP), Big Dewey, John Criswell (RIP), Pelton Jr. High, Dr. Ted Carroll, Mr. Sullivan, Ms. Artson ("when you get to the end of your rope, tie a knot and hang on"), Ms. Brown ("I ain't worried about you little boy, I got my education, it's up to you to get yours"), Ms. Kathy Brash (Planted the seed to become Dr. Roberson), all Lowellites before and after me, Alton Gooch (RIP) and lastly Lorenzo Thompson (my last best friend who loved me and encouraged me to be gifted (RIP)).

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## NOMENCLATURE

B/CS Bryan/College Station

BMI Body mass index

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## CHAPTER I

### INTRODUCTION AND LITERATURE REVIEW

Obesity has been on the rise for several decades in both children and adults. Furthermore, obesity is associated with diseases. Then it is noted that obesity is likely the result of a poor diet and lack of exercise (sedentary activity). Children's environment is suspected to affect children's eating habits and lack of exercise, but the salient aspects of children's environments are still not well understood. Some have pointed to work outside the home that reduces time spent with children during crucial times of the day as a key reason for children's poor eating habits and sedentary behavior (Devine et al., 2003; Crepinsek and Burstein, 2004). However, work has many influences over family life that are not necessarily captured by work hours. For a number of years, researchers have identified the health impacts of work stress and work to family spillover have been found to influence the health of both the workers themselves but also other family members (Karasek and Theorell, 1994; Kasl, 1996; Grywacz, 2000). The present research addresses the possibility that work to family spillover may disrupt family eating patterns and children's physical activity sufficient enough to cause weight gain.

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This dissertation follows the style of *Journal of Youth and Adolescence*.



Other researchers have examined the environment of the family in terms of parenting style and family rituals. During the past 10 years, investigators have turned their attention away from the more general effects of parenting style on child development and have begun to study its effect on children's eating habits and obesity, finding that particular parenting styles increase the likelihood of obesity in children. This literature however has not examined the possible moderating effect of parenting styles on the effects of work to family spillover on children's obesity. Similarly, researchers have found that family meal rituals protect family members from certain sources of stresses that might affect family life, child development, and children's health (Eaker and Walters, 2002). However this literature has ignored both work to family spillover and obesity in children.

The general hypothesis of this study is that work spillover affects interactions with children and thus may affect child health and wellness measure obesity. Furthermore, I hypothesize that because positive parenting and family meal rituals are positively associated with children health and well-being, that these features of family life will moderate the impact of work spillover on children's body mass index (BMI).

If a child has a mother and father who both work and their job commitments interfere with the family's commitment to eating a home cooked meal at home together as a family, it is expected that the child may eat away from home or takeout at home, with one or more parents missing from the table. Parental work spillover is expected to lessen commitment to family meals and be predictive of higher BMI in children.

### **Obesity Prevalence in the United States**

The prevalence of obesity in America has become a widespread problem across society according to ongoing data collected by the Centers for Disease Control (2009). Of particular concern is the fact that the prevalence of obesity has increased over the last two decades in the United States for both adolescent boys and girls across ethnicity between 1988-1994 and 2007-2008 (Ogden & Carroll, 2010). In a report to the United States Department of Agriculture, McIntosh, Davis, Nayga, Anding, Torres, Kubena, Perusqula, Yeley, and You (2006) reminded us that the United States now leads the world in obesity rates and obesity is known to be related to many health problems. Such problems include type II diabetes, dyslipidemia, hypertension, cardiovascular disease, sleep apnea, and orthopedic complications are now diagnosed frequently among overweight children and adolescents (Black et al, 2006).

According to Ogden, Flegal, Carroll, & Johnson (2002) overweight and obesity in children and adolescents have been on the rise for some time and presents serious issues in the field of public health. Using the criterion of the 95<sup>th</sup> percentile of BMI data from the National Health and Nutrition and Examination Survey, the magnitude of the change over the past several decades in children (age 6 to 11) and adolescents' (age 12-19) obesity is shown in Table 1.

**Table 1 Childhood Obesity: 95th Percentile of BMI.**


---

	Ages 6-11	Ages 12-19
2009-2010	18.0%	18.4%
2001-2002	16.3%	16.7%
1988-1994	11.3%	10.5%
1976-1980	6.5%	5.0%
1963-1965	4.0	6.1%

---

Source: National Health and Nutrition Examination Survey (2009-2010)

According to Daniels (2006) study of youth, obesity-related chronic disease may include high blood pressure, type II diabetes, heart disease, disordered breathing during sleep and early symptoms of hardening of the arteries. This led Daniels, 2006, to postulate that a prevalence of this obesity epidemic can increase cardiovascular system problems and contribute to an accelerating of heart disease among youth resulting in a lowering mortality rate among today's children in comparison to their parents. For example, obesity can harm the cardiovascular system and being overweight can accelerate the development of heart disease. In order to better understand the obesity epidemic in children, it is necessary to examine how the health and well-being related behaviors of parents affect the health and well-being outcomes in their children.

There is increasing evidence that the issue of childhood obesity is placing overweight children at greater risk of becoming more susceptible to health risk, chronic diseases and long-term risk associated with obesity in adulthood (Zhou, 2011, Daniels, 2006). There are a variety of methods used to measure obesity; however, body mass index (BMI) is likely the most widely used. Recently, BMI has begun to be calculated for youth differently than adults and an effort has been led by the Center for Disease Control to move away from referring to children as obese and focusing more on weight category. It uses age- and sex-specific percentile values and classifies youths as being at risk for overweight (BMI  $\geq$  85th percentile) and/or overweight (BMI  $\geq$  95th percentile) (CDC, 2008). For the purpose of this study, children are referred to as healthy weight (5th percentile to less than 85th percentile), at risk of overweight (85th to less than the 95th percentile) and overweight (equal to or greater than the 95th percentile) (Kuczmarski et al., 2002).

Overweight has been explained as an imbalance between energy intake and energy expenditure (Kremers, De Bruijn, Visscher, Van Mechelen, De Vries, & Brug, 2006). Thus weight gain is derived from having a positive energy balance and obesity occurs when there are consistent weight gains over time for an individual (Zhou, 2011, p.2). Kremers et al., referred to behaviors that cause positive or negative energy balance as 'energy balance-related behaviors (EBRB).

Many studies have examined potential causes of a growing weight status among young people. Most efforts have focused on physical activities and dietary patterns as the usual suspects (Frank, Andresen, & Schmid, 2004). Accordingly Kremers et al.

(2006) argued that physical activity and dietary behaviors are two major behaviors that influence energy balance. See Kremer et. al (2006) for a more in-depth discussion on EBRB.

Zhou (2011) asserted physical activity and dietary behaviors are interactive and have complexities that make it difficult to assert either as a universal cause of youth obesity over other suspected causes. Arguably, physical activity has received the most attention as a panacea for reduction in obesity and associated risks (U.S. Department of Health and Human Services, 2008). According to the U.S. Department of Health and Human Services (USDHHS), physical activity in general helps children and adolescents improve cardiovascular endurance, develop healthy bones and muscles, enhance self-esteem, improve weight control, reduce anxiety and stress and may improve blood pressure and cholesterol levels. As such, the USDHHS recommends that children and adolescence ages 6-17 participate in at least 60 minutes of daily physical activity (USDHHS, 2008). A 2009 report by the Center for Disease Control suggested that participation in physical activity declines as children and adolescence age; and the majority of high school students do not participate in physical activity at the recommended rate, and only a few attended physical education class daily.

Studies have supported increased physical activities in order to increase energy expenditure and improved diet and food consumption as an antidote to obesity (Frank, Andresen, & Schmid, 2004). Few would argue with this logical examination of energy consumption and energy reduction balance methodology. While changing dietary habits has been promoted to reduce obesity, recent studies have shown that factors beyond

dietary habits affect how and what we eat must be addressed (McIntosh, Kubena, Tolle, Dean, Kim, Jan & Anding, 2011). Therefore, there is a need for studies to move beyond diet control in order to deal with the growing epidemic of obesity in America.

While a number of studies have found a children watching TV to be negatively correlated with physical activities and positively correlated with obesity, findings have been inconsistent across studies and many have been cross-sectional rather than longitudinal (Rideout, V and Kaiser Family Foundation, 2004). Longitudinal studies have been inconsistent in their findings and thus causal relationship between TV viewing and childhood obesity remains contested (Lowry, Wechsler, Galuska, Fulton, & Kann, 2002). Even so, studies have shown television viewing to be associated with obesity both cross-sectional and in longitudinal data among adolescents (Andersen et al, 1998; Lowry, 2002; and Rey-Lopez, 2008). Zimmerman and Bell (2010) cite 3 primary pathways linking television to obesity; by displacing time that would otherwise be spent in physical activity; by promoting eating while viewing, which may foster both lower-quality and higher-quantity food intake; and by exposing children to food advertising, which adversely affects their diets. Thus watching television has been viewed as the antithesis to physical activity and healthy food choices in which “couch potato” has been conveyed as the popular presumption conveyed to describe those who watch television while eating (Jordan , Kramer-Golinkoff, and Strasburger, 2008). In a review of published studies regarding the relationship between sedentary behavior and its effect on the body composition of children and adolescents by Lopez et al (2008), none of the reviewed interventions designed to reduce TV viewing lowered the prevalence of

obesity. This led Lopez et al. to quote Shepard (2005), “obesity is easier to prevent than to correct.”

Despite this, children grow up in contextual environments which affect their physical and social development. Bronfenbrenner’s (1996) ecological systems theory and model has helped us to better understand how children are affected at the personal, familial, community and society levels. As such, youth are expected to be responsive to levels of parental stress, family dysfunction, economic instability, work conditions and other socioeconomic and familial factors. However, insufficient effort has been made in order to determine how socioeconomic and familial factors affect childhood obesity. Recent efforts have been exerted to study how dietary intake, parenting style, and meal importance factors contribute to weight gain and obesity in youth, but little or no studies have looked at the potential connection between maternal and paternal work spillover and childhood obesity. This study aims to examine potential associations at the parental level of parenting styles, work spillover, perception of family meals rituals and BMI among the age groups 9-11 and 13-15. The study will further examine family meal rituals and parenting styles as potential buffers of the effects of work spillover on children obesity.

The following section first reviews work to family spillover and then will present the common associations among family meal rituals, parenting styles, work spillover, and childhood obesity.

## **Work to Family Spillover**

Work spillover can have a deleterious effect on parent-child relations. However, we have learned that some families are more resilient than others. We know from earlier studies that excessive work-related demands on time (Pleck, 1979), as well as structural and psychological interfaces between work and family (Piotrkowski, 1979) can result in occupationally induced family strain. The psychological interface refers to positive and negative carry-over from work to family life and energy deficit at home because of the demands of work. The structural interface consists of the time and space constraints of work on family life. A study of male professionals and managers found three major forms of occupationally-induced family strain including long hours, the need to work nights or weekends; fatigue or irritability due to tension at work; and preoccupation with work-related problems (Mortimer, 1980). Voydanoff and Kelly (1984), in a paper on time shortage as a type of work/family strain, reported the ability to spend time in family activities to be one of the most important resources for coping with time demands. One such opportunity for family time is through family meal rituals.

### **Role Theory Background**

Altobelli and Moen (2007), explained 'spillover' as influences that cross boundaries between work and family produce both positive and negative effects and can originate from either work or family domains. For the purposes of this thesis, I focus on how work spillover may be associated with children obesity. The work of Altobelli and Moen sought to understand how couple-level patterns of spillover might help identify family



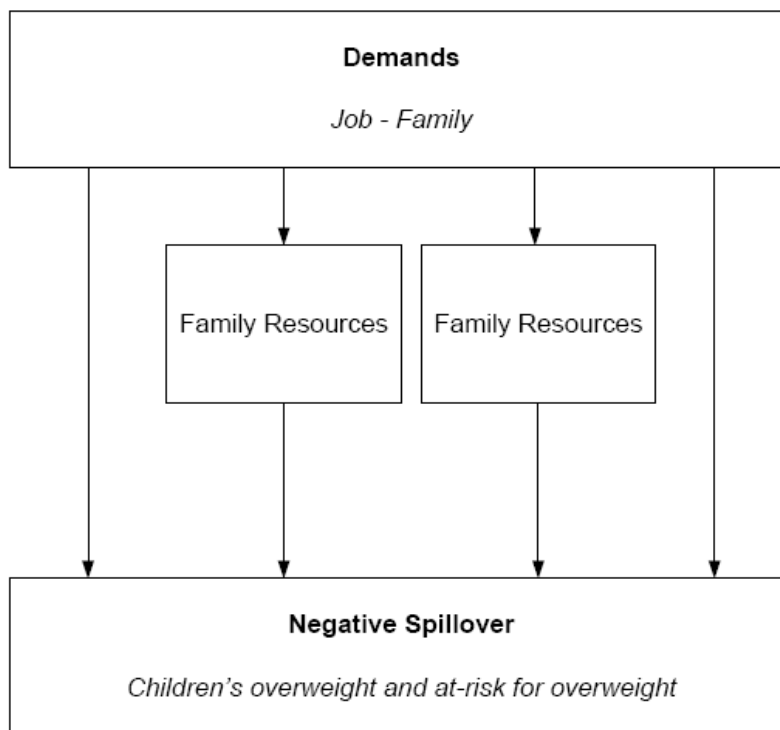
members that were vulnerable to negative impacts of work and family conditions by drawing on longitudinal data collected from dual-earner couples.

The early work of researchers focused on role theory and the strains associated with balancing multiple roles (Staines, 1980). Work-family interface emerged later to focus on conflicts between work and family domains (Kirchmeyer, 1993). Drawing on the work of early researchers that addressed the interpersonal conflict of role theory, others have conceptualized work-family conflict as strain-based, behavior-based, and time-based (Carlson et al., 2003; Greenhaus & Beutell, 1985). Altobelli and Moen (2007) elucidate how time-based occurs when time in work or family domain interferes with other domain; stress-based conflict occurs when stressor in one environment causes strain in the other; and how behaviors valued in one domain may now be valued in the other domain. Although earlier work investigated and found the positive and negative effects hypothesized by role theory, this study followed a more recent pattern of researchers described in Frone (2003) to be that of focusing on negative effects of work and family strain.

I investigate first, whether there are identifiable patterns of work spillover from each parent associated with children overweight or at-risk for overweight, and if so, what distinct and/or similar patterns emerge. For example, are higher levels of work spillover for either parent correlated with obesity? Do the findings for fathers and mothers differ? Do these patterns of effect differ by age group 9-11 and 13-15?

## Work and Obesity

We have known for some time that a great many parents experience some form of challenge in coordinating a balance between work and family demands (Friedman, 1987; Hughes & Galinsky, 1988). We have learned from previous studies that parents who are highly committed to their work may devote less time, energy, and attention to other family members (McIntosh et al., 2006). Also, work commitment has been found to increase marital conflict and decrease marital satisfaction (Laedwig and McGee, 1986); in addition committed workers have been found to pay less attention to their children (Walters, Tasker, and Bichard, 2001). Thus we can deduce that children who are exposed to the effects of work spillover at home suggest the possibility that children are being exposed to stress. We also know, coincidentally, that there is strong evidence of a growing prevalence of obesity in children. Most of the literature on work to family addresses spillover at the spousal level. Absent in the literature is more research linking work demands on childhood health and well-being. We have learned that the way parents orient toward work as well as work conditions can affect parent-child relationships in general (Parcel & Menegham, 1994; Fenwick & Tausing, 2004, McIntosh et al, 2011). According to Altobelli and Moen, Previous studies have argued that higher family and job demands leads to negative spillover and family and work resources serve as protective barriers against negative spillover (See Figure 1). Drawing on this postulate, family meal rituals and parenting styles have been associated with positive outcomes in children and may provide a protective resource in the presence of negative work spillover.



**Figure 1 Relationships between the Demands from Job or Family Interface and Outcomes.**

**SOURCE:** Altobelli and Moen (2007).

**NOTE:** Family and work resources illustrated as protective barriers.

Obesity has been studied extensively among children but not within the context of work spillover and family meals. Of particular concern is the fact that the prevalence of obesity has increased over the last two decades in the United States for both adolescent boys and girls across ethnic groups between 1988-1994 and 2007-2008 (Ogden & Carroll, 2010) We have also seen a similar pattern of increased participation rate among married women with children under age 18 in the labor force rising from 47.4% percent in 1974 to 71.3%% in 2008.

Despite this, women continue to spend considerably more time doing housework than men (Blau, 1998). Yet parents' work-life spillover onto children and its possible effects on has been under studied.

### **Family Routines, Rituals and Outcomes**

Fiese, Foley & Spagnola (2006), provide a distinction between family meal routines and rituals as the former being “typically directly observable” and the later “more closely linked to symbolic aspects of family life.” The benefits of family meal rituals have been shown to include with better nutritional intake and lower levels of obesity rates in children (McIntosh et al., 2006). Findings from others studies suggest that meals promote healthier eating among children and adolescents in the form of (1) greater fruit and vegetable consumption and (2) less soft drink consumption (McIntosh et al., 2010); family meals to be associated with greater intake of grains, vegetables and fruit and lower intake of fried foods and soft drinks (Woodruff and Hanning, 2008); less disordered eating ( Neumark-Sztainer, 2006); linked family meal participation and psychological well-being (less depression; higher self-esteem; less suicidal ideation) and lower proneness to engage in delinquent activities (lower likelihood of smoking, drinking alcohol, using marijuana) (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004). Research on family meals in the past decade has further shown a positive association between family meal frequency and adolescent healthy dietary intake (Berge et al., 2010); academic success (Fiese, 2000); lower levels of extreme weight control behaviors Neumark-Sztainer, Wall, Story, & Fulkerson, 2004; Neumark-Sztainer, Eisenberg, Fulkerson, Story & Larson, 2008); better psychosocial health

(Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Fulkerson, Story, Mellin, Leffer, & Neumark-Sztainer D, 2006); and some evidence of being protective against obesity although findings have been inconsistent across studies (Campbell, Crawford, & Ball, 2006; Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Sen, 2006; and Moens, Braet, & Soetens, 2007). Even so, little is known about familial factors associated with family meals in the home of adolescents and less is known about factors outside the household, such as work spillover, or factors inside the household, such as parenting styles, that are constraints to family meals patterns. Research is needed to understand more about constraints to having family meals in the household so family intervention programs can disseminate information on how to accommodate or avoid such constraints that infringe upon youth benefiting from the protective nature of family meals.

#### Family Meals as a Protective Resource

Over 50 years of studies have been conducted on family meal rituals beginning with the seminal work of Bossard and Ball (1950). A review of the literature by Fiese, Thomas, Tomocho, Douglas, Josephs, Poltrock and Baker (2002) reported earlier work focused on exploring theoretical findings using a functional approach and later ritual studies included observation methods used to understand family process including the effects of alcoholism. By the 1980s, scientists were beginning to report on how family rituals might serve as a protective factor between the destructive effects of parental alcoholism on children in the household (Bennett, Wolin, & McAvity, 1988; Bennett, Wolin, Reiss, & Teitlebaum, 1987; Wolin & Bennett, 1984; Wolin, Bennett, Noonan, & Teitlebaum,

1980). Feise et al, (2002) asserted some noteworthy findings by Wolin, Bennett and their colleagues that when family rituals included were supportive of alcoholism, (e.g. excessive alcohol drinking at a family reunion) the families were more likely to pass alcoholism down to the next generation. Moreover, children's well-being was lessened when alcoholism was present in the household and families had disrupted family routines. Thus the quality of family rituals can have either a positive or negative effect.

There exist a body of work that has focused on both the direct and indirect effects of family routines and rituals on family health and well-being. The work of Boyce et al. (1977) and Fiese et al. (1993) proposed that routines and rituals directly affect family health and well-being. By contrast, the work by Brody and Flor (1997) and Keltner (1990) asserted that family routines may indirectly affect outcomes in children through the encouragement of good health and well-being by parents. Each approach lends support to the hypothesis that family routines and rituals are a part of a larger ecology that can affect family relations and child development processes (Bronfenbrenner & Evans, 2000).

It has become fairly typical for both spouses to be employed outside of the household. Consequently, parents spending quality time or finding time to monitor children activities are challenging for most (Friedman, 1987; Hughes '& Galinsky, 1988). Family routines have been reported to be associated with academic success (Fiese, 2000) and parental monitoring has been found to be a strong predictor of children's well-being (Furstenberg, Elder, Cook, & Eccles, 2000). Fiese (2006) posits that family meal routine continuity may garner its effect on children's well-being by

allowing parents to provide reinforcement of family roles and present opportunity to influence academic performance and peer relationships and planning future family events. Fiese argues parental monitoring is the linkage to positive child outcomes that derive from family mealtime settings where family role identities are endorsed. Still others would argue that there are also downsides to family rituals, such as the time and effort put into preparations (Meske et al., 1994), unpleasant childhood memories of family meals (Lupton, 1994) and the possibility of drawing out family conflict (Leach & Braithwaite, 1996). While understanding the predictability of work stress and family meals on children outcomes is important, it is also important that we understand what factors may moderate the impact of work spillover on children's outcomes. Thus finding factors that protect against the potential impact of work spilling over into the home is important for maintaining household environments in which children can thrive.

### **Parenting Styles**

Recent studies have begun to look at associations between parenting styles and family meals. According to Baumrind (1991), parenting style dimensions include a parent's responsiveness and demandingness. There are four classic parenting styles; authoritative, authoritarian, permissive, and neglectful. Although authoritative parenting is widely considered the parenting style most associated with positive outcomes in children, a study by Berge et al (2010) was the first study conducted to learn about how parenting styles shapes family meal patterns. In Berge et al., 5 year longitudinal study looking at an association between a home environment factor of parenting style and family meal frequency, findings were able to show authoritative parenting style predicted higher

frequency of family meals 5 years later, although only when this parenting took place between opposite sex parents parent/adolescent dyads.

Berge et al. went into the study suggesting parenting style may have the potential to influence aspects of adolescent lives such as eating behaviors, physical activities, and ultimately the risk for overweight. According to Berge et al., previously, several cross-sectional studies involving youth had found an association between authoritative parenting style and lower BMI, healthier dietary intake and authoritarian parenting style had shown a fivefold increase in the odds of being overweight.

#### Parenting and Workplace

The focus of many studies has been on the impact of mothers in the workplace. Work and family represent two central domains in which adult life is spent. According to Frone, Russell, and Cooper (1992), literature surrounding these two domains remained largely independent until the dramatic increases in number of married women who have young children began to join the work force; increase prevalence of dual-earner families, single-parent families, and the demands of elder care facing families care (e.g., Burke & Greenglass, 1987; Hall & Richter, 1988; Matthews & Rodin, 1989; Zedeck & Mosier, 1990). As a result, an interest among stress researchers generated concern about the impact of work and family stressors on overall well-being (Frone et al., 1992).

Recent investigations of mothers work hours and work schedule suggest a link to obesity in children (Miller and Han, 2008; Morrissey et al., 2011). Law (2007) makes the argument that attachment parenting promotes demand-feeding in infants which may be carrying over into childhood-adolescence where the author suggest that food no



longer serves to satisfy hunger but also to attend to emotional needs. As such dentists are now viewing recent increased obesity trends in children as both a health issue and an indicator of tooth decay. According to Decaluwe et al., (2006) authoritarian parenting style has been most highly associated with obesity and children from authoritative households are less likely to be obese than children from permissive and neglectful parenting styles. The earlier work of Hughes & Galinsky, (1988) found employed mothers with younger children are more likely to experience greater work-family interference, when compared with employed mothers of older children. In addition, employed mothers of preschoolers have been found to report significantly greater work-family role strain and more health-related symptoms than their male counterparts (Green-berger, Goldberg, Hamill, O'Neil, & Payne, 1989).

#### Parenting and Children Well-Being

Parents who spend time with their children have been associated with positive children developmental outcomes such as self-esteem (Bulanda & Majaumdar, 2009). Parental influences are known to play an essential role for children physical and psychosocial development (Jackson et al., 2005), academic performance (Garg et al. 2005), behavioral problems (Weaver & Prelow, 2005) and multiple aspects of development (Baumrind, 1991). In addition, studies have demonstrated that when parent/child relationships are high quality, parents are in a position to serve as a buffer against the stresses of adolescence (Papini and Roggman, 1992). Even so, we know that when parents bring stress home from work it can be disruptive of parent/child interactions (Repetti & Wang, 2009). Research linking perceived parenting behaviors and the nutritional status and

other health outcomes of adolescents until recently has been neglected. Furthermore, researchers have asserted that parent-child relations on adolescent psychological well-being have been widely overlooked and fathers tend to be underrepresented in family assessment studies (Videon, 2005; Phares, 1996). Scholars Williams and Kelly (2005) stated unequivocally, “little is known about the different roles that mothers and fathers play during adolescent development” (p. 171). Therefore, accounting for each parent’s potential contributions to their children’s obesity may offer new channels from lessening obesity by working with both parents.

### **Work Family Interface**

According to an inductive model put forth by Voydanoff (2002), work-family interface are associated with perceptions of work-family conflict, and how roles in each environment are balanced or enhanced in a way that results in either work-family role strain or work-family role ease. Voydanoff posited that families and individuals adopt strategies or coping resources to alter aspects of work, family or the individual to improve work, family, and individual outcomes. However, most studies examine outcomes, adaptive strategies or resources from the standpoint of the adult parent or work place. In studies examining work-family conflict, little is known about adaptive strategies of children or how parents or work adaptations improve children outcomes. Voydanoff model asserts that the success of these strategies is indicated by the extent of perceived work-family fit which is directly related to work, family, and individual outcomes. However, only a few studies have focused on how work spillover leads to specific child outcomes.

According to Jacob et al., studies of family outcome resulting from work issues tend to focus on outcomes associated with job satisfaction, life satisfaction, and marital or parent/child conflicts experienced by those suffering from those issues. We have learned that work-family conflict most consistently predicts negative family outcomes resulting from work hours (Jacob, Allen, Hill, Mead & Ferris, 2008). Although a considerable amount of research has investigated the benefit of family routines and rituals on family outcomes, no such studies have examined family meal rituals as a potential buffer between work spillover and obesity in children. The work of Fiese et al. (2002) and others have asserted that rituals and routines may ease the stress of daily living as individuals and families seek to find balance between busy demands of home and work. There is a paucity of studies that specify these effects.

Family meals, and particularly dinnertime, have long been considered an important routine. At the same time, it has become fairly normative, for both spouses to be employed outside of the household. Spending quality time or finding time to monitor children's activities are challenging for most. Routines have been reported to be associated with academic success (Fiese, 2000) and evidence support parental monitoring as a strong predictor of children's well-being (Furstenberg, Elder, Cook, & Eccles, 2000). Fiese (2006) posits that routine continuity may garner its effect on children's well-being through having an opportunity to reinforce roles among family members while influencing a child sphere of influence.

Work-family conflict research has typically focused on how individuals and families manipulate employment and family demands (Hansen, 1991; Menaghan &

Parcel, 1990). This study is guided by Altobelli and Moen (2007) assertion that family resources may serve as protective barriers against job demands. Family routines may be one such resource.

### **Work Spillover, Family Rituals, and Parenting Styles and Outcomes in Children**

A recent study documented those children who spend more time with fathers than mothers are more likely to have to higher BMI measurements and intake of more energy from fat (McIntosh, Davis, Nayga, Anding, Torres, Kubena, Perusqula, Yeley, and You, 2006). In addition, findings from this study suggest that fathers are more likely to head for fast food alternatives when mothers are tied up in other involvements, such as work, and are inconvenienced from being able to prepare a home cook meal. The study by McIntosh and colleagues has helped us begin to understand how patterns of household members and family meals are associated with obesity-related outcomes. Perhaps a bigger contribution of this study has been the examination of the complexity of parental time and role strain on such outcomes. McIntosh et al. argues that the children's obesity is affected in different ways by father and mother and thus posits:

“that if policy goal or target is to improve children's food intake and reduce children's obesity, then multiple policy instruments that work in concert will likely be required – multiple policies that target not only the mother but also the father, and not only at home but also at work... Multiple policy instruments will have to be directed at not only creating an environment that reduces the tension that exists between work and home life for the individual, but also creates an environment where individuals can more

easily make tradeoffs and decisions that are beneficial to their children's intakes and obesity measures" (p.105-106).

Although associations between family meals and obesity have been inconsistent, this study contributes to this emerging body of family research by examining family meals and parenting styles as possible buffers between work spillover and children outcomes of obesity as an overarching thesis. There may exist other children outcome variables related to work spillover and family meals. However, this study has chosen to examine the outcome variables of obesity because of the increasing concern and stakeholder interest among youth, family and health educators and recreation practitioners.

### **Problem Statement**

As obesity among young people remains a significant problem, controlling obesity rates is an important health concern. There is a need to examine multiple sociological factors that may be contributing to childhood obesity. Work family interface originally became of interest to some researchers when women began departing traditional housewife roles and taking on workplace careers, while others such as Melvin Kohn (1969) became interested in how the characteristics of men's jobs affected what they taught their children and Richard Karasek and Tores Theorell (1981) investigated the effects of work stress on men's health. These studies were followed by studies seeking to examine the impact on the household environment caused by a mother's departure. Many studies have examined the workplace impact on marital satisfaction, life satisfaction, and work

family interface conflict, but few investigated the prevalence, predictors and outcomes of work spillover on children's outcomes.

Family meal routines are a common practice among American families and can be an important social activity that may influence children's health. So important that early researchers examined family meal routines as a potential buffer between parental alcoholism and children in the household (Bennett, Wolin, & McAvity, 1988; Bennett, Wolin, Reiss, & Teitlebaum, 1987; Wolin & Bennett, 1984; Wolin, Bennett, Noonan, & Teitlebaum, 1980). At the time of this study, no such studies were found that had examined family meal rituals as a potential buffer of work spillover's effects on children's obesity. Although findings of associations between family meal rituals and obesity have been inconsistent, the recent work of McIntosh et.al. (2009) has provided support that a fathers meal ritual importance is associated with children having the same importance value and better dietary health.

Therefore, there is a need to further examine family meal rituals direct association with children's BMI as well as their possible role as a protective resource against obesity as were found in early studies regarding family meal rituals buffering the effects of alcoholism on children. The present analysis sought to fill that knowledge gap by secondary analysis of a study conducted in a large metropolitan US city in order to examine the associations of work spillover, family meal rituals, parenting styles and children's measures of healthy weight (5th percentile to less than 85th percentile BMI), at risk of overweight (85th to less than the 95th percentile BMI) and overweight (equal to or greater than the 95th percentile BMI) (Kuczmarski et al. 2002). A second and third

study follow this in order to investigate whether family meal rituals and parenting style served as family resources that buffer the effect of work spillover on children's obesity.

Many determinants of children obesity associated with physical activity and eating behavior have been examined (e.g., exercise and food consumption). Less is known about how sociological factors such as parental behaviors, family rituals and parental work conditions (interpersonal, internal household and external household conditions), and children obesity relate to one another. Even so, it is less conclusive how maternal and paternal work demands may be spilling over and affecting children differently. Evidence has shown that family meal rituals have demonstrated a buffering effect between parental alcoholism and home life conditions. Understanding family meal importance and parenting dynamics in relation to work is a trainable family adjustment that requires family awareness and commitment. Thus parents and children may be more willing to commit to eating family dinners if evidence supported good trade off benefits such as improved parent-child relations, health, parenting style practices, and reduced work or family strain.

Since parents play an important role in food consumption and child development, the three studies that will be presented here highlight parenting factors associated with parenting styles, work spillover, and family meal rituals and examined how factors within these domains are related to children's obesity.

### **Study Purpose and Objectives**

Drawing on a sample of 300 families in the Houston Metropolitan Statistical Area, the purpose of this study was to examine associations between maternal and paternal work spillover, family meal rituals, and parenting styles with BMI for children age groups 9-11 and 13-15. Also, to investigate family meal rituals and parenting styles as buffers between work to family spillover and children obesity measures. The study hypotheses included:

- Study 1 – The purpose of this study was to examine associations between maternal and paternal work spillover, family meal rituals, and parenting styles with BMI measurements for children age groups 9-11 and 13-15.
  - Hypothesis 1: Maternal and paternal parents experiencing higher levels of work or family strain were more likely to have children that were overweight or at-risk for overweight status.
  - Hypothesis 2: Maternal and paternal parents reporting higher levels of family meal rituals were less likely to have children that are overweight or at-risk for overweight status.
  - Hypothesis 3: Maternal and paternal parents reporting higher levels watching TV while eating dinner was more likely to have children that were overweight or at-risk for overweight status.
  - Hypothesis 4: Maternal and paternal parents reporting higher levels of controlling parenting style behaviors were more likely to have children that are overweight or at-risk for overweight status.



- Hypothesis 5: Maternal and paternal parents reporting higher levels of nurturing parenting style behaviors were less likely to have children that are overweight or at-risk for overweight status.
- Hypothesis 6: Maternal parents reporting higher levels of permissive parenting style behaviors were more likely to have children that are overweight or at-risk for overweight status.
- Study 2 – The purpose of this study was to examine if family meal ritual importance of parents or children buffer work spillover relations with children obesity or at-risk for overweight.
  - Hypothesis 1: Paternal parents who placed importance on FMR were more likely to have children of healthy weight. Youth that have paternal parents that have a low emphasis on FMR are expected to have more available fast foods and restaurant meals which are higher in calories and fat. Hypothesis 2: Greater levels of maternal and paternal family meal importance will increase the likelihood that meal importance buffers the effect of work spillover on children's overweight or at-risk for overweight.
- Study 3 – The purpose of this study was to examine if parenting styles of parents or children buffer work spillover relations with children obesity or at-risk for overweight.
  - Hypothesis 1: The greater maternal control parenting, the more likely the child engages in poor eating habits and is overweight.

- Hypothesis 2: Maternal and paternal nurturing parenting style will likely buffer the effect of work spillover on children's overweight or at-risk for overweight.
- Hypothesis 3: A controlling maternal and paternal parenting style will be less likely to buffer the effect of work spillover on children's overweight or at-risk for overweight.

### Theoretical Framework

According to Greenhaus & Beutell (1985), work-family conflict occurs when multiple roles place competing demands for participation on a person such that functioning in either work or family role is hampered by the incompatible demands. Role strain occurs as a result of a person's response to the work-family conflict in such a way as to cause a manifestation of overload discomfort or an interference of ability to meet the demands of multiple roles (Voydanoff, 2002). Thus, Voydanoff asserts work-family role strain is an affective consequence of a cognitive assessment of work-family conflict. (p.150).

As did the Jacob et al, 2008 research on work-family conflict, I draw from Brofenbrenner's (1986) ecological systems theory which asserts there are distinct microsystems in each individuals context that affect personal development. The Jacobs et al. study also borrowed from Voydanoff's (2002) application of Bofenbrenner's theory to a work-family research framework. Accordingly, Voydanoff's (2002) explained that work and family are discrete microsystems in which individuals encounter social interaction relationships. According to Jacob et al (2008), the reciprocal influence that work and family have on each other are referred to as the work-family mesosystem

in which the Voydanoff framework is used to propose that both work and family factors may influence the relationship between work and family characteristics, lead to work-family conflict, and affect both family and work outcomes. As was the case with Jacob et al., the purpose of this study is not to test the model, nor examine work outcomes, but to use the framework as a way of selecting hypotheses and variables of interest and organize my results. I also draw on Grzywacz & Bass (2003) elucidation on how family resilience theory explains how family routines and rituals may serve as a protective factor that buffers or eliminates the effects of work-family conflict on outcomes in children.

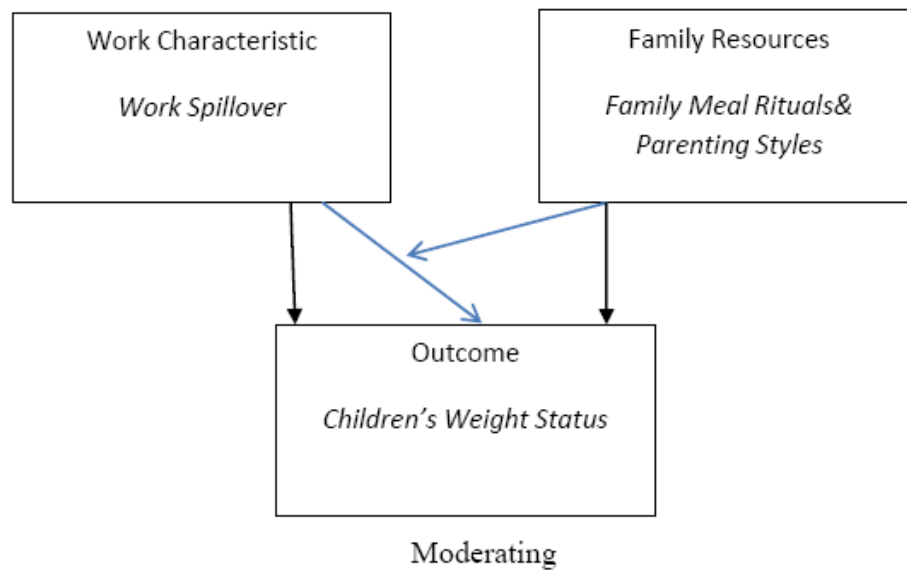
Of particular relevance to this study is how this framework can illuminate how family practices of family meal rituals and parenting style may create protective resource barriers that mitigate work spillover effect on children's weight status. For example, in earlier studies conducted on family meal rituals, Feise et al, (2002) presented some noteworthy findings by Wolin, Bennett that children well-being was lessened when alcoholism was present in the household and families had disrupted family routines. Voydanoff framework gives hope that higher levels of commitment to family meal rituals and parenting styles may offer a buffering effect (See Figure 2).

#### *Parenting Style theory*

The dynamics of parenting styles have been examined in relations to obesity. Studying parenting styles offers some insight on characteristics of a household environment. According to Baumrind (1991), original parenting style dimensions included a parent's demandingness (claims parents make on children to become integrated into the family

whole, disciplinary efforts etc.) and responsiveness,(The extent to which parents intentionally foster individuality, self-regulation by being attuned and supportive to children's special needs and demand). Baumrind later used these dimensions to derive a four-fold classification of parenting behavior that describes how parents reconcile the dual needs of children for nurturance and limit-setting (Authoritative, authoritarian, permissive, and rejecting-neglecting). Nurturing support from a parent is similar to emotional support found in social support literature. Studies have demonstrated that social support can buffer the effects of stress from parents on children health (Sandler, 1989; Quamma & Greenberg, 1994). Therefore, it was expected that maternal or paternal parenting factors involving dimensions of responsiveness might buffer the relationship between work spillover and children obesity.

In Voydanoff's lengthy discussion review on work-family conflict and family-work conflict, no such studies were presented that examined the proposition that a family adaptive strategy of family meal rituals moderate relationships between work-family role strain and outcomes in children. Furthermore, I assert that there is a scarcity of studies examining how work-family adaptive strategies may moderate the relationship between work-family role strain, work-family fit, and family as well as individual outcomes. In this study, I pull from interdisciplinary research as a way of investigating the relationships of parenting, family meal rituals, work spillover and children's BMI outcomes.



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**Figure 2 Relationships between the Work-Family Interface and Outcomes A.**

**SOURCE:** Adopted from Voydanoff (2001).

NOTE: work characteristics could also serve as the moderating variable and family characteristics could be the predictors.

### Significance of Study

Obesity is a problematic area which gives cause for concern in our society attempt to promote positive youth development, health and well-being. This research is unique in that it investigates a combination of external and internal household factors impact on children outcomes that have not yet been examined as yet in combination. In addressing the influence of these multiple components, this research will contribute to work-family theory development and will inform employers, families, nutritionist, family life educators, and health and youth development professional, with insight into the role of work spillover, family meals, and parenting in relationship with children's obesity.

There are aspects of this study that strengthen the significance of contributions from findings in this study:

**First** from a work standpoint theories about work–family spillover (e.g. Elder, 1995; [Moen & Yu (1999)] and [Moen & Yu (2000)] ) claim that high levels of family and job demands contribute to negative spillover, and resources (both at home and at work) promote positive spillover, or at least protect against negative spillover. Where work–family conflict is the outcome, studies have typically been conceptualized in terms of demands and resources (Frone, Yardley, & Markel, 1997; McManus et al., 2002; Roehling & Moen, 2003; Voydanoff, 2004; Altobelli & Moen, 2007). Specifically, we consider the demands of work and resources of family meal rituals and parenting styles available to each spouse at home as predictors of children-level outcomes of obesity.

**Second**, this study looked at maternal and paternal work, parenting, and views about family meals separately. Only a few recent studies have examined father and

mother impacts separately, as many have chosen to limit their study to either the father (Barber 1994; Brotherson et al., 2003) or mother (Govender and Moodley 2004; Heinonen et al., 2003). We have learned that high quality parent/child relationships are in a position to serve as a buffer against the stresses of adolescence (Papini & Roggman 1992 in Bulanda and Majumdar, 2009). In general, study findings have shown that the more time that parents spend with children, the more favorable the outcome in children, such as self-esteem and academic achievement (e.g., Russell and Russell, 1987; Yeung et al., 2001). Finding links to how maternal and paternal work impacts children obesity are thus important for both defending and explaining the impact of mother's and father's work roles.

**Third**, this study has treated different age groups separately: the analysis examined 9-11 year old children and 13-15 year old adolescents separately. The interest here is to tease out differences between children and adolescence. Typically, children under age 15 are not found in such studies involving time diaries; and this is one of only two study's data sets that collected data from the father, mother and child all in the same household. While studies that involve more subjects exist, most do not collect data from 3 family members from the one household.

**Fourth**, the study increases understanding of family meal rituals and parenting styles as a contributor or protective resource. Although researchers have found inconsistent outcome findings between parenting style and family meal rituals with obesity, this study will add to the literature by examining family meal rituals and parenting styles as buffers that lie between work-family spillover and obesity.

## Dissertation Outline

As discussed above, many studies have documented the benefits of parenting, family meal rituals on children's outcomes. We know that physical activities and proper dietary habits are the most promoted solutions in combating obesity, yet despite this valuable knowledge the epidemic has not ceased. This study will address work spillover as a possible contributor to children's obesity. The first study will examine relationships between work spillover, family meal rituals, parenting styles and obesity. The second and third studies will investigate two family internal household resources, family meal rituals and parenting styles, as potential buffers between work spillover and childhood obesity.

Findings from Altobelli and Moen (2007) reported lower demand of work for fathers and family for mothers were characteristics of having enriched pattern of spillover. Therefore, we expected higher levels of work strain for fathers and higher levels of family strain for mothers to be problematic for children BMI. Previous studies have supported that excessive work-related demands on time (Pleck, 1979), structural and psychological interfaces between work and family (Piotrkowski, 1979) can result in occupationally induced family strain (Kelly and Voydanoff, 1985). Findings from this study will contribute an understanding of how work role strain may be related to specific child outcomes. Thus, it is important to move beyond outcomes that work has on employees to examine its impacts on spouses and families, while giving special consideration to outcomes in children. Effects on children have received the least amount of attention in the work to family spillover literature.



To better elucidate the important issues described above, this study undertakes the following three studies:

**The first study** examined associations between work spillover, family meal rituals, parenting styles and children's BMI measures. The BMI measures are strongly recommended by the Center for Disease Control (CDC) and were healthy weight (5th percentile to less than 85th percentile of BMI scores), at risk of overweight (85th to less than the 95th percentile) and overweight (equal to or greater than the 95th percentile) (Kuczmarski et al., 2002).

In addition, independent variables were created and used separately for mothers and fathers in the analyses. Children's perception of family meals was also considered as an independent variable. Principal components analysis (PCA) was run on the items that measure family meal ritual, parenting style and work spillover (Pett et al., 2003). Until recently, little or no studies had studied linkage between work spillover and children's obesity. Previous studies examining family and work tend to focus on job satisfaction, life satisfaction, marital satisfaction and marital or parent/child conflicts (Jacob et al.) Furthermore, recent investigations of mothers work hours and work schedule suggest a link to obesity in children (Miller and Han, 2008; Morrissey et al., 2011). This study will increase our understanding of parental impact on children obesity; and add to a body of work seeking to include fathers, whom have been widely overlooked in investigations of parent-children relations and their effect on adolescent psychological well-being (Videon, 2005; Phares, 1996). Accounting for both parents'

influences on obesity should offer a more comprehensive awareness of potential parental and enhance our understanding of possible differences in maternal and paternal impacts.

**The second study** examined family meal rituals as a buffer between work to family spillover and childhood obesity. Recent studies have demonstrated positive associations between family meal rituals and the outcome variables of obesity, although findings have been inconsistent across studies (Campbell, Crawford, & Ball, 2006; Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Sen, 2006; and Moens, Braet, & Soetens, 2007). In general, a considerable amount of research has investigated the benefit of family routines and rituals on family outcomes (Jacobs et al., 2008). No such research to date, however, has evaluated whether family meal rituals moderates the work-family interface of parental role strain from work on children's health and well-being. The purpose of this study was to investigate family meal rituals as a potential buffer between impacts of work spillover on childhood obesity.

This study attempts to support a body of research that suggests family routines and rituals have positive implications for children development. This study should be of interest to youth, family and health educators and practitioners.

**The third study** examined parenting styles as a buffer between work to family spillover and childhood obesity. Parental influences are known to play an essential role for children physical and psychosocial development (Jackson et al., 2005). Some findings have suggested authoritarian parenting style is most highly associated with obesity and children from authoritative households are less likely to be obese than children from permissive and neglectful parenting styles (Decaluwe et al., 2006). Recent

investigations of mothers work hours and work schedule suggest a link to obesity in children (Miller and Han, 2008; Morrissey et al., 2011). Despite this, there is a paucity of research examining the impact of work on specific children outcomes. No such research to date, however, has evaluated whether parenting styles moderate the work-family interface of parental work spillover from work on children's BMI. The purpose of this study was to investigate parenting styles as a potential buffer between of work spillover on childhood obesity.

This study focuses on finding ways to reduce the impact of work spillover from parents on the development of childhood obesity. Findings could lend support to a national call for interventions aimed at reducing a growing obesity rate among American children and further support training programs on parenting style habits.

CHAPTER II

STUDY 1: AN EXAMINATION OF WORK TO FAMILY SPILLOVER,  
FAMILY MEAL RITUALS AND PARENTING STYLE AND CHILDREN'S  
OUTCOMES OF OBESITY

A societal obesity epidemic is being discussed across health concern journals and in many media outlets (See Table 2.). The effects of childhood obesity are well documented and researchers are now predicting today's generation of children may not outlive their parents if the trend continues. Children have become an important focus of our nation as highlighted by First Lady Michelle Obama's Let's Move campaign. A challenger campaign was presented to encourage all American families to become more physically active and conscious of their diets. Lack of physical activity and proper diets have been targeted as causes of obesity. Two internal household factors, family meal rituals and parenting styles, have previously been examined and reported to have correlations with obesity. Even so, findings have been inconsistent and only a paucity of studies is found. An external factor, work spillover, has been studied in the context of strained parent-child relations but studies have not been extended to examine a possible link to childhood obesity.

Role theory and other theories help elucidate how factors at work and factors at home have connection to outcomes on household members. Early studies of role strain focused primarily on the impact of mothers entering the workplace. Although work

family interface studies have begun to examine both parents, studies that included both maternal and paternal reported relationships on children outcomes remain understudied.

**Table 2 Prevalence of Obesity among U.S. Adolescents Aged 12-19, for Selected Years 1988-1994 through 2007-2008.**

	NHANES 1988-1994	NHANES 1999- 2000	NHANES 2001-2002	NHANES 2003-2004	NHANES 2005-2006	NHANES 2007-2008
<b>Boys, All</b>	11.3	14.8	17.6	18.2	18.2	19.3
<b>Boys, Non-Hispanic white</b>	11.6	11.8	16.6	19.1	15.5	16.7
<b>Boys, Non-Hispanic black</b>	10.7	21.1	16.7	18.4	18.4	19.8
<b>Boys, Mexican American</b>	14.1	27.2	21.8	18.3	25.6	26.8
<b>Girls<sup>1</sup>, All</b>	9.7	14.8	15.7	16.4	17.3	16.8
<b>Girls<sup>1</sup>, Non-Hispanic white</b>	8.9	11.0	13.7	15.4	13.5	14.5
<b>Girls<sup>1</sup>, Non-Hispanic black</b>	16.3	25.2	22.0	25.4	29.8	29.2
<b>Girls<sup>1</sup>, Mexican American</b>	13.4	19.3	20.3	14.1	25.4	17.4

<sup>1</sup> Excludes pregnant females.

NOTE: Obesity defined as body mass index (BMI) greater than or equal to sex- and age-specific 95th percentile from the 2010 CDC Growth Charts.

This study intends to examine relationships between work spillover, family meal rituals, and parenting styles and three children body mass index (BMI) measures.

Therefore, the study focuses on learning more about how paternal and maternal factors may be more or less predictive of childhood obesity. This study extends the work of others seeking to find creative prevention evidence to address childhood obesity. Thus, finding maternal and paternal internal and external household factors contributing to obesity is an important step for advancing prevention and health science education.

### **Literature Review**

A general hypothesis of this study is that the demands of work may spillover into family life and affect paternal and maternal time spent with their children and children's healthy food intake, thus may affect child health and wellness in terms of obesity. Family meals have recently been reported to be associated with healthier dietary intake than eating out at restaurants or fast food outlets (McIntosh et al., 2011). We have previously learned that perceived parenting behaviors predicts nutritional intake and BMI measures of youth (Kim et. al., 2008). Also, more recently that authoritative parenting styles, widely recognized as the more favorable parenting style, has been reported to be less likely associated with obesity than authoritarian (Berge et al., 2010). Thus parenting styles and family meal rituals should be explored as potential family resources or protective factors available within family households to combat against childhood obesity. Such findings could lend support to family consumer science training and build on growing evidence that family meals can promote good health and quality family time.

### The Problem of Obesity

In this study the problematic area of obesity is presented which give cause for concern in our society attempt to promote positive youth development or health and well-being. I looked at the problem from the standpoint of home environment dynamics in conjunction with work outside the home. Physical activity and dietary intake behaviors are e contributing to an obesity epidemic. Researchers have suggested that environmental factors, as well as certain dietary behaviors, affect a child's development and contribute to an increase in weight and risk of becoming overweight (Malecka-Tendera & Mazur, 2006). Environmental factors being researched include family, school, community and mass media. Among these, researchers have pointed to the family, especially parents, as the most influential component affecting a child's eating behaviors and other related food practices (Lavizzo-Mourey, 2009). Yet, little is known about how maternal and paternal work characteristics each contribute to the widespread childhood obesity problem in the United States.

### Work to Family Spillover

Evidence shows, work spillover can have a deleterious effect on parent/child relations. However, we have learned that some families are more resilient than others. We know from previous studies that excessive work-related demands on time (Pleck, 1979), as well as structural and psychological interfaces between work and family (Piotrkowski, 1979) can result in occupationally induced family strain. We further know that many parents experience some form of challenge in coordinating a balance between work and family demands (Friedman, 1987; Hughes '& Galinsky, 1988). On the basis of this,

McIntosh et al. (2006) posited that work committed parents may devote less time, energy, and attention to other family members. Also, work commitment has been attached to increase marital conflict and decrease marital satisfaction (Laedwig and McGee, 1986); in addition committed workers have been found to pay less attention to their children (Walters, Tasker, and Bichard, 2001). Recent investigations of mothers work hours and work schedule suggest a link to obesity in children (Miller and Han, 2008; Morrissey et al., 2011). Fathers have been understudied with less clear finding reported. Voydanoff and Kelly (1984), in writing a review of time shortage as a type of work/family strain, reported the ability to spend time in family activities to be one of the most important resources for coping with time demands. One such opportunity for family time is through family meal rituals.

The early work of researchers focused on role theory and the strained consequences of balancing multiple roles (Staines, 1980). Work-family interface emerged later to focus on conflicts between work and family domains (Kirchmeyer, 1993). Drawing on the work of early researchers addressing the interpersonal conflict of role theory, others have conceptualized work-family conflict as strain-based, behavior-based, and time-based (Carlson et al., 2003; Greenhaus & Beutell, 1985). Altobelli and Moen (2007) elucidate how time-based occurs when time in work or family domain interferes with other domain; stress-based occurs when stressor in one environment causes strain in the other; and lastly behaviors valued in one domain may now be valued in the other domain. As noted in Frone (2003), earlier studies investigated and found positive and negative effects associated with role theory, however recent studies have



leaned toward focusing on negative effects of work and family strain. This study follows that trend.

### Family Meal Ritual

In 1950, seminal authors Brossard and Ball began a body of family meal rituals research by focusing on exploring theoretical findings using a functional approach and later included observation methods ritual studies to understand family process including the effects of alcoholism (Fiese et. al, 2002). On the basis of follow up studies, it was concluded that family rituals may serve as a protective factor between the destructive effects from parental alcoholism on children in the household (Bennett, Wolin, & McAvity, 1988; Bennett, Wolin, Reiss, & Teitlebaum, 1987; Wolin & Bennett, 1984; Wolin, Bennett, Noonan, & Teitlebaum, 1980).

Thereafter, scientist developed a body of work that focused on direct and indirect effects of family routines and rituals on family health and well-being. The work of Boyce et al. (1977) and Fiese et al. (1993) proposed that routines and rituals directly affect family health and well-being. By contrast, the work by Brody and Flor (1997) and Keltner (1990) asserted that family routines may indirectly affect outcomes in children thru the encouraging of good health and well-being of parents. Each approach lends support that family routines and rituals are a part of the larger ecology that can affect family relations and child development processes (Bronfenbrenner & Evans, 2000).

According to a review of over 50 years of research studies conducted by Fiese and colleagues (2002), family meals in the past decade has shown a positive association between family meal frequency and adolescent healthy dietary intake (Berge et al.,

2010); academic success (Fiese, 2000); lower levels of extreme weight control behaviors (Neumark-Sztainer, Wall, Story, & Fulkerson, 2004; Neumark-Sztainer, Eisenberg, Fulkerson, Story & Larson, 2008); better psychosocial health (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Fulkerson, Story, Mellin, Leffer, & Neumark-Sztainer D, 2006); and some evidence of being protective against obesity although findings have been inconsistent across studies (Campbell, Crawford, & Ball, 2006; Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Sen, 2006; and Moens, Braet, & Soetens, 2007). The work of Fiese et al. (2002) and others have asserted that rituals and routines may ease the stress of daily living as individuals and families seek to find balance in the busy demands of home and work. Family meals, and particularly dinnertime, have long been considered an important routine.

### Parenting Style

Recent studies have begun to look at associations between parenting styles and family meals. According to Baumrind (1991), parenting style dimensions include a parent's responsiveness and demandingness. There are four classic parenting styles; authoritative, authoritarian, permissive, and neglectful. Although authoritative parenting is widely considered the parenting style most associated with positive findings, only few studies have examined how factors within the home environments are related to family meal patterns (Berg et al, 2010) A recent study by Berge et al (2010) was conducted to test if parenting styles shapes family meal patterns. Berge et al. went into the study suggesting parenting style may have the potential to influence aspects of adolescent lives such as eating behaviors, physical activities, and ultimately the risk for overweight. Previously,

several cross-sectional studies involving youth had found an association between authoritative parenting style and lower BMIs and healthier dietary intake. Also, authoritarian parenting style had shown a fivefold increase on odds of being overweight. In a 5 year longitudinal study by Berge et al., looking at an association between a home environment factor of parenting style and family meal frequency, findings were able to show authoritative parenting style predicted higher frequency of family meals 5 years later, although only between opposite sex parents parent/adolescent dyads. A previous study by Kim et al (2008) from the present study found that mothers who were predominantly nurturing (authoritative) as compared to controlling were more likely to have adolescents of healthy weight. These recent findings have contributed to an interest in examining social factors that may be related to obesity.

Family meals are currently being examined mostly in context with meal frequency and direct associations with obesity but have not been fully explored as a resource or protective barrier. Although an important causal factor, scientist are now recognizing that our obesity epidemic may be related other social contexts beyond cardiovascular exercise and dietary intake. Moreover, in investigating the role of parental influence consideration should be given to examine paternal and maternal parents separately for evidence of relationships. Such a lack of contextual understanding has recently been highlighted as a problem in McIntosh et al. (2006) and Voyandoff (2002). Each of these groups of researchers underscored the fact that progress in the field is highly unlikely until the mechanism becomes more broadly studied and known. To

resolve this widely recognized problem McIntosh et al. assert that children outcomes of obesity are affected in different ways by father and mother and thus posit:

“that if policy goal or target is to improve children’s intakes and reduce children’s obesity, then multiple policy instruments that work in concert will likely be required – multiple policies that target not only the mother but also the father, and not only at home but also at work... Multiple policy instruments will have to be directed at not only creating an environment that reduces the tension that exists between work and home life for the individual, but also creates an environment where individuals can more easily make tradeoffs and decisions that are beneficial to their children’s intakes and obesity measures (p.105-106).”

I propose here to explore the relationships and interactions between work spillover and children obesity while giving consideration to family meal rituals and parenting styles as resource mechanisms. This will require an approach of examining the direct relationships before exploring mediation or moderation analysis.

To examine relationship, I will test the hypothesis that work spillover is positively associated with children obesity likelihood and perceived family meal ritual importance and nurturing parenting style of maternal and paternal parents are negatively associated with children obesity likelihood.

In conclusion, the body of work reviewed in this section makes clear that there is a need to identify the mechanisms beyond physical activity and diet that contribute to a growing obesity epidemic.

## **Purpose and Hypothesis**

The purpose of this study was to examine associations between maternal and paternal work spillover, family meal rituals, and parenting styles with BMI for children age groups 9-11 and 13-15.

Hypothesis 1: Maternal parents experiencing higher levels of work strain and paternal parents experiencing higher levels of family strain were more likely to have children that were overweight or at-risk for overweight.

Hypothesis 2: Maternal and paternal parents reporting higher levels of family meal rituals were less likely to have children that were overweight or at-risk for overweight.

Hypothesis 3: Children in homes in which maternal parents and children reporting higher levels watching TV while eating dinner was more likely to be overweight or at-risk for overweight.

Hypothesis 4: Maternal and paternal parents reporting higher levels of controlling parenting style behaviors were more likely to have children that were overweight or at-risk for overweight.

Hypothesis 5: Maternal and paternal parents reporting higher levels of nurturing parenting style behaviors were less likely to have children that were overweight or at-risk for overweight.

Hypothesis 6: Children reporting a special family night were more likely to be overweight or at-risk for overweight.

## **Method**

### **Participant Sample**

Random digit dialing was employed to recruit 312 Houston families. The response rate of 48% is equal to or better than that of recent studies of multiple members of families, the rates of which run from 49% to 23% (Hendy et. al, 2009). Participants included both parents (if a father was present in the household) and one child aged either 9–11 or 13–15; an oversample of single-headed households made up 20% of the participating families; however, the non-response rate of children in such households lessened this percentage in the overall sample. The age groups were selected to provide data on both pre- and post-pubertal children; 12-year-olds were thought to be most likely on the cusp between these two groups of children; thus were not included.

### **Procedures/Data Collection and Reduction**

Mothers and fathers responded to a telephone survey which contained questions about work experiences (e.g., hours, standard vs. nonstandard scheduling; flexible work schedule; job stress), perceptions of the family meal, and planning and scheduling of meals. Both mothers and fathers filled out income questionnaires, which were dropped off at their homes at the time of the child interviews. Children underwent a personal interview (about an hour) in which they were asked about how they were parented, perceptions of the family meal, the importance of eating with their family, and the frequency with which they ate with their family. After the questionnaire was finished, children's height and weight were measured (Lohman et al., 1988).

The secondary study was approved by the Institutional Review Board of Texas A&M University. A full review, written consent (adults) and assent (children) were obtained in the original study.

## Measurements

### *Body Measurements and BMI*

Body Measurements including height, weight were collected by trained interviewers following standardized procedures. Measure of body fatness status, BMI, was calculated as body weight in kg divided by height in meters squared (Lee & Nieman, 1996). Each subject's BMI percentile was calculated using the SAS program developed by the Centers for Disease Control and Prevention (CDC 2005). The resulting sex- and age-specific BMI percentiles were used to develop four-dichotomous variables on the basis of CDC guidelines: Underweight (less than the 5th percentile), Healthy weight (5<sup>th</sup> percentile to less than the 85th percentile), At risk of overweight (85th to less than the 95th percentile) and Overweight (equal to or greater than the 95th percentile) (Kuczmarski *et al.*, 2002).

### *Work to Family Spillover*

Work spillover was measured in the parents' telephone interview surveys by a series of questionnaire items based on earlier work by Simon (1992). Each employed parent responded to 7 standard items to measure perception of work/home role strain. For each working parent, these items were subjected to a principal factors factor analysis (Cliff, 1987).

### *Parenting Style*

Children underwent a personal interview in which they were asked about how they were parented. The children's questionnaire also included a 25-item scale developed by Devereux, Broffenbrenner, and Suci (1962) that was used to measure the dimension of parental warmth and involvement that parents have in their children's life, the presence of clear behavioral standards and child involvement in decisions that affect him/her. The questions utilized a Likert 6-point scale. In order to capture as much complexity of parenting behavior as possible, parenting variables were subjected to two types of 'data reduction' techniques: 1) items that were thought to measure each dimension of parenting style (e.g., nurturing; controlling) were grouped; 2) principal components analysis was run on each group of items followed by a second-order principal components analysis for further data reduction as recommended by Gorsuch (1965) and Thurstone (1947).

### *Family Meal Rituals*

Mothers and fathers responded to a telephone survey which captured perceptions of the family meal ritual. In order to measure this, a 13-item scale was developed, drawing on items created by Jensen et al. (1983) and Fiese and Klein (1993). Two questions were added regarding the eating of meals while watching TV under the belief that watching TV during meals with family is antithetical to the idea of a ritual meal or a 'proper family meal.' Because the scale was found to be valid and reliable, it was employed in the larger Houston study. However, based on a reading of Neumark-Sztainer et al. (2000), some additional items were added. These included "in my family, eating together



brings people together in enjoyable ways”; “mealtime is a time for talking with other family members”; “mealtime has often been a time when people argue in my family.” These help capture the at least some notion of the emotional and conflictual dimensions of family meals. All of the items used to measure aspects of the family meal ritual were measured via a 1-to-5 Likert scale. Principal component analysis was used separately for mothers, fathers and children’s responses to these items.

#### *Control Variables*

Parents’ age, parental height and weight (used to calculate their BMI) and mothers’ education was combined with children ethnicity, age and gender from the Parents’ Telephone Survey and Parents’ Self-administered Questionnaire and Children’s Personal Interview Questionnaire. Initial analyses included parents’ income. Neither mothers’ nor fathers’ income was related to children’s BMI; in addition, a considerable number of parents failed to fill out the income questionnaire provided to them. As a consequence, parents’ income was dropped from the analyses after determining its non-significance. Analyses were performed using SAS (version 9.2, SAS Institute, Inc., Chicago, IL, 2008), and relationships were considered statistically significant at the .05 level or less.

#### *Statistical Data Analysis*

##### *Principal Components Analysis*

Principal components analysis was run on the items that measured family meal ritual. Factors with eigenvalues of 1.0 or greater were retained; factor loadings that exceed 0.400 on a given factor were considered as constituents of that factor (Pett et al., 2003). SAS data was used to calculate Cronbach’s alpha with .70 or greater serving as the

standard for acceptable reliability. The author acknowledges a lone exception was made for permissive punishment, because this parenting style has been well represented throughout the literature as an acceptable parenting style (Cronbach  $\alpha = 0.40$ ).

Logistic regression was used to create several models for each dependent variable. The first model contained only the control variables and the second included the control variables and the independent variables. Odds ratios are used to describe the direction and magnitude of the relationship.

## **Results**

### Descriptive Characteristics

Participant's demographic information is summarized in Table 3. The average household income of parents in the study was \$29,900 for mothers and \$83,000 for fathers. The majority of the families in this study were middle-income as defined by as defined by 2009 HHS Poverty Guidelines (SAMHD, 2008; U.S Department of Health and Health Services, 2009).

**Table 3 Demographic Statistics.**

	N	%		N	%
Children			Parent		
<b>Gender</b>			<b>Education level -Mothers</b>		
Male	159	50.9	Some HS	7	2.2
Female	153	49.0	Graduated HS	34	10.7
			Some College	101	31.7
<b>Age</b>			Graduated College	116	36.4
9-11	161	51.6	Some Graduate School	14	4.4
13-15	142	45.5	Completed Graduate School	47	14.7
<b>Ethnicity</b>			<b>Education level -Fathers</b>		
White	222	71.6	Some HS	6	2.4
Black	35	11.3	Graduated HS	26	10.5
Hispanic	40	12.9	Some College	50	20.2
Other	13	4.2	Graduated College	102	41.3
			Some Graduate School	10	4.1
			Completed Graduate School	53	21.5
<b>BMI Weight Status</b>			<b>Ethnicity</b>		
Overweight	56	18.0	White(fathers)	202	81.8
At-risk for Overweight	59	18.9	Non-white (fathers)	45	18.2
Normal Weight	192	61.7	White (mothers)	238	74.8
Below Normal Weight	5	1.6	Non-white (mothers)	80	25.2
			<b>Marital Status</b>		
			Married (fathers)	243	98.4
			Divorced (fathers)	4	1.6
			Married (mothers)	258	80.6
			Divorced (mothers)	34	10.6
			Widowed; separated; or never married (mothers)	28	8.8
			<b>Income Level</b>	Mean	Std Dev
			Mothers	\$29.9k	\$32.4k
			Fathers	\$83.5k	\$54.5k
			<b>Parents Weight Status</b>		
			Fathers BMI	27.57	4.07
			Mothers BMI	26.05	5.86

## Parenting style

The principal components analysis produced 9 factor variables, which were labeled momcare (e.g., she comforts me), momclear (when she punishes me she explains why), momhelps (teaches me things I want to know), mommature1 (encourages me to try things on my own), momcpunish (can't bring herself to punish me), momature2 (worries I can't take care of myself), momcontrol (wants to know exactly where I am going), momshame (punishes by trying to make me feel guilty), and momauthp (prevents me from doing my favorite things). A second order analysis followed and two factors emerged from the principal components analysis of the maternal parenting style behavior items (see Table 4). The first factor resembles parental behaviors of 'nurturing' with all four items having high loadings greater than .600. Items that loaded highest included momcare, momclear, momhelps and mommature1. This factor suggests mothers provide nurturing through emotional and instrumental support while encouraging autonomous growth. Although the mommature item had a low loading (.367) this may suggest there exist an underlining of high expectations within this factor. The second factor resembles parental behaviors of 'controlling' with four items loadings greater than .500. momcontrol loaded highest (.746) and momature2 loaded at .598. The second factor may suggest mothers used controlling and worrying behaviors to protect and insure high expectation of children were being met. Also, those mothers appear willing to use shaming (.568) or withholding of privileges as a way of disciplining (.609). Two items loaded to form a third factor which resembles permissive punishment. Momcpunish loaded high at .821 and momshame loaded moderately at .542. This factor suggests

mothers could be using expressions of hurt as a way of shaming children that they are unable to punish. The variation in dimension between these three factors suggests that mothers in this study tended to be perceived as either nurturing or controlling or permissive in their parenting behaviors.

**Table 4 Results of Factor Analysis of Maternal Parenting Style Behavior Items from Houston Study- Children A.**

	Nurturing	Control	Permissive Punishment
Momcare	.782	.048	-.014
Momclear	<u>.769</u>	.168	.102
Momhelps	<u>.657</u>	.119	-.063
Mommature1	<u>.662</u>	-.139	.290
Mmcpunish	.161	-.157	.821
Mommature2	.367	.597	-.106
Momcontrol	.113	<u>.746</u>	.087
Momshame	-.189	.568	.542
Momauthp,	-.152	.609	-.246
% variance explained =	27.03	18.3	12.15
Cronbach's alpha = .740	.808	.658	.399

Similarly, a second order principal component analysis was done on fathers' first order parenting style factors. Two factors emerged from the principal components analysis of the paternal parenting style behavior items (see table 5). The factor loadings were comparable to the maternal factor loading yielding a 'nurturing' and 'controlling' factors. Four of the five items reflecting the nurturing factor had high loadings (greater

than .700). Those four items included dadcare, dadclear, dadhelps and dadmature1. The remaining item, dadmature2, loaded at .431. These items suggest that dads are perceived as caring and hold high expectations for children. The second factor reflecting controlling had four items loading positively with dadauthp (.718) and dadcontrol (.708) loading > .700. Loading at the lower lever were dadmature2 (.601) and dadshame

**Table 5 Results of Factor Analysis of Paternal Parenting Style Behavior Items from Houston Study- Children A.**

	Nurturing	Control
Dadcare	<u>.798</u>	.036
Dadclear	<u>.745</u>	.164
Dadhelps	<u>.761</u>	.144
Dadmature1	<u>.769</u>	-.184
Dadcpunish	.285	<u>-.416</u>
Dadmature2	<u>.432</u>	<u>.555</u>
Dadcontrol	.239	<u>.708</u>
Dadshame	.059	<u>.601</u>
Dadauthp,	-.076	<u>.718</u>
% variance explained =	31.82	19.75
Cronbach's alpha = .821	.844	.705

(.555). A fifth item dadcpunish loaded negatively (-.417), suggesting that fathers control was antithesis to lack of punishment behaviors. In comparison to mothers, fathers appear less likely to have permissive punishment behaviors.

*Overweight– 9-11 Age Group*

In the age group 9-11, children's gender was significant in the control model only with a finding that males were less likely than females to obese (See Table 6). This finding did not remain significant in the multivariate model. Children eating while watching TV was associated with increased odds of being obese and were almost 3 times (2.7) more likely to be obese than children who reported lower levels of watching TV while eating meals. Mothers eating while watching TV held an inverted relationship with children's obesity. Children were more likely to be obese the lower the levels of mom's watching TV while eating meals. Mom's work strain was associated with increased odds of having obese children (3.1). No father variables reached significant level in neither the control nor multivariate model examining overweight and at-risk for overweight status among age group 9-11 in this study.

*Healthy Weight – 9-11 Age Group*

Dad's BMI ( $p > .01$ ) was the only variable significant in the control model and retained significance in the multivariate model. Dad's BMI was negatively correlated with children's healthy weight finding children were more likely to be normal weight the lower the fathers BMI level. Father's age was associated with children's normal weight, suggesting older fathers were more likely to have children with healthy weight status.

**Table 6 Step 1 Logistic Regression of BMI Measurement Outcome Healthy, At-Risk of Overweight and Overweight (Odds Ratios 95% Confidence Intervals)(Control Model).**

Predictor	Age Group 9-11			Age Group 13-15		
	Healthy (N=130)	At-risk Overweight (N=130)	Overweight (N=130)	Healthy (N=130)	At-risk Overweight (N=109)	Overweight (N=109)
Kid White	2.0 (0.8, 5.1)	.65 (0.2, 1.9)	.79 (24, 2.7)	1.1 (0.4, 3.5)	4.5 (0.8, 24.3)	.25 (0.1, 1.1)
Gender	1.5 (0.7, 3.3)	1.8 (0.7, 4.5)	.27 (.09, .83)*	2.0 (0.8, 4.9)	.49 (0.2, 1.4)	.72 (0.2, 2.6)
Father age	1.0 (1.0, 1.1)	.98 (0.9, 1.1)	.96 (.86, 1.1)	1.0 (0.9, 1.1)	1.1 (1.0, 1.2)	.84 (0.7, 1.1)
Mother age	1.0 (0.9, 1.1)	1.1 (0.9, 1.2)	.88 (.75, 1.0)	1.0 (0.9, 1.2)	.90 (0.8, 1.1)	1.1 (0.9, 1.3)
Mother Ed. Level	1.0 (0.7, 1.4)	1.1 (0.7, 1.7)	.98 (.61, 1.6)	.89 (0.6, 1.3)	.91 (0.6, 1.5)	1.5 (0.9, 2.8)
Mom bmi	1.0 (1.0, 1.0)	1.1 (1.0, 1.2)	.97 (.92, 1.0)	.92 (0.9, 1.0)	1.1 (1.0, 1.2)	1.1 (1.0, 1.2)
Dad bmi	.88 (0.8, 1.0)**	1.1 (1.0, 1.2)	1.1 (.97, 1.2)	.84 (0.7, 0.9)*	1.0 (0.9, 1.2)	1.2 (1.1, 1.4)
Goodness of fit	p < .05*	-0.2714	p < .001***	p < .01**	-0.2144	p < .001***

\*Odds ratio p < .05, goodness of fit p < .05; \*\*odds ratio p < .01, goodness of fit p < .01; \*\*\*odds ratio p < .001, goodness of fit p < .001.

Mother's work strain, as expected, held an inverted relationship with children's healthy weight status in the multivariate model (See Table 7). Mothers who reported higher levels of work strain were less than half as likely to have children of healthy weight compared to mothers who reported lower levels of work strain.

#### *Overweight – 13-15 Age Group*

The control model goodness of fit was highly significant but no variables in the model reached significance. In the multivariate model, both white children and fathers' BMI reached significance at the p < .05 level. Fathers' BMI was associated with 13-15 year olds obesity who were 1.3 times more likely to be obese the higher the level of fathers' BMI measures. White children's (.11) relationship with obesity was inverse and was



almost 90% less likely to be obese than non-white children. Fathers' dinner ritual (.26) was negatively associated with children's obesity. Children whose fathers reported higher levels of importance of dinner rituals were three quarters less likely to be obese in comparison to children whose fathers reported lower levels of dinner ritual importance ( $p < .05$ ). Children were almost three times (2.8) more likely to be obese the higher mothers' controlling parenting style.

#### *Healthy Weight – 13-15 Age Group*

Dads' BMI ( $p > .05$ ) was the only variable significant in the control model and retained significance in the multivariate model. Both mom BMI (.90) and dad BMI (.83) were significant and held inverted relationships with children's healthy weight among 13-15 year old in the multivariate model. Mothers' control was significant ( $p < .001$ ) and negatively related to children's healthy weight. Children were a little over half as likely to be of healthy weight the more their mothers were perceived as having a controlling parenting style.

#### *At-Risk of Overweight – 9-11 and 13-15 Age Group*

The At-risk of overweight control or multivariate models contained no significant independent variables for either age group 9-11 nor age group 13-15, and thus no findings are reported.

**Table 7 Step 2 Logistic Regression of BMI Measurement Outcomes Healthy, At-Risk of Overweight and Overweight (Odds Ratios, 95% Confidence Intervals) (Control + Multivariate).**

Predictor	Age Group 9-11			Age Group 13-15		
	Healthy (N=87)	At-risk Overweight (N=123)	Overweight (N=86)	Healthy (N=109)	At-risk Overweight (N=105)	Overweight (N=102)
Kid White	1.7 (0.5, 5.9)	.67 (0.2, 2.3)	.56 (0.1, 3.0)	1.4 (0.4, 4.6)	6.1 (1.0, 38.1)	.11 (0.0, 0.7)*
Gender	2.9 (0.9, 9.5)	1.3 (0.5, 3.7)	.23 (0.1, 1.1)	2.1 (0.8, 5.6)	.49 (0.2, 1.6)	.26 (0.0, 1.7)
Father age	1.1 (1.0, 1.3)*	.97 (0.8, 1.1)	.98 (0.8, 1.1)	.99 (0.9, 1.1)	1.1 (0.9, 1.2)	.87 (0.6, 1.2)
Mother age	.95 (0.8, 1.1)	1.1 (0.9, 1.3)	.86 (0.7, 1.1)	1.0 (0.9, 1.2)	.90 (0.7, 1.1)	1.1 (0.8, 1.4)
Mother Ed.	1.4 (0.8, 2.4)	.94 (0.6, 1.5))	.88 (0.4, 1.7)	.82 (0.5, 1.3)	.99 (0.6, 1.7)	2.2 (1.0, 4.8)
Mom bmi	1.0 (1.0, 1.1)	1.1 (1.0, 1.2)	.95 (0.8, 1.1)	.90 (0.8, 1.0)*	1.1 (0.9, 1.2)	1.1 (1.0, 1.3)
Dad bmi	.79 (0.2, 0.8)**	1.1 (1.0, 1.3)	1.1 (0.9, 1.3)	.83 (0.7, 0.9)**	1.0 (0.9, 1.2)	1.3 (1.0, 1.5)*
Mom work strain	.39 (0.9, 1.6)**		3.1 (1.2, 7.8) **			
Children eating while watching TV			2.7 (1.1, 6.9)*			
Mother eating while watching TV	1.9 (1.0, 3.6)		.33 (.13, .82)*			
Mother dinner ritual	1.7 (1.0, 2.9)	.65 (0.4, 1.1)				2.2 (0.8, 6.1)
Father dinner ritual					1.5 (0.9, 2.6)	.26 (0.1, 0.8)*
Mom control		.87 (0.5, 1.5)		.43 (0.3, 0.7)***		2.8 (1.2, 6.5)*
Dad family strain		1.6 (1.0, 2.6)				
Children special family night					1.6 (0.8, 3.2)	
Dad nurturing					1.1 (0.6, 2.3)	
Dad control					1.6 (0.9, 3.1)	
Mom nurturing	80 (0.4, 1.5)					
Goodness of fit	p < .001***	(.0608)	p < .001***	p < .0001***	(.1281)	p < .001***

95% confidence interval (CI) refers to being 95% confident that the interval contains the population percentage.

\*Odds ratio  $p < .05$ , goodness of fit  $p < .05$ ; \*\*odds ratio  $p < .01$ , goodness of fit  $p < .01$ ; \*\*\*odds ratio  $p < .001$ , goodness of fit  $p < .001$ .

<sup>a</sup>. (List dummy coded and explained such that the reference group is and each coefficient represents a contrast with the reference group (e.g. Ethnicity is dummy coded such that the reference group is European Americans and each coefficient represents a contrast with the reference group)

<sup>b</sup> Adjusted odds ratios are based on multivariate logistic regression tests that control for other demographic characteristics, kids gender, parents age, mothers income, etc.. Only relationships significant at the bivariate level were examined in multivariate analyses. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

## **Discussion**

In reviewing the age group 9-12 year olds, there were no significant associations between paternal independent variables and children outcomes of healthy (normal), at-risk of overweight or overweight outcomes. Results for maternal variables indicate that mothers' work strain was positively associated children's overweight. Children were 3.1 times more likely to be overweight if their mothers experienced high levels of work strain.

This finding partially supports the recent work of Miller and Hans (2008) which reported a link between mothers non-standard work hours and children obesity. Both studies found an association between a mother's work commitments spilling over into the home environment to affect children's weight.

Similarly, mothers work strain exhibited an inverse relationship with children's healthy weight status, suggesting mothers who reported higher levels of work strain were less than half as likely (.39) to have children of healthy weight compared to mothers who reported lower levels of work strain.

Children were two-thirds more likely to be overweight when mothers reported lower levels of eating while watching TV among age group 9-11 children. This was a surprise finding that goes against a body of research which associate watching with negative outcomes. Although recently study findings narrowed the association between TV watching and children obesity to the influence of commercials advertising of unhealthy food choices, citing eating in front of the TV in and of itself was not related to obesity. This suggests that when mothers are watching TV, the content of commercials

advertisement marketing unhealthy food choices may be limited by the mothers' presence. Also, it is possible that TV watching was not popular within this sample of middle class parents. Even so, studies have shown television viewing to be associated with obesity in both cross-sectional and longitudinal data among adolescent youth (Andersen et al, 1998; Lowry, 2002; and Rey-Lopez, 2008) and was further supported in this study by a significant finding of children eating while watching TV being positively associated with overweight and children 2.7 were times more likely to be overweight than children who reported lower levels of watching TV while eating. In examining the 13-15 year old age group, mothers parenting style behavior of controlling was negatively associated with children at a healthy weight status. Children were a little under half (.43) as likely to be at a healthy weight the more their mom was perceived as having a controlling parenting style. This finding was complimented by a significant positive association of maternal controlling parenting style behavior and children being more likely to be overweight. Children were 2.8 times more likely to be overweight the higher the reported perceived maternal parents' controlling parenting style. Collectively, the two significant outcomes from this study support a body of work that suggests children of authoritarian parents are more likely to be obese (Decaluwe et al., 2006). McIntosh suggests children may feel freer to eat when they are away from parents who attempt to control food intake and thus eat less healthy outside the presence of parents. When we take into consideration the maternal work strain finding in this study with maternal control parenting style, we begin to see a pattern of a work to family spillover mechanism associated with maternal parents and not paternal. Feminist may argue that

settled family traditions continue to burden a disproportionate share of home responsibilities on mothers who work than fathers who work. Some may argue that work strain may transfer from mothers onto the children and controlling parenting in the answer to less time. This hypothesis is grounded in an explanation that as parents become strained by work roles and time shortage, they become more likely to present polar parenting behaviors of either high demandingness or low demandingness and thus lack the balance found in authoritative parenting (Law, 2007).

Fathers' dinner ritual was the only paternal factor to reach significance from the independent variables in the multivariate model. Father's dinner ritual was negatively associated with children's obesity. Children of fathers who higher levels of importance gave to dinner rituals were three quarters less likely to be obese in comparison to fathers with lower levels of dinner ritual importance. Findings support the recent work of McIntosh et al. (2011), which found negative relationship between fathers' family meal importance and the amount of time children spent in fast food restaurants. In addition, when fathers placed greater importance on eating family meals as a ritual, children were more likely to place similar importance on eating dinner with family. These findings highlight the importance of examining maternal and paternal influences both separate and combined with conducting family studies (Williams and Kelly, 2005).

Parenting programs should include training that promotes the important role that fathers play in family dinner meal rituals and obesity reduction in children. Furthermore, meal preparation support by fathers and children may reduce the effects of mothers work to family spillover. More family assistance may reduce guilt, ease time conflicts and

provide a supportive family ritual opportunity that has been associated with numerous positive outcomes in children. A promotion of fathers' family dinner meal importance could have positive implications for the importance children place on home cooked meals and families' commitment to the preparation of healthier meals. Family meal rituals (internal family resource) appear supportive of reducing mothers' work role strain (external family demand) by the family (within household control) as a resource rather than relying on work adjustments (outside household control).

The fact that work to family spillover did not predict healthy, at-risk, or overweight status for children in the 13-15 year age group, may not be surprising to many observers. Adolescents in this age group would be expected to be more independent of parents and family meals. Adolescents at this stage are likely to be afforded more freedom with selecting home meals or meals eaten away from home. Also, this age group is usually familiar with low-challenge meal preparation or warming up foods such as hot dogs, hamburgers, grilled cheese sandwiches, chili cheese nachos, tortillas, and other teen favorites found at concession stands and as cafeteria alternatives to the main dishes. When role strain is present, mothers are possibly more likely to say to an adolescent 13-15, "go find something to eat for yourself?" Turning to the interaction model in which parents with higher work spillover and children with higher importance given to a special family food night had a greater probability of being overweight, this finding likely supports the finding of Walters et al. (2001), indicating that committed workers tend to pay less attention to their children. Thus mothers who experience high work to family spillover may find themselves, when stressed, giving

less attention to their children which leads to the provision of pizza or fast food as a means of assuaging their guilt or telling their children to feed themselves.

In an earlier study by Small and Riley (1990), which examined the impact of work spillover in general and four family roles on spouse perception of their executive spouse relationship with children, marital satisfaction and contribution to household chores, work spillover in general was related to the spouse's greater dissatisfaction with her husband's contribution to household chores. Despite increased numbers for mothers into the workplace, statistics from the Bureau of Labor suggest that traditional household chores for women have not declined or become shared by their spouses. On average, women spend a total of 2.14 hours per day on total household activities compared to men who spend 1.42 hours (Bureau of Labor Statistics, 2012). Examined more closely, with the exception of lawn and garden care and exterior maintenance repair, and decoration among activities involving a minimum of .09 of an hour, women exceed involvement in every other category of housework. Among these categories, women spend on average 1.67 hours preparing food and cleaning up after meals compared to .58 for men. Although there were positive correlations between father's family strain and children being at-risk for overweight status in this study, only mother's work strain was significant when other family household variables were included in the full model. This begs the question, where are mothers going to find relief in their challenge to balance work-family interface and the important chores of meal planning and preparation. Prior studies suggest fathers and mother perceive fairness of household chores differently. Previous research have reported women perceive equity primarily by focusing on

domestic household duties, while men contrastingly hold a more global view which include a lumping together of all family tasks, including paid work and additional responsibilities (Lavee & Katz, 2002; Coltrane, 2000; Voydanoff & Donnelly, 1999; Wilkie et al., 1998). A good part of work to family spillover has focused on marital satisfaction. According to Lavee and Katz, (2002), the perception that the division of work is personally unfair leads to a lower level of perceived marital quality for both men and women.

In the present study, fathers' family dinner ritual importance was negatively correlated with overweight status for children 13-15. McIntosh et al. (2011) found when fathers placed importance on family meal rituals it had nutritional intake benefits for children and children were more likely to perceive family meal ritual importance. Finding present an argument that when fathers assert, "we are going to have family meal rituals" it prevents children from going out to "have it their way", "deserve a break from family meals today" or "run for the boarder" get a quicker meal. When fathers hold their ground, this reduces fast food and restaurant dining. Therefore, I can't over emphasize the importance of prevention materials adding to or emphasizing the importance of fathers placing importance on family meals at home and for fathers to become more engaged in domestic household work. We lack the availability of traditional home-economic courses that previously taught both men and women domestic responsibilities. Similar courses may need reintroduction into a society that is moving closer toward gender equality to help enhance not only the domestic skills of male and female



adolescents, but also the teaching of work-to-family balance skills before adolescents become young adults.

### CHAPTER III

#### STUDY 2: AN EXAMINATION OF FAMILY MEAL RITUALS AS A BUFFER BETWEEN WORK SPILLOVER AND CHILDREN'S OUTCOME OF OBESITY

The continuation of high rates of obesity among children over the past two decades is an issue of critical importance not only for current youth health improvement, but also a prevention science concern for an epidemic that has the potential to contribute to an earlier morbidity rate for future American adults. Independent of adult weight, adolescent overweight has been found to be associated with adulthood morbidity such as colorectal cancer and gout for men and arthritis in women (Must, Jacques, Dallal, Bajema, & Dietz, 1992). An increasing prevalence in childhood obesity over three decades coincides with a trend of increased participation by mothers with children in the workforce in this country as shown in Table 8 (BLS, 2010).

Largely ignored are examinations of interrelations among family life and work life interactions and possible influences of their interactions on childhood obesity. This is of particular interest when evidence suggests a positive correlation between family meal importance and normal weight status (McIntosh, Davis, Nayga, Anding, Torres, Kubena, Perusqula, Yeley, and Yo, 2006). Work to family spillover is an influence that crosses the boundaries between work and family and produces both positive and negative effects and can originate from either work or family domains. Family meal rituals can be viewed as an opportunity for quality family time and positive behavior monitoring (Fiese, 2006).

**Table 8. Employment Status of Women by Presence and Age of Youngest Child March 1975 - 2010 (Numbers in Thousands).**

Year	Employment with Children	Employment with children	Prevalence of obesity
	under age 18	under age 6	age 2 - 19
1975	47.40%	39.00%	5.0% (1971-74)
1985	62.10%	53.50%	5.5% (1976-80)
1995	69.70%	62.30%	10.0% (1988-94)
2005	70.50%	62.60%	15.5% (2005-06)
2010	71.30%	64.20%	16.9% (2007-2008)

Percentage represents the percent of women in that category that were participants in the work force.

Recent efforts have been exerted to study how dietary intake, parenting style, and meal importance factors are contributing to youth obesity and weight status (McIntosh & others)) but did not extend to examine a connection between both maternal and paternal work spillover on childhood obesity. Also, work-family conflict research has typically focused on how individuals and families manipulate employment and family demands (Hansen, 1991; Menaghan & Parcel, 1990). However, no such studies have examined family meal rituals as a potential buffer between the impacts of work spillover on children outcomes of obesity. There is a paucity of such specificity. Although controlling nutritional dietary habits is another way of addressing obesity, recent studies have shown that factors beyond dietary habits affect how and what we eat (McIntosh, Kubena, Tolle, Dean, Kim, Jan & Anding, 2011). Therefore, it is important for studies to move beyond diet control if we are to tackle a growing epidemic of obesity in America. While the importance of eating healthy and remaining physically active is strong

arguments for obesity prevention, there is a growing need to look beyond causal factors and examine alternative factors that may reduce the chances of children illnesses associated with obesity.

In this study, I investigated the interrelations among work spillover and family meal rituals to measurements of overweight, at-risk for overweight and children with healthy body mass index (BMI) status. Thus, the significance of this study is that it sought to address the influence of multiple components that contribute to work-family theory development and will inform, family life educators, and health and youth development professional, with insight into the role of work spillover, and family meals, in relationship with children's obesity.

### **Literature Review**

A body of literature suggests families draw on their resources as a means of being resilient. According to Patterson (2002), family resilience theory suggests in the face of heightened risk, a family's resources or capabilities can allow that family to prosper in midst of adversity. , The work of earlier scientist findings that family meal ritual served as a protective factor between the destructive effects from parental alcoholism on children in the household offered hope as a family resource. (Bennett, Wolin, & McAvity, 1988; Bennett, Wolin, Reiss, & Teitlebaum, 1987; Wolin & Bennett, 1984; Wolin, Bennett, Noonan, & Teitlebaum, 1980).

Prior research indicates that the time mothers invest in cooking or in activities with their children reduces children's risk of overweight (You, 2005). By contrast, we have learn that time entailed by maternal employment potentially increases the risk of

obesity in children (Miller and Han, 2008; Morrissey et al., 2011). Family meals studies have provided some recent evidence of being protective against obesity, although these studies are inconsistent (Campbell, Crawford, & Ball, 2006; Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Sen, 2006; and Moens, Braet, & Soetens, 2007).

Earlier studies have looked at associations between mothers work and children's well-being. According to Frone (2003) increased entry of women with children into the workplace drew the attention of earlier researchers that sought to examine associations between maternal work and children well-being. The recent research of Miller and Hans (2008) extended to include children obesity and findings supported a link between mothers non-standard work hours and children obesity. A general thesis has been that non-standard work hours may equate to a greater reliance on fast food by adolescents or increased sedentary activities, such as watching television by children (Leibowitz, 2005). In contrast, family meals have recently been reported to be associated with healthier dietary intake than eating out at restaurants or fast food outlets (McIntosh et al., 2006).

#### Family Routines, Rituals and Outcomes

Fiese, Foley & Spagnola (2006), provide a distinction between family meal routines and rituals as the former being "typically directly observable" and the later "more closely linked to symbolic aspects of family life." The benefits of family meal rituals have been shown to be associated with better nutritional intake and lower levels of obesity rates in children (McIntosh et al., 2006). Findings suggest that such meals promote healthier eating among children and adolescents in the form of (1) greater fruit and vegetable consumption and (2) less soft drink consumption (McIntosh et al., 2010); family meals

to be associated with greater intake of grains, vegetables and fruit and lower intake of fried foods and soft drinks (Woodruff and Hanning, 2008); less disordered eating (Neumark-Sztainer, 2006); linked family meal participation and psychological well-being (less depression; higher self-esteem; less suicidal ideation) and lower proneness to engage in delinquent activities (lower likelihood of smoking, drinking alcohol, using marijuana) (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004).

We have further benefited from a body of literature examining family meal frequency. Research on family meals in the past decade has shown a positive association between family meal frequency and adolescent healthy dietary intake (Berge et al., 2010); academic success (Fiese, 2000); lower levels of extreme weight control behaviors (Neumark-Sztainer, Wall, Story, & Fulkerson, 2004; Neumark-Sztainer, Eisenberg, Fulkerson, Story & Larson, 2008); and better psychosocial health (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Fulkerson, Story, Mellin, Leffer, & Neumark-Sztainer D, 2006). There exists a body of work that has focused on direct and indirect effects of family routines and rituals on family health and well-being. The work of Boyce et al. (1977) and Fiese et al. (1993) proposed that routines and rituals directly affect family health and well-being. By contrast, the work by Brody and Flor (1997) and Keltner (1990) asserted that family routines may indirectly affect outcomes in children by through the increasing of healthy behavior and well-being of parents. Each approach lends support that family routines and rituals are a part of the larger ecology that can affect family relations and child development processes (Bronfenbrenner & Evans, 2000). Even so, little is known about familial factors associated with family meals in the

home of adolescents and less is known about factors outside the household that are constraints to family meals.

Fiese (2006) posits that family meal routine continuity may garner its effects on children's well-being by allowing parents to provide reinforcement of family roles and present opportunities to influence academic performance, peer relationships, and planning for future events. Fiese argues it is the linkage of parental monitoring and positive child outcomes that suggest mealtime may be one setting where family role identities are endorsed. Still others would argue that there are also downsides to family rituals, such as the time and effort put into preparations (Meske et al., 1994), unpleasant childhood memories of family meals (Lupton, 1994) and the possibility of drawing out family conflict (Leach & Braithwaite, 1996).

#### Eating While Watching TV

According to the CDC (2010) TV viewing is listed as a contributing factor to childhood obesity because it potentially impedes the time children spend in physical activities; contributes to increased calorie intake through snacking and eating meals in front of the TV; and, exposes children to food advertisements that often encourages children to make unhealthy food choices (CDC, 2010). Watching TV while eating meals may diminish the positive effects of family meals because this deters conversation. Work to family spillover may increase the likelihood of family members eating dinner watching TV. While understanding the predictability of work stress and family meals on children outcomes are important, it is also important that we understand what factors may be moderating the impact of work spillover on children's outcomes. Thus finding factors

that protect against the potential impact of work spilling over into the home domain is important for maintaining household environments where children can thrive.

### **Purpose and Hypothesis**

The purpose of this study was to examine whether family meal rituals act as a buffer between work spillover and children obesity and to test the model for an interaction effect (See Figure1). This study intends to expand the work of early family routine researchers who found support for family meals serving as a buffer between a parental alcoholism and household children by examining family meal rituals as a buffer between work to family spillover and obesity in children. Given the evidence just reviewed, I hypothesized that family meal rituals factors will act as a family resource and moderate the positive relationship between mothers work strain and children BMI overweight status.

### **Theoretical Perspective**

To explore such reasons, multiple sociology theories (role strain, work-family conflict, family resilience and ecological systems theory) were drawn from to drive the perspective of the present study. The early work of researchers focused on role theory and the strained consequences of balancing multiple roles (Staines, 1980). Work-family interface emerged later to focus on conflicts between work and family domains (Kirchmeyer, 1993). Drawing on the work of early researchers addressing the interpersonal conflict of role theory, others have conceptualized work-family conflict as strain-based, behavior-based, and time-based (Carlson et al., 2003; Greenhaus & Beutell, 1985). Altobelli and Moen (2007) elucidate how time-based occurs when time at work

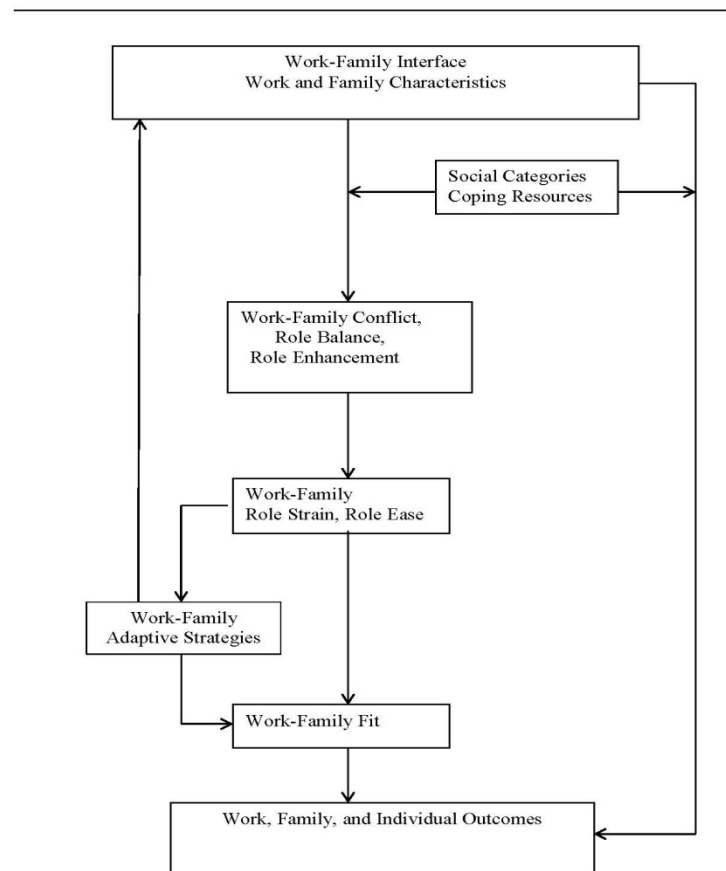


or in the family domain interferes with other domain; stress-based occurs when stressor in one environment causes strain in the other; and lastly behaviors valued in one domain may now be valued in the other domain.

According to Greehaus & Beutell (1985), work-family conflict occurs when inter-roles place competing demands for participation on a person such that functioning in either work or family role is hampered by the incompatible demands. Role strain occurs as a result of a person's response to the work-family conflict in such a way as to cause a manifestation of overload discomfort or an interference of ability to meet the demands of multiple roles (Voydanoff, 2002). Thus, Voydanoff asserts work-family role strain is an affective consequence of a cognitive assessment of work-family conflict. (p. 150).

Work-family conflict research draws from ecological systems theory (Jacob et al, 2008). Bronfenbrenner's (1986) ecological systems theory asserts there are distinct Microsystems in each individual's context that affect personal development. Voydanoff's (2002) applied Bronfenbrenner's ecological systems theory to a work-family research framework. Accordingly, Voydanoff's (2002) explained that work and family are discrete Microsystems in which individuals encounter social interaction relationships. According to Jacob et al (2008), the reciprocal influence that work and family have on each other are referred to as the work-family mesosystem in which Voydanoff's framework proposes that family factors may influence the relationship between work and family characteristics, work-family conflict and both family and work outcomes (See Figure 3). Of particular relevance to this study is how this framework can

illuminate how family practices of family meal rituals and parenting style may create protective resource barriers that mitigate work spillover effect on children weight measures.



**Figure 3 The Conceptual Model.**  
SOURCE: Voydanoff (2002).

## **Method**

### **Participant Sample**

Random digit dialing was employed to recruit 312 Houston families. This response rate is equal to or better than that of recent studies of multiple members of families, the rates of which run from 49% to 23% (Hendy et. al, 2009). Participants included both parents (if a father was present in the household) and one child aged either 9–11 or 13–15; an oversample of single-headed households made up 20% of the participating families; however, the nonresponse rate of children lessened this percentage in the overall sample. The age groups were selected to provide data on both pre- and post-pubertal children; 12-year-olds were thought to be most likely on the cusp between pre-puberty and puberty; thus were not included.

### **Procedures/Data Collection and Reduction**

Mothers and fathers responded to a telephone survey which contained questions about work to family spillover experiences (e.g., hours, standard vs. nonstandard scheduling; flexible work schedule; job stress), perceptions of the family meal, and concerns about their child's eating habits. Both mothers and fathers filled out income questionnaires, dropped off at their homes at the time of the child interviews. Children underwent a personal interview (about an hour) in which they were asked about how they were parented, perceptions of the family meal, the importance of eating with their family, and the frequency with which they ate with their family. After the questionnaire was finished, children's height and weight were measured (Lohman et. al.. 1988).

The secondary study was approved by the Institutional Review Board of Texas A&M University. A full review, written consent (adults) and assent (children) were obtained in the original study.

## Measurements

### *Body Measurements and BMI*

Height, weight, waist circumference and triceps skinfold and sub-scapular skinfold thickness was obtained by trained interviewers following standardized procedures. In addition, as another measure of body fatness status, BMI was calculated as body weight in kg divided by height in meters squared (Lee & Nieman, 1996). Each subject's BMI percentile was calculated using the SAS program developed by the Centers for Disease Control and Prevention (CDC, 2005). The resulting sex- and age-specific BMI percentiles were used to develop four-dichotomous variables on the basis of CDC guidelines: Underweight (less than the 5th percentile), Healthy weight (5th percentile to less than the 85th percentile), At risk of overweight (85th to less than the 95th percentile) and Overweight (equal to or greater than the 95th percentile) (Kuczmarski et al., 2002).

### *Work to Family Spillover*

Attention and psychological energy represent additional factors in caring for children. These were reflected in the degree to which parents found that their work demands spilled over onto the family, the degree to which their work was stressful, and the degree to which they were committed to their work, the degree to which they had job flexibility. Work spillover was measured in the parents' telephone interview surveys by a series of

questionnaire items based on earlier work by Simon (1992). Each employed parent responded to 7 standard items to measure perception of work/home role strain which included “I experience conflicts between my work responsibilities and my family responsibilities”; “I am able to give my children the attention they need”; “I sometimes miss out on the pleasures of being a parent.” For each working parent, these items were subjected to a principal factors factor analysis (Cliff, 1987). For each parent, two factors of work role strain and home role strain resulted from this analysis. Loadings on these factors were moderately high and positive. Work role strain is explaining work interface from spillover and home strain is explaining home interface from spillover. The factor for the fathers and the factor for the mothers should be interpreted as follows: a high score on a work to family spillover factor means that the parent in question is more likely to experience work to family spillover.

#### *Family Meal Rituals*

The telephone survey also captured perceptions of the family meal ritual. In order to measure this, a 13-item scale was developed in a pilot study conducted in Rogers and Holland, Texas 1996, drawing on items created by Jensen et al. (1983) and Fiese and Klein (1993). Two questions were added regarding the eating of meals while watching TV under the belief that watching TV during meals with family is antithetical to the idea of a ritual meal or a ‘proper family meal.’ Because the scale was found to be valid and reliable, it was employed in the larger Houston study. Subsequently, based on a reading of Neumark-Sztainer et al. (2000), some additional items were added. These included “in my family, eating together brings people together in enjoyable ways”; “mealtime is a

time for talking with other family members”; “mealtime has often been a time when people argue in my family.” These help capture the at least some notion of the emotional and conflictual dimensions of family meals. All of the items used to measure aspects of the family meal ritual were measured via a 1-to-5 Likert scale. Principal component analysis was used for mothers, fathers and children. Four factors emerged from the principal components analysis of the family meal ritual items for mothers; dinner is family ritual, meals eaten watching TV, special lunch/family breakfast together and special family food night (Cronbach  $\alpha = 0.76$ ). For fathers, three factors emerged; dinner is family ritual, meals eaten watching TV and special family food night (Cronbach  $\alpha = 0.82$ ). Lastly, children factors yielded four factors; dinner is family ritual, special, special food night/Sunday ritual, eat meals while watching TV and eat breakfast together/tasked at diner (Cronbach  $\alpha = 0.75$ ). Cronbach’s alpha procedure in SAS was used and output was reported based on standardized variables.

#### *Control Variables*

Parents’ age, BMI measures and mothers education were combined with children ethnicity and gender as constructed from the Parents’ Telephone Survey and Parents’ Self-administered Questionnaire and children personal interview questionnaire.

Principal components analysis was run on the items that measured family meal ritual. Factors with eigenvalues of 1.0 or greater were retained; factor loadings that exceed 0.400 on a given factor were considered as constituents of that factor (Pett et al., 2003). SAS data was used to Cronbach’s alpha with .70 or greater serving as the standard for acceptable reliability. The author acknowledges a lone exception was made

for permissive punishment, because this parenting style has been well represented throughout the literature as an acceptable parenting style (Cronbach  $\alpha = 0.40$ ).

Logistic regression is used in this thesis to analyze the likelihood or odds of a child being, for example, at risk of overweight or not, given the family tends to have a high score on a family meal ritual variable.

Logistic regression was used in the multivariate analysis of whether children BMI weight status measured as healthy weight (5th percentile to less than 85th percentile), at risk of overweight (85th to less than the 95th percentile) or Overweight (equal to or greater than the 95th percentile) (Kuczmarski et al., 2002). Control variables included children's sex, race/ ethnicity, and age group. Initial analyses included parents' income. Mothers and fathers income were not related to children BMI, and a considerable number of parents failed to fill out the income questionnaire provided to them. As a consequence, parents' income was dropped from the analyses. Two models were run for each dependent variable, the first contained work to family spillover and a family meal ritual variable plus controls and the second contained the same variable found in the first model plus and interaction term for the interaction between work to family spillover and family meal rituals. Analyses were performed using SAS (version 9.2, SAS Institute, Inc., Chicago, IL, 2008), and relationships were considered statistically significant at the .05 level or less.

**Table 9 Demographic Information.**

	N	%		N	%
Children			Parent		
<b>Gender</b>			<b>Education level -Mothers</b>		
Male	159	50.9	Some HS	7	2.2
Female	153	49.0	Graduated HS	34	10.7
			Some College	101	31.7
<b>Age</b>			Graduated College	116	36.4
9-11	161	51.6	Some Graduate School	14	4.4
13-15	142	45.5	Completed Graduate School	47	14.7
<b>Ethnicity</b>			<b>Education level -Fathers</b>		
White	222	71.6	Some HS	6	2.4
Black	35	11.3	Graduated HS	26	10.5
Hispanic	40	12.9	Some College	50	20.2
Other	13	4.2	Graduated College	102	41.3
			Some Graduate School	10	4.1
			Completed Graduate School	53	21.5
<b>BMI Weight Status</b>			<b>Ethnicity</b>		
Overweight	56	18.0	White(fathers)	202	81.8
At-risk for Overweight	59	18.9	Non-white (fathers)	45	18.2
Normal Weight	192	61.7	White (mothers)	238	74.8
Below Normal Weight	5	1.6	Non-white (mothers)	80	25.2
			<b>Marital Status</b>		
			Married (fathers)	243	98.4
			Divorced (fathers)	4	1.6
			Married (mothers)	258	80.6
			Divorced (mothers)	34	10.6
			Widowed; separated; or never married (mothers)	28	8.8
			<b>Income Level</b>	Mean	Std Dev
			Mothers	\$29.9k	\$32.4k
			Fathers	\$83.5k	\$54.5k
			<b>Parents Weight Status</b>		
			Fathers BMI	27.57	4.07
			Mothers BMI	26.05	5.86



## Results

The majority of participants in the study were categorized in the healthy weight status (n=192) and closely even number of *Overweight* (n=56) and *At-risk for overweight* (n=59) children. There were a minimum number of Below *Healthy Weight* children and thus were withheld from data analysis. Other demographic information is displayed in Table 9 above.

### Overweight Children 9-12 and 13-15

Among children 9-11, children were .33 times as likely to be obese the higher mothers levels of watching TV while eating., *Mothers eating while watching TV* was tested in the model for moderation effect between *mothers work strain* and children with *overweight* status. *Mothers eating while watching TV* and *mothers work strain* remained significant among *overweight* children age group 9-11. Mothers who reported higher levels of work strain were less than half as likely to have children of normal weight compared to mothers who reported lower levels of work strain (.39\*\*). Also, *mothers work strain* was associated with increased odds of having obese children (3.1\*\*) for children in age group 9-11.

However, the F-test was not significant in either model examining moderation since *the interaction term* was not significant effect (See Table 10.). The model for the age group 13-15 did not have a significant moderation.

Next, the same moderation model was run testing *children eating while watching TV* in the model for moderation effect between and *mothers work strain* and children (9-11) with *overweight* status Children were 2.7 times more likely to be obese the higher

children levels of watching TV while eating. Only mother's work strain remained significant in the model. Even so, the F-test was not significant in either model examining moderation since *the interaction term* was not significant effect (See Table 10). Similarly, the model for the age group 13-15 did not produce a significant moderation.

Next, I ran the above model examining father dinner ritual which was also significant in the logistic regression model (See table 11). Children in age group 13-15 were .26 times as likely to be obese the higher the higher father's dinner ritual importance level. Because of this negative correlation, father's dinner ritual was examined for moderation of mothers work strain and children overweight status. The

**Table 10 Moderation Analysis Results I.**

BMI Measurement	Age Group 9-11	Age Group 13-15
Overweight status	<b>Mothers eating while watching TV (.0348)*</b> <b>mother work strain (.0262)*</b> Interaction Term (.6990)	Mothers eating while watching TV (.4039) mother work strain (.1208) Interaction Term (.9157)
Overweight status	Children eating while watching TV (.0828) <b>mother work strain (.0149)*</b> Interaction Term (.4938)	Children eating while watching TV (.1667) mother work strain (.1341) Interaction Term (.1341)
Overweight status	Fathers dinner ritual (.5907) <b>mother work strain (.0257)*</b> Interaction Term (.2801)	Fathers dinner ritual (.0682) mother work strain (.0826) Interaction Term (.3638)

Odds ratio  $p < .05$ . Factor explanation: Interaction term created mothers work strain multiplied times the moderation variable e.g. mother controlling x mother work strain. **Bold** means variable was significant in the moderation model.

model did not produce a significant moderation for age group 9-11 nor age group 13-15.

At-Risk For Overweight And Healthy Weight Children 9-12 and 13-15.

Next I ran the above models testing *children eating while watching TV, mothers eating while watching TV, and Fathers dinner ritual* in the model for moderation effect

between and *mothers work strain and children in both the 9-1 and 13-15 age groups*

*with at-risk for overweight and healthy status.* Similarly, none of the models for either age group produced a significant moderation.

**Table 11 Amended Step 2 Logistic Regression of BMI Measurement Outcome Healthy, At-Risk of Overweight and Overweight (Odds Ratios 95% Confidence Intervals) (Control + Multivariate).**

Predictor	Age Group 9-11			Age Group 13-15		
	Healthy (N=87)	At-risk Overweight (N=123)	Overweight (N=86)	Healthy (N=109)	At-risk Overweight (N=105)	Overweight (N=102)
Kid White	1.7 (0.5, 5.9)	.67 (0.2, 2.3)	.56 (0.1, 3.0)	1.4 (0.4, 4.6)	6.1 (1.0, 38.1)	.11 (0.0, 0.7)*
Gender	2.9 (0.9, 9.5)	1.3 (0.5, 3.7)	.23 (0.1, 1.1)	2.1 (0.8, 5.6)	.49 (0.2, 1.6)	.26 (0.0, 1.7)
Father age	1.1 (1.0, 1.3)*	.97 (0.8, 1.1)	.98 (0.8, 1.1)	.99 (0.9, 1.1)	1.1 (0.9, 1.2)	.87 (0.6, 1.2)
Mother age	.95 (0.8, 1.1)	1.1 (0.9, 1.3)	.86 (0.7, 1.1)	1.0 (0.9, 1.2)	.90 (0.7, 1.1)	1.1 (0.8, 1.4)
Mother Ed. Level	1.4 (0.8, 2.4)	.94 (0.6, 1.5)	.88 (0.4, 1.7)	.82 (0.5, 1.3)	.99 (0.6, 1.7)	2.2 (1.0, 4.8)
Mother bmi	1.0 (1.0, 1.1)	1.1 (1.0, 1.2)	.95 (0.8, 1.1)	.90 (0.8, 1.0)*	1.1 (0.9, 1.2)	1.1 (1.0, 1.3)
Father bmi	.79 (0.2, 0.8)**	1.1 (1.0, 1.3)	1.1 (0.9, 1.3)	.83 (0.7, 0.9)**	1.0 (0.9, 1.2)	1.3 (1.0, 1.5)*
Mother work strain	.39 (0.9, 1.6)**		3.1 (1.2, 7.8)**			
Children eating while watching TV			2.7 (1.1, 6.9)*			
Mother eating while watching TV	1.9 (1.0, 3.6)		.33 (.13, .82)*			
Father dinner ritual					1.5 (0.9, 2.6)	.26 (0.1, 0.8)*
Children special family night/Sunday					1.6 (0.8, 3.2)	
Goodness of fit	p < .001***	(.0608)	p < .001***	p < .0001***	(.1281)	p < .001***

Non-significant multivariates are not shown except children special family night which experienced a significant interaction (See Roberson 2012 for more details). Source: Roberson, 2012.

### Extended Review – Children Special Food Night/Sunday Ritual

Next, I ran some exploratory interaction models using variables that were significant during exploratory logistic regression analysis but did not remain significant in the full step 2 model. Those variables that did not demonstrate an interaction term were thus dropped from the model. However, only the factor variable *Children special family night/Sunday* was retained and thus included in table 11. Among children 13-15, children were 1.6 times more likely to be obese the higher children levels of special family night importance. Although not significant in the Step 2 model, because of such positive correlation with obesity, children special food night/Sunday ritual was examined for moderation. A significant interaction term resulted from testing a model examining *children special food night/Sunday ritual* factor variable for moderation effect between and *mothers work strain* and children (9-11) with *overweight* status. Although children special food night/Sunday ritual was not significant in the model, *mothers work strain* remained significant in the model. The F-test was significant in the model examining moderation (See Table 12). Consistent with other models ran the results for children 13-15 did not produce a significant moderation.

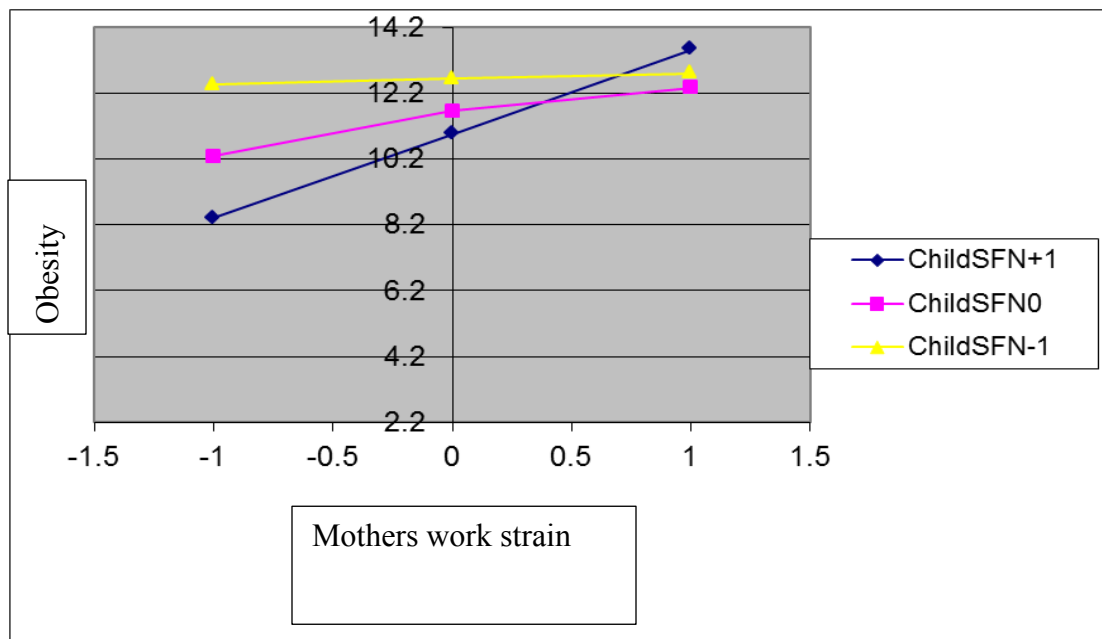
**Table 12: Moderation Analysis Results II**

BMI Measurement	Age Group 9-11	Age Group 13-15
Overweight status	children special food night/Sunday ritual ( <b>.1151</b> )  <b>mother work strain (.0157)*</b>  <b>Interaction Term (.0209)*.</b>	children special food night/Sunday ritual (.4883)  mother work strain (.1419)  Interaction Term (.4779)

Odds ratio  $p < .05$ . Factor explanation: Interaction term created mothers work strain multiplied times the moderation variable e.g. = mother controlling x mother work strain. **Bold** means variable was significant in the moderation model

Lastly, I applied a manual calculation procedure to examine the difference in slope coefficient positions for moderation examination. Given the significant relationship between *mothers work strain* and *overweight* children (overweight), I examined and graphed results to analyze if the relationship between *work spillover* and *overweight* kids varied by importance level children placed on having a *special family night/Sunday ritual*. Results demonstrated that the lowest obesity reporting among children 9-11 were among children placing a high importance on having a special food

night/Sunday ritual and with mothers whom reported lower levels of work strain (See Figure 4). Also, those mothers reporting higher levels of work strain with children that reported higher levels of special food night meal importance had the highest levels of obesity.



**Figure 4 Interaction term = Mothers Work Strain x Children Special Family Night/Sunday.**

Note: Horizontal: Work spillover -1.5 to 1.5; Vertical: Obesity 0 to 14.2. ChildSFN+1 = Child special family night/Sunday when slope= +1; ChildSFN0 = Child special family night/Sunday when slope=0; ChildSFN-1 = Child special family night/Sunday when slope= -1.

## Discussion

I investigated the interrelations among *work spillover* and *family meal rituals* to measurements of *overweight*, *at-risk for overweight* and children with *healthy* body mass index (BMI) status. The study was conducted with a particular interest in examining if

family practices of family meal rituals might create protective resource barriers that mitigate work spillover effect on children weight status health measures. Findings did not support hypothesis that family meal ritual variables *children eating while watching TV*, *mother eating while watching TV* nor *Father dinner ritual* (all significant in the full model) moderated the positive relationship between *mothers work strain* and *overweight, at-risk for overweight, or healthy weight* children for neither age group. The findings of lower levels of work strain and high importance placed by children on special family night suggest that it may be variations in work to family spillover for moms that may be moderating or mediating the practice of family meal rituals.

Although we have previously learned that a father's importance placed on family meals rituals importance was related to children's similarly perceiving family meals as important, this study may be suggesting that the meal practice itself isn't enough to buffer higher levels of work strain. The finding of mothers with lower work strain and children placing higher importance on having a special food night may suggest that when mothers have less stress at work, they likely have more time and energy to prepare home cooked quality meals on special food nights. However, at the other end of the spectrum, results show mothers reporting higher levels of work strain with children that reported higher levels of special food night meal importance had the highest levels of obesity. This finding adds to a body of work which supports growing evidence that a mother's work to family spillover is having some impact on children's health. Further suggest that high work stress environments that spillover into households can equate to children eating less healthy meals, and increased sedentary activities, such as watching TV

(Leibowitz, 2005). In circumstances of high work demands, special family nights may be turning into unhealthy food nights, and possibly a guilt response meal. Even so, *children special family night/Sunday* as a variable did not reached significance in the full logistic regression model, and thus results of the moderation interaction should be interpreted with caution.

Although both children and mothers eating while watching TV were significant in the full model, the study did not investigate whether or not children were present with either parent or not. It would be of interest to know whether results differ by whether mothers eating while watching TV had children present or not. Such a study is possible making use of the time diary data provided by the mothers and children in this study. If children are usually not present when mothers are eating meals while watching TV, this might provoke the next question “did you put the kids out of the house to play?” “Did you send them to their room to study or otherwise?” One possibility is that if sent outside to play, those children may be benefiting from physical play outside while mothers take time out for personal space to eat while watching TV as a meal ritual of a different sort. Studies have suggested that TV watching alone is not the culprit of poor food choices or obesity, but instead result from the content of the viewing information. At present, it is possible to find mothers in front of TV exercising to the latest get in shape program video. If others are eating while mothers are exercising while watching TV, are mothers considering this eating while watching TV? Qualitative research efforts may lend more insights to these developing lines of questioning.



The Search Institute's 40 developmental assets has gained considerable attention among youth development professionals aiming to promote the importance of providing youth with supports, opportunities, programs and resources. The 40 developmental assets are a part of a positive youth development movement that views youth as assets in the making as oppose to liabilities to be controlled. According to the Search Institute's website, a foundational finding has been that the more assets young people have, "the less likely they are to engage in a wide range of high-risk behaviors and the more likely they are to thrive" (Search Institute). Assets are divided equally into internal and external assets. Despite growing evidence supporting positive outcomes associated with children dining together as a family, a review of the assets does not reveal an inclusion of a wholesome ritual of dining together as a family as an asset. Instead, family home meal dining is encompassed under positive family communication and constructive use of time.

Parents are perceived as an important asset in a child's life, however if a parents ability to provide for the physical health of a child is hampered by work strain, then perhaps a mother's work strain should be considered a deficit and a barrier to the developmental asset of parenting. Because obesity prevalence is a threat that can cause a number of health issues for youth, particularly after they become adults, obesity prevention as a resource should merit attention as a developmental asset. The author argues that eating home meals together as a family routine should be given heightened consideration as an important developmental asset. The author further asserts that a parent's positive work-to-family spillover should be considered an external asset. Such

recommendation suggests that the asset model may need to begin to add additional assets that depict internal and external parental conditions as resources for positive youth development. The focus of the developmental assets is to reduce risk behaviors and increase protective barriers that help children navigate from childhood to adolescence and into becoming functional adults. It may be that the number 40 needs to grow.

In conclusion, if mothers with less work strain are more likely to have children that are less obese and children that value special food nights, then mothers should consider breaking away from having just one special food night and consider incorporating a regular routine of family meal rituals. The relationship of one special family meal night with higher levels of mother work spillover infers the other six nights have no family meal rituals. Indications are that increasing the number of family dinner meals may reduce obesity. Future studies should examine if increased family frequencies moderates mothers work strain; and if work strain moderates family rituals and/or family meal frequencies.

## CHAPTER IV

### STUDY 3: AN EXAMINATION OF PARENTING STYLES AS A BUFFER BETWEEN WORK SPILLOVER AND CHILDREN'S OUTCOME OF OBESITY

#### **Problem Statement**

An increased prevalence of overweight children has received increased media exposure as an important public health issue concern among American society. According to data reported by the Center for Disease Control, only 5% of children in the United States between the ages of 2-19 were considered overweight in 1974 compared to 16.9% in 2007-2008. Coincidentally we have seen a similar pattern of increased participation rate among married women with children under age 18 in the labor force rising from 47.4% percent in 1974 to 71.3%% in 2008. Even so, despite increased work participation, women continue to spend considerably more time doing housework than men (Blau, 1998). Yet, parents work life spillover onto childhood obesity has been under studied. Also, the pattern of increased mothers entering into the work place has increased researchers interest in examining dynamics associated with work-family interface. Recent efforts have been exerted to study how parenting styles are contributing to youth obesity and weight status, but no studies have looked at how parenting styles moderate an association between maternal and paternal work spillover on childhood obesity. Parenting styles association with children outcomes has received much attention in the literature with authoritative parenting style being most often found to be associated with positive outcomes in children. As such, authoritative parenting style may provide a

protective resource in the presence of negative work spillover. On the other hand, authoritarian parenting has been associated with obesity. Thus considering how work-family interface varies when taking parenting practices into consideration is an important component in promoting positive parenting practices and perhaps marital stability. In this study, I investigated an interaction effect among work spillover and parenting styles to measurements of overweight, at-risk for overweight and healthy children body mass index (BMI) weight status.

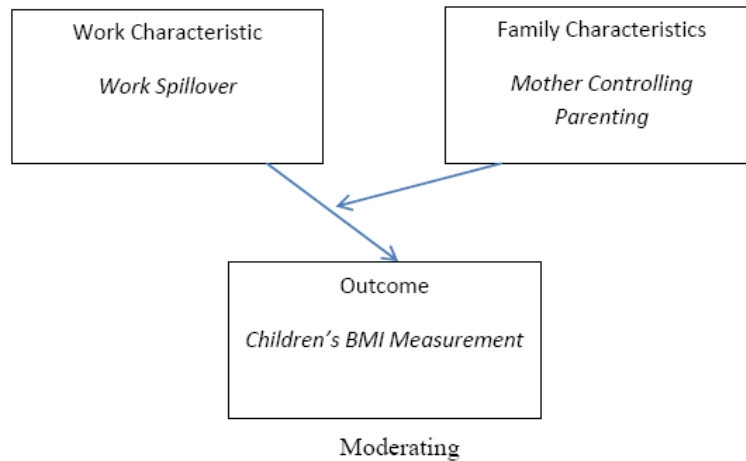
A prior study by Roberson (2012) examined correlational relationships between work spillover, parenting styles and children BMI measurements. Significant findings reported children to be almost three times more likely to be obese the higher the mother's controlling parenting style level. Also, higher mothers work strain was associated with increased odds of having obese children in age group 9-11; and was less than half as likely to have children of healthy weight compared to mothers who reported lower levels of work strain. Building from those findings, this study will examine how mother's controlling parenting styles may demonstrate a buffering effect between mothers work strain and children obesity.

Multiple sociology theories (role strain, work-family conflict, family resilience and ecological systems theory) were drawn from to drive the perspective of the present study. The early work of researchers focused on role theory and the strained consequences of balancing multiple roles (Staines, 1980). Work-family interface emerged later to focus on conflicts between work and family domains (Kirchmeyer, 1993).

As did Jacob et al, 2008 research on work-family conflict, I draw from Brofenbrenner's (1986) ecological systems theory which asserts there are distinct Microsystems in each individuals context that affect personal development. Jacobs et al. study also borrowed from Voydanoff's (2002) application of Bofenbrenner's theory to a work-family research framework. Accordingly, Voydanoff's (2002) explained that work and family are discrete Microsystems in which individuals encounter social interaction relationships. According to Jacob et al (2008), the reciprocal influence that work and family have on each other are referred to as the work-family mesosystem. This study draws from Voyandaoff framework which proposes that family factors may influence the relationship between work and family characteristics, work-family conflict and both family and work outcomes (See Figure 5).

### **Literature Review**

From a work standpoint theories about work-family spillover (e.g. Elder, 1995; [Moen & Yu (1999)] and [Moen & Yu (2000)] ) claim that high levels of family and job demands contribute to negative spillover, and resources (both at home and at work) promote positive spillover, or at least protect against negative spillover onto family members including children. Where work-family conflict is the outcome, studies have typically been conceptualized in terms of demands and resources (Frone, Yardley, & Markel, 1997; McManus et al., 2002; Roehling & Moen, 2003; Voydanoff, 2004; Altobelli & Moen, 2007). Specifically, I considered the demands of work and resources of parenting styles available to each spouse at home as predictors of children-level outcomes of obesity.



**Figure 5 Relationships between the Work-Family Interface and Outcomes B.**

**SOURCE: Voydanoff (2001).**

NOTE: work characteristics could also serve as the moderating variable and family characteristics could be the predictors.

According to Frone, Russell, and Cooper (1992), the interface between work and family roles has long captured the interest of a growing number of work and family researchers. We have learned that excessive work demands on time can lead to family strain or stress (Pleck, 1979; Piotrkowski, 1979). Thus work spillover can have a deleterious effect on parent/child relations. Previous studies have demonstrated that parents with higher levels of work commitment tend to devote less time, energy and attention to other family members (Walters, Tasker, and Bichard, 2001; McIntosh et al., 2006). High work commitment has also been associated with increase marital conflict and decrease marital satisfaction (Laedwig and McGee, 1986). Changing family

structural dynamics, increased job demands placed on parents can equate to conflicts between how parents would like to spend their time with children and how they actually spend their time with children. This fact of life finds many parents searching for ways to balance attending to the developmental needs of children and achieving work success. We learned from Anderson et al (2004) that a mother's work time commitment potentially adds to the risk of obesity in children (Miller and Han, 2008). By contrast, Fenwick & Tausig (2004) reported flexible work schedules can provide beneficial conditions for families that create increased opportunities for parental involvement in the activities of their children and enhance health benefits. In addition, employed mothers of preschoolers have been found to report significantly greater work-family role strain and more health-related symptoms than their male counterparts (Green-berger, Goldberg, Hamill, O'Neil, & Payne, 1989). Thus we have learned that how parents orientate toward work as well as work conditions can affect parent-child relationships in general (Parcel & Menegham, 1994; Fenwick & Tausig, 2004, McIntosh et al, 2011).

#### Parenting Style as a Protective Resource

According to Baumrind (1991), parenting style dimensions include a parent's responsiveness and demandingness. In a study examining parenting styles and overweight status in first grade, Rhee et al (2006) characterized parenting styles as ; authoritative (respect for child's opinions, but clear boundaries), authoritarian (strict disciplinarian), permissive (indulgent without discipline), and neglectful (emotionally-uninvolved, without rules). Although authoritative parenting is widely considered the parenting style most associated with positive findings, only recently have studies begun

to examine associations between parenting styles and family meals (Kim et al, 2008). In a longitudinal study by Berge et al (2010) looking at an association between a home environment factor of parenting style and family meal frequency, findings were able to show authoritative parenting style predicted higher frequency of family meals 5 years later. Previously, several cross-sectional studies involving youth had found an association between authoritative parenting style and lower BMI index and healthier dietary intake (Kim et al., 2008). Recent research has begun to make connections between investments of time spent with children by mothers in cooking or other activities and lower children's risk of overweight (Peters et al., 2009). In a study by Hubbs-Tait et al., practices used by authoritarian parents were reported to include food restriction, pressure to eat other foods whereas modeling, monitoring food intake and promoting children autonomous food selection were characteristic of authoritative parents.

According to Decaluwe et al. (2006), authoritarian parenting style has been most highly associated with obesity and children from authoritative households are less likely to be obese than children from permissive and neglectful parenting styles (2 to 1). Parenting criticism and worry about children's eating habits is suspected to be a contributing factor to children obesity (Eckstein et al., 2006). The earlier work of Hughes & Galinsky, (1988) found employed mothers with younger children are more likely to experience greater work-family interference, when compared with employed mothers of older children.



We have also known for some time that parental investment by both mothers and fathers has greater impact on socialization practices and views of their children than does their degree of investment in work. Findings were supported by a reporting of differences in involvement in parenting being related to differences in favorable descriptions of children from parents (Greenberger, 1989). Even so, in a 1995 study reporting on maternal employment and children's academic achievement, parenting style was considered as a mediating variable (Beyer, 1995). Maternal employment was found to have little, if any, direct effect on children's academic achievement. However, Parenting styles did affect academic achievement and thus was seen as mediating the effect of maternal employment on children's academic success. From Beyer, 3 sets of variables of interest were put forth as moderators of this relationship which included patterns of employment, role satisfaction, and father's behavior. The Beyer study concluded that future research could benefit from examining how children's academic achievement can be optimized by parental behaviors, adequate monitoring, and encouragement. Such studies lend support that parenting practices may a conduit by which parental employment effects on household members may be buffered.

We know that when parents bring stress home from work it can be disruptive of parent/child interactions (Repetti & Wang, 2009). Thus researchers have asserted that parent-child relations on adolescent psychological well-being have been widely overlooked and fathers tend to be underrepresented in family assessment studies (Videon, 2005; Phares, 1996). Scholars Williams and Kelly (2005) stated unequivocally, "little is known about the different roles that mothers and fathers play during adolescent

development'' (p. 171). Therefore, accounting for both parents separate correlates on obesity should offer a more comprehensive awareness of potential associations.

A surplus of studies has documented associations between parenting styles and children's/adolescents' psychosocial adjustment (Jackson et al., 2005), academic performance (Garg et al., 2005), behavioral problems (Weaver & Prelow, 2005) and multiple aspects of development (Baumrind, 1991). Despite broad agreement among researchers that authoritative parenting style may have the most beneficial impacts on children's developmental outcomes (Baumrind, 1967, pp. 68, 89, 91); research linking perceived parenting behaviors health outcomes of adolescents until recently has been neglected.

Studies have demonstrated that when parent/child relationships are high quality, parents are in a position to serve as a buffer against the stresses of adolescence (Papini and Roggman, 1992) in Bulanda and Majumdar, 2009). Bulanda and Majumdar further found that positive correlations with self-esteem remains positive and grows stronger when the relationship quality with each parent is high. The role strain of two parent wage earners may likely create the conditions where parent availability and involvement have more variations in parent-child time. In general, study findings have associated the more time that parents spend with children, the more favorable the outcome in children, such as self-esteem and academic achievement (e.g., Russell and Russell 1987; Yeung et al. 2001).

Earlier researchers suggested that increased employment opportunities explained a growing proportion of dual-earner couples and possibly a changing of traditional

married-couple models of a “breadwinner” husband and “homemaker” wife (Juhn & Murphy, 1997). Building on this argument, Winkler (1998) asserted falling real earnings for men since the 1980’s combined with rising labor force participation and real earnings for women had begun to affect decision making within some married-couple families. Thus, traditional parenting styles of “authoritarian” fathers and “authoritative” mothers are now contested and these gender roles may be changing. Learning more about how parenting styles of both parents may be contributing to a growing obesity trend in children can help inform parenting education.

Even so, children grow up in contextual environments and are affected by many factors that impact how youth develop physically and socially. Bronfenbrenner’s ecological systems theory and model has helped us understand better how children are affected at the personal, familial, community and society levels. As such, youth are expected to be responsive to levels of parental stress, family dysfunction, economic stability, work conditions and other socioeconomic-familial factors. Yet, finding patterns of how socioeconomic-familial factors are affecting childhood obesity has been understudied.

Voydanoff posited that families and individuals adopt strategies or coping resources to alter aspects of work, family or the individual to improve work, family, and individual outcomes. Even so, most studies examine outcomes, adaptive strategies or resources from the standpoint of the adult parent or work place. In studies examining work-family conflict, little is known about adaptive strategies of children or how parents or work adaptations improve children outcomes. Voydanoff model asserts that the

success of these strategies is indicated by the extent of perceived work-family fit which is directly related to work, family, and individual outcomes. However, only a few studies have focused on work spillover to specific children outcomes.

### **Purpose and Hypothesis Statement**

This study examined parenting styles as a buffer between work to family spillover and childhood obesity. Parental influences are known to play an essential role for children physical and psychosocial development (Jackson et al., 2005). Some findings have suggested authoritarian parenting style is most highly associated with obesity and children from authoritative households are less likely to be obese than children from permissive and neglectful parenting styles (2 to 1) (Decaluwe et al., 2006). Although no study has shown parenting style to be a buffer of work to family spillover on children's obesity, social support has been reported as a moderator of work to family spillover on children well-being. Aspects of supportive parenting resemble social support such as the offering of emotional support. In a recent study by Gottfredson and Hussong (2011), researchers concluded that adolescents who perceive adequate levels of parental involvement were less likely to develop self-medication (alcohol use) coping whereas adolescents who did not perceive enough involvement from their parents were more at risk. Recent studies have reported finding of parental social support as a moderator of children and adolescents (Hersh and Hussong, 2009; Reimuller, A., Shadur, J., & Hussong, A. M. 2011). Therefore, authoritative parenting style was expected to provide a similar protective barrier between work to family spillover and children's obesity.

Recent investigations of mothers work hours and work schedule suggest a link to obesity in children (Miller and Han, 2008; Morrissey et al., 2011). Even so, there is a paucity of research examining the impact of work on specific children outcomes. No such research to date, however, has evaluated whether parenting styles moderates the work-family interface of parental work spillover from work on children's BMI measures. The purpose of this study was to investigate parenting styles as a potential buffer between the potential impacts of work spillover on childhood obesity. This study focuses on finding ways to reduce the impact of work spillover from parents on the development of childhood obesity. Findings could lend support to a national call for interventions aimed at reducing a growing obesity rate among American children and further support training programs on parenting style habits.

## **Method**

### **Participant Sample**

Random digit dialing was employed to recruit 312 Houston families (see supplemental material Houston Children Nutrition Study Codebook F.pdf). This response rate is equal to or better than that of recent studies of multiple members of families, the rates of which run from 49% to 23% (Hendy et. al, 2009). Participants included both parents (if a father was present in the household) and one child aged either 9–11 or 13–15; an oversample of single-headed households made up 20% of the participating families; however, the nonresponse rate of children lessened this percentage in the overall sample. The age groups were selected to provide data on both pre- and post-pubertal children;

12-year-olds were thought to be most likely on the cusp between these two groups of children; thus were not included.

#### Procedures/ Data Collection and Reduction

Mothers and fathers responded to a telephone survey which contained questions about work experiences (e.g., hours, standard vs. nonstandard scheduling; flexible work schedule; job stress), perceptions of the family meal, and concerns about their child's eating habits. Both mothers and fathers filled out income questionnaires, dropped off at their homes at the time of the child interviews. Children underwent a personal interview (about an hour) in which they were asked about how they were parented, perceptions of the family meal, the importance of eating with their family, and the frequency with which they ate with their family. After the questionnaire was finished, children's height and weight were measured following standard procedures (Lohman et. al., 1988).

The secondary study was approved by the Institutional Review Board of Texas A&M University. A full review, written consent (adults) and assent (children) were obtained in the original study. Also, a listing of variables used in this study is provided in a Variable Summary of Report (See Table 13).

**Table 13 Variable Summary of Report.****Dependent Variables of Interest**


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 Body Mass Index (BMI)
 

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**Independent Variables**


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 Mother work strain  
 Mothers controlling parenting style
 

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**Control Variables**


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 Parent's age  
 Parent's BMI measures  
 Mother's income  
 Mother's education level  
 Child ethnicity  
 Child gender
 

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**Partitions of Analysis**


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 9-11 year old children  
 13-15 year old children
 

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## Measurements

*Body Measurements and BMI*

Height, weight, waist circumference and triceps skinfold and sub-scapular skinfold thickness were obtained by trained interviewers following standardized procedures. In addition, as a frequently used measure of body fatness status, BMI was calculated as body weight in kg divided by height in meters squared (Lee & Nieman, 1996). Each subject's BMI percentile was calculated using the SAS program developed by the

Centers for Disease Control and Prevention (CDC, 2005). The resulting sex- and age-specific BMI percentiles were used to develop four-dichotomous variables on the basis of CDC guidelines: Underweight (less than the 5th percentile), Healthy weight (5th percentile to less than the 85th percentile), At risk of overweight (85th to less than the 95th percentile) and Overweight (equal to or greater than the 95th percentile) (Kuczmarski et al., 2002).

#### *Work to Family Spillover*

Attention and psychological energy represent additional factors in caring for children. These were reflected in the degree to which parents found that their work demands spilled over onto the family, the degree to which their work was stressful, and the degree to which they were committed to their work, the degree to which they had job flexibility. Work spillover was measured in the parents' telephone interview surveys by a series of questionnaire items based on earlier work by Simon (1992). Each employed parent responded to 7 standard items to measure perception of work/home role strain which included "I experience conflicts between my work responsibilities and my family responsibilities"; "I am able to give my children the attention they need"; "I sometimes miss out on the pleasures of being a parent." For each working parent, these items were subjected to a principal factors factor analysis (Cliff, 1987). For each parent, two factors of work role strain and home role strain resulted from this analysis. Loadings on these factors were moderately high and positive. Work role strain is explaining work interface from spillover and home strain is explaining home interface from spillover. The factor for the fathers and the factor for the mothers should be interpreted as follows: a high



score on a work to family spillover factor means that the parent in question is more likely to experience work to family spillover.

### *Parenting Style*

Parenting style is usually measured via children's Perceptions of how their mothers and fathers parent them (Maccoby & Martin, 1983). Children underwent a personal interview in which they were asked about how they were parented. The children's questionnaire also included a 25-item scale developed by Devereux, Broffenbrenner, and Suci (1962) that was used to measure the dimension of parental warmth and involvement that parents have in their children's life, the presence of clear behavioral standards and child involvement in decisions that affect him/her. The questions utilized a Likert 6-point scale. In order to capture as much complexity of parenting behavior as possible, parenting variables were subjected to two types of 'data reduction' techniques: 1) items that were thought to measure each dimension of parenting style (e.g., nurturing; controlling) were grouped; 2) principal components analysis was run on each group of items followed by a second-order principal components analysis for further data reduction as recommended by Gorsuch (1965) and Thurstone (1947).

### *Control Variables*

Parents' age, BMI measures and mothers education were combined with children ethnicity and gender as constructed from the Parents' Telephone Survey and Parents' Self-administered Questionnaire and children personal interview questionnaire.

Principal components analysis was run on the items that measured family meal ritual and work spillover. Factors with eigenvalues of 1.0 or greater were retained; factor

loadings that exceed 0.400 on a given factor were considered as constituents of that factor (Pett et al., 2003). SAS data was used to Cronbach's alpha with .70 or greater serving as the standard for acceptable reliability. The author acknowledges a lone exception was made for permissive punishment, because this parenting style has been well represented throughout the literature as an acceptable parenting style (Cronbach  $\alpha = 0.40$ ).

#### Statistical Models

We utilized logistic regressions for the dichotomous outcome variables (i.e., child overweight) to examine the association between maternal and paternal work spillover and children BMI measurement taking covariates into account. In order to test for the buffering of work spillover by parenting, a second equation was run containing an interaction term consisting of the product of parenting style multiplied times work spillover (Aiken and West, 1991).

BMI weight status measured as healthy weight (5th percentile to less than 85th percentile), at risk of overweight (85th to less than the 95th percentile) or Overweight (equal to or greater than the 95th percentile) (Kuczmarski et al., 2002). Control variables included children's sex, race/ ethnicity, and age group. Initial analyses included parents' income. Mothers and fathers income were not related to children BMI, and a considerable number of parents failed to fill out the income questionnaire provided to them. As a consequence, parents' income was dropped from the analyses.

Analyses were performed using SAS (version 9.2, SAS Institute, Inc., Chicago, IL, 2008), and relationships were considered statistically significant at the .05 level or less.

## **Results**

I was interested in whether parenting style serves as a family resource and buffers the relationship between work to family spillover and children's body mass index. So I tested the model for an interaction effect.

### *Descriptive Characteristics*

The majority of children participants in the study were White (71.6%) with more than half in the 9-11 age group (54.3%) and the remainder age 13-15 (45.7%). Females (51%) outnumbered males in the study. Fathers and mothers had a similar education level (median education for mothers and for fathers is 'college graduate'); the average BMI's for fathers and mothers were 27.51 and 25.81 respectively; mean family income was \$100 000.

### *Factor Analysis and Reliability Testing*

#### *Maternal Parenting Behavior*

The principal components analysis produced 9 factor variables, which were labeled momcare (e.g., she comforts me), momclear (when she punishes me she explains why), momhelps (teaches me things I want to know), mommature1 (encourages me to try things on my own), momcpunish (can't bring herself to punish me), momature2 (worries I can't take care of myself), momcontrol (wants to know exactly where I am going), momshame (punishes by trying to make me feel guilty), and momauthp (prevents me

from doing my favorite things). A second order analysis followed and two factors emerged from the principal components analysis of the maternal parenting style behavior items (see Table 14). The first factor resembles parental behaviors of ‘nurturing’ with all four items having high loadings greater than .600. Items that loaded highest included momcare, momclear, momhelps and mommature1. This factor suggests mothers provide nurturing through emotional and instrumental support while encouraging autonomous growth. Although the mommature item had a low loading (.367) this may suggest there exist an underlining of high expectations within this factor. The second factor resembles parental behaviors of ‘controlling’ with four items loadings greater than .500. momcontrol loaded highest (.746) and momature2 loaded at .598. The second factor may suggest mothers used controlling and worrying behaviors to protect and insure high expectation of children were being met. Also, those mothers appear willing to use shaming (.568) or withholding of privileges as a way of disciplining (.609). Two items loaded to form a third factor which resembles permissive punishment. Momcpunish loaded high at .821 and momshame loaded moderately at .542. This factor suggests mothers could be using expressions of hurt as a way of shaming children that they are unable to punish. The variation in dimension between these three factors suggests that mothers in this study tended to be perceived as either nurturing or controlling or permissive in their parenting behaviors.

**Table 14 Results of Factor Analysis of Maternal Parenting Style Behavior Items from Houston Study- Children B.**

	Nurturing	Control	Permissive Punishment
Momcare	.782	.048	-.014
Momclear	<u>.769</u>	.168	.102
Momhelps	<u>.657</u>	.119	-.063
Mommature1	<u>.662</u>	-.139	.290
Mmcpunish	.161	-.157	.821
Mommature2	.367	.597	-.106
Momcontrol	.113	<u>.746</u>	.087
Momshame	-.189	.568	.542
Momauthp,	-.152	.609	-.246
% variance explained =	27.03	18.3	12.15
Cronbach's alpha = .740	.808	.658	.399

A Cronbach's alpha procedure in SAS was run on maternal parenting style behavior items. SAS output reported from raw variables an alpha reliability of .74 for the maternal parenting behavior single item scale.

#### *Paternal Parenting Behavior*

Similarly, a second order principal component analysis was done on fathers' first order parenting style factors. Two factors emerged from the principal components analysis of the paternal parenting style behavior items (see table 15). The factor loadings were comparable to the maternal factor loading yielding a 'nurturing' and 'controlling' factors. Four of the five items reflecting the nurturing factor had high loadings (greater than .700). Those four items included dadcare, dadclear, dadhelps and dadmature1. The remaining item, dadmature2, loaded at .431. These items suggest that dads are perceived

as caring and hold high expectations for children. The second factor reflecting controlling had four items loading positively with *dadauthp* (.718) and *dadcontrol* (.708) loading  $> .700$ . Loading at the lower lever were *dadmature2* (.601) and *dadshame* (.555). A fifth item *dadcpunish* loaded negatively (-.417), suggesting that fathers control was antithesis to lack of punishment behaviors. In comparison to mothers, fathers appear less likely to have permissive punishment behaviors.

A Cronbach's alpha procedure in SAS was run on paternal parenting style behavior items. SAS output reported from raw variables an alpha reliability of .82 for the paternal parenting behavior single item scale (See Table 15).

#### Logistic Regression Results

Work spillover factors were ran through an exploratory logistic regression analysis to discover factors significantly associated with measurements of overweight, at-risk for overweight and normal children BMI weight status. Mother work strain (2.85) was positively associated with overweight; fathers family strain was positively associated with at-risk for overweight; and mothers work strain was negatively associated with healthy weight status for children in the 9-11 age group. No such significant relationships were found among children 13-15. After being subjected to a full model, only the work spillover factor of a mother's work strain remained significant in the model. Children of mothers with higher work strain were 2.7 ( $p < .05$ ) time as likely to be overweight than children of mothers with lower work strain. In contrast, mothers work strain was negatively associated with children normal weight ( $p < .05$ ).

**Table 15 Results of Factor Analysis of Paternal Parenting Style Behavior Items from Houston Study- Children B.**

	Nurturing	Control
Dadcare	<u>.798</u>	.036
Dadclear	<u>.745</u>	.164
Dadhelps	<u>.761</u>	.144
Dadmature1	<u>.769</u>	-.184
Dadcpunish	.285	<u>-.416</u>
Dadmature2	<u>.432</u>	<u>.555</u>
Dadcontrol	.239	<u>.708</u>
Dadshame	.059	<u>.601</u>
Dadauthp,	-.076	<u>.718</u>
% variance explained =	31.82	19.75
Cronbach's alpha = .821	.844	.705

Maternal and paternal parenting factors were also ran in the same exploratory logistic regression analysis to discover factors significantly associated with measurements of overweight, at-risk for overweight and normal children BMI weight status. Higher maternal control was positively associated with children being at-risk for overweight (9-11) and overweight children (13-15). In contrast, maternal controlling parents were also negatively associated with healthy children weight status for the same coinciding age group. Fathers nurturing and control were associated with at risk for overweight among children in the 13-15 age group only. After being subjected to a full model, only mother controlling parenting style remained significant in the model. Children with more controlling mothers were 2.8 ( $p < .05$ ) time as likely to be

overweight than children of mothers with lower controlling behaviors. In contrast, mothers control was negatively associated ( $-.43, p < .0001$ ) with children normal weight. Parenting style behaviors that were statistically insignificant in these exploratory models were dropped prior to conducting the moderation analysis.

#### Moderation Analysis

Mother controlling remain significant among overweight and healthy weight children age group 13-15. Also, mother work strain held significance among overweight and healthy weight in age group 9-11. However, the F-test is not significant in either model examining moderation since no interaction term had a significant effect (See Table 16.). Since you are using logistic regression, I don't think it gives you an F-test value. The overall model fit is captured the Likelihood Ratio and each individual independent variable is test with a Wald Chi-Square.

Moderation analysis did not demonstrate that mother controlling parenting style moderates the relationship between mothers work strain and measurements of overweight, at-risk for overweight and normal children BMI weight status.



**Table 16 Moderation Analysis Results III.**

BMI Measurement	Age Group 9-11	Age Group 13-15
Bmi_Kids4 Overweight	mother controlling (.8732) <b>mother work strain</b> (.0155)* momcontrolbuff1 (.2419)	<b>mother controlling</b> (.0248*) mother work strain (.1349) momcontrolbuff1(.2688)
BMI_Kids3 At-risk for Overweight	mother control (.8284) mother work strain (.1173) momcontrolbuff1 (.6142)	mother control (.0280)* mother work strain (.2047) momcontrolbuff1(.5657)
BMI_Kids2 Healthy Weight	mother control (.9336) <b>mother work strain</b> (.0045)** momcontrolbuff1 (.6547)	<b>mother controlling</b> (.0014)***  mother work strain (.7020)  momcontrolbuff1 (.7740)

- Odds ratio  $p < .05$ . Factor explanation: Interaction term created momcontrolbuff1 = mother controlling x mother work strain. **Bold** mean factor was significant in the full model and pulled for moderation exploration.

## Discussion

Findings from this study using moderation analysis did not support the hypothesis that mother controlling parenting style moderates the relationship between mothers work strain and measurements of overweight, at-risk for overweight and healthy weight children BMI weight status. Although exploratory logistic regression demonstrated some evidence of mothers controlling parenting style and fathers nurturing parenting style may be affecting children's BMI weight status, only mom controlling parenting style behavior appeared to affect children's BMI weight status as reported here and in Roberson (2012). Fathers' parenting was not significant in the full model level and was thus not considered for moderation effect.

Nonetheless, mom control was positively associated with overweight among 13-15 year olds, and negatively correlated among combined children normal weight. It is likely that a controlling behavior from moms is more likely to be contributing to the “eat all your food from the plate”, and demanding that a child eat food they may not like. Finding support Hubbs-Tait et al., (2008) practices used by authoritarian parents were reported to both food restriction and pressure to eat other foods. However, results in the present suggest that authoritarian parenting style of controlling behaviors appears to have an effect on older rather than younger youth.

The literature supports the argument that children of controlling parents tend to participate in deviance when outside the control of their parents. This may be how children project frustration on to others or in other places away from parents (e.g. in school). This may suggest eating habits of teens away from controlling parents may provoke a sort of resistance to parental demands for eating healthy. Therefore, if teens are eating less healthy food when parents are not around, a mothers controlling parenting style may be contributing to a poorer diet or other psychosocial issues not examined in this study. Thus, controlling parenting may produce children who break eating rules laid down by their parents, leading to the very outcome controlling parents wish to prevent, consistent with acts of deviance or defiance that we find associated with low warmth and high harsh discipline in parenting style literature (e.g., Ary et al., 1999; Caldwell & Darling, 1999, Dishion & Andrews, 1995, Witt & Caldwell, 2005).

Odds ratio suggest that children are 2.23 times more likely to be obese the higher children’s mom controlling parenting style. Odds ratios for fathers nurturing and

controlling parenting style indicated positive associations with at risk for overweight among children in the 13-15 age group. While Rhee et al. (2006) characterized authoritative parenting style as having respect for child's opinions while yet setting clear boundaries, it may be the modeling that Hubbs-Tait et al. (2008) that explains the positive relationship between fathers' nurturing and children being at-risk for overweight. Many would attach a nurturing parenting style to positive outcomes. However, McIntosh et al. (2011) found that the more time fathers spend eating fast food, the more time their children spent eating at fast food restaurants and the more time fathers spent eating in full services restaurants, the more time their children spent doing this; both of these behaviors associated with higher level of obesity than eating home cook meals. Perhaps, a fathers modeling may not be the best model choice among parents. Even so, a child's perception of feeling nurtured may equate to a perception of feeling happy, satisfied, rather than healthy. The connection between fathers' controlling parenting style and obesity supports the contention that obesity may be a deviant response to a lack of autonomy or food choice voice while in the confines of controlling parents. This supports Sokol-Katz, Dunham, & Zimmerman (1997) contention that children become free to engage in deviant behavior when social controls are either ineffective or absent (the key word). In other words, when children escape the confines of controlling parents, they may sneak, or simply partake in non-parental approved dietary habits.

In a study by Caldwell and Darling (1999) examining parental control as a predictor of adolescent partying and substance use, findings suggest "if adolescents

perceived low levels of parental monitoring and associated with peers who used substances, then they were more likely to use themselves” (p.57). Similar findings indicate that mothers’ controlling behavior can lend itself to some positive outcomes in children. However, children in the 13-15 year old age group are in a sensitive developmental stage and are likely to be resistant to controlling behaviors. Identity formation at this stage would suggest adolescents may be in the exploratory stage and seeking to find their identity. Controlling parenting may be contributing to delicate, problematic body image issues among adolescents. While studies have not yet supported low self-esteem as a predictor of obesity, studies have linked obesity to lower self-esteem (Wang, 2009). Thus, Wang’s findings suggest that the current childhood obesity epidemic we are experiencing in the US may trigger an increase in the population prevalence of low self-esteem in the future. Controlling parenting style may help explain the obesity-self-esteem connection. Research should further examine whether the relationship between mothers’ controlling behaviors directed at their 13-15 year old children only predicts overweight in these children or whether it also predicts self-esteem, mental health and other well-being factors.

Two views about parenting come to mind while contemplating the controlling mothers finding. There exists a classical view (Piaget, Erikson, etc.) which suggests that adolescent development requires youth to become disengaged from their families and more attached to their peers in order to develop a sense of self. Accordingly, parents are encouraged to let go and allow their children to discover their identity. As such, we can postulate from the classical view that parents of children in this age group are likely to

have parents that allow more independence at mealtime. Some parents are more likely to say, “Go find something to eat yourself!” particularly if they are dealing with work strain. This suggests a situation in which less monitoring occurs and what I have termed deviance eating. The second view is a transition-proneness view (Jessor & Jessor, 1978), which suggests behavior that emerges during adolescence (e.g., independence, increased reliance on friends relative to parents, etc.) often leads to detrimental behavior.

Accordingly, parents would need to prevent such behavior and would need to be encouraged to maintain control over their children. Ecological systems theory focuses our attention on understanding developmental processes; encourages us to investigate interactions between contexts; and informs us that individuals actively influence and are influenced by the contexts they inhabit. This study’s findings support the hypothesis that children’s obesity is impacted by parental, work, and family household contexts and provide some evidence of interactions between family household and work contexts.

In addition, we find distinct differences in what impacts overweight status among younger children and such status in older children. Differences in age group outcomes suggest further investigation into how the developmental stages of youth contribute to the prediction of overweight status when considering family, parental, and work variables. Would the results have been different had the research been able to tease out the stage at which identity formation took place among the adolescents at the time this study took place? Also, what role is family meal rituals playing in the identity development of children? We have learned from Coatsworth et al. (2005) that identity development can occur in a variety of contexts. According to Eccles & Barber (1999),

an important consideration in understanding identity development is the fit between person and context. Most would argue that controlling parents and adolescents are not a good fit. Other than spending time in sports, social activities, such as hanging out with friends, has been reported as one of the most common uses of leisure time by adolescents (Larson, 2001; Larson & Kleiber, 1993; Larson & Seepersad, 2003; Larson & Verma, 1999). Our study found that children were less likely to be overweight the more mothers eat while watching TV. Could watching TV with mothers while eating be considered a healthy leisure space shared by parent and children? Conceptually, leisure activities have been described as a prime context for adolescents to discover interests and formulate a personal identity (Erikson, 1968; Kleiber, 1999; Waterman, 1990). This line of reasoning supports the concept that family meal rituals are quality time and as Voyandanoff and Kelly (1984) suggest, the ability to spend time in family activities is one of the most important resources for coping with time demands. These concepts suggest further exploration into the family meal ritual eating as a leisure context. It is possible that outcomes may vary depending on whether mothers perceive eating meals while watching TV as leisure space vs. when it is not perceived to be leisure.

In conclusion, both work spillover and parenting styles were supported as having a relationship with children obesity measures for both the 9-11 and 13-15 age groups. However, these relationships are less strong when combined into a full model. Although the relationship between mothers' work strain and mothers' controlling parenting style and obesity-related variables remained significant, there was no evidence that a maternal or paternal parenting style moderates the relationship between work spillover and

children obesity measures. Future studies may wish to examine whether increased food choice of children buffers the impact of controlling parents on children's overweight and obesity. Also, studies could investigate if parenting style moderate more specific job factors such as work commitment, work flexibility and job loyalty.

## CHAPTER V

### CONCLUSION

#### **Summary**

The study examined data from 312 families with at least one child between the ages of 9-11 or 13-15 about how their body mass index weight status related to work to family spillover, family meal rituals, and parenting styles. At the time of this study, there were no existing studies that examined this combination of variables. In particular, researchers have not examined the possible moderating effect of parenting styles or family meal rituals on the effects of work to family spillover on children's obesity. This study also responded to a call by scholars to address the issue of the paucity of knowledge about how mothers' and fathers' roles differ during adolescent development. Therefore, this study attempted to account for potential maternal and paternal contributions to their children's obesity.

Determining whether both parents contribute to their children's weight allows for the elucidation of new channels for lessening obesity by working with both parents. Findings support the hypothesis that maternal work strain and paternal family strain separately had increased odds for children being overweight. When taking into consideration control variables and other variables significantly associated with children BMI status, only a mothers' work strain was associate with increased odds of having overweight children in the 9-11 age group. These findings build on those of other researchers who have found that mothers' work commitment has more of an effect on



younger children. It should be noted that no work –to-family spillover factor finding supported a relationship with any weight status of children in the 13-15 age group.

This is the first report of family meal rituals examined as a moderator of work to family spillover and children body mass index. Children aged 9-11 whose mothers were less likely to watch TV while eating meals were more likely to be obese. This was a surprise finding given that TV watching is generally considered the anti-thesis of family meals rituals. However, this finding may support reported information provided by the University of Michigan Health System which argues that parents can explain events their children are seeing when a parent is watching TV with their child. This could be true of food commercials as well. In contrast, children eating while watching TV had increased odds of being overweight. This result was expected and supported the literature and a hypothesis of this study. Although studies have not been consistent in finding a connection between eating while watching TV and childhood obesity, studies that are beginning to explore what is going on while eating or who might be present during meals in front of the TV should help advance our understanding of this eating habit phenomenon. Children ages 13-15 whose fathers perceived that family dinner was an important family ritual were less likely to be overweight. Finding from the present study support recent research that fathers perceive dinner to be an important family event has healthy impacts on adolescents.

The current study is unique in its examination parenting styles as a moderator of work to family spillover on children's body mass index measures. Although the author found preliminary evidence that fathers' nurturing may have impact on at-risk for

overweight children (13-15), only mothers' controlling was associated with the greater likelihood of children being overweight and the lower likelihood of being at a healthy weight. No interaction effect was found between parenting and work to family spillover and therefore does not support the hypotheses that parenting style moderates the likelihood of obesity associated with a parent's work to family spillover. Children who reported their maternal parent was controlling, were more likely to be overweight than those whose maternal parents were less controlling. This finding supports a body of literature that suggests authoritarian parenting style, which includes controlling, is associated with obesity. We have learned that the dietary quality of children can be influenced by how parents interact with children (parenting style). Controlling mothers may be more likely to demand that children "eat all of your food off that plate!" Even so, parenting style did not moderate the relationship between mothers' work strain and overweight children. More studies are needed to understand how a controlling or authoritarian parent produces overweight children. This will likely require a qualitative study the results of which could better inform family life educators and health and youth development professionals.

An additional practical application is that nutritionists, family consumer science extension agents and others professions working to improve family dietary habits, should incorporate some discussion about parenting styles and associations that have been found in the literature with childhood obesity. Further steps should be taken to provide education regarding meal portions and how parents can communicate at the dinner table in a manner that is less controlling, particularly when their children have

reached adolescence. In contrast, we know that younger children in general are more receptive to following the directions of parents; even so, it is suggested here that the authors' recommendation also be applied to parents with younger children. It may be that resistance to parents, or what I have termed eating deviance, may only begin to manifest itself during adolescence.

The results of this study demonstrate the importance of a multi-theoretical approach to the study of those elements of children's environment suspected to affect children's eating habits and lack of exercise. Access to food, meal consumption environments, meal rituals or lack thereof are affected by parental work conditions and available time after work and available energy after work can influence parenting practices once arriving home from work. The literature speaks to a family sitting together during dinner meal time as an opportunity for modeling, monitoring of children's eating and quality time for families and can be associated with positive outcomes in children. Social support includes emotional support which resembles parental responsiveness support. There is a large body of literature demonstrating that social support acts a buffer between work and stress and studies have associated authoritative parenting style with healthier weight status and authoritarian with a greater likelihood of children being overweight. Therefore, it is logical to hypothesize that parenting styles acts as a buffer as well. Suggestive findings in other studies indicated a potential for family meal rituals and parenting styles to act as a moderator between work spillover and children overweight status. However, this hypothesis was not supported by the study findings. However, having a special family night/Sunday dinner is a finding

worthy of further exploration into how dinner frequency or healthy nutritional value meals may buffer the effects of work strain on children BMI weight status. It is worth noting here that Bossard and Boll (1950) found that Sunday dinner was an important family ritual among a number of the people they studied. For many of these subjects, Sunday dinner occurred at mid-day and in present times such a family ritual may be associated with a special meal consumed after church services.

In conclusion, work spillover, family meal rituals and parenting styles were found to have a relationship with children obesity measures for both the 9-11 and 13-15 age groups. However, these relationships are less strong when combined into a full model. Although the relationship between mothers' work strain and mothers' controlling parenting style and obesity-related variables remained significant, there was no evidence that a maternal or paternal parenting style moderates the relationship between work spillover and children obesity measures. Future studies may wish to examine whether increased food choice of children buffers the impact of controlling parents on children's overweight and obesity. Also, studies could investigate whether parenting style moderates more specific job factors which affect children's weight status such as work commitment, work flexibility and job loyalty.

This research is distinctive in that it investigates a combination of external and internal household factors that have not yet been examined as yet in combination to impact on children's outcomes. In addressing the influence of these multiple components, this research contributes to work-family theory development and informs employers, families, nutritionist, family life educators, and health and youth

development professionals regarding the role of work spillover, family meals, and parenting

#### Theoretical Implications

It is Important that we continue to examine mothers and fathers separately to understand how each are impacting children's outcomes so paternal and maternal parenting can be addressed more specifically in parental training programs rather than automatically generalizing results to both parents. The study supports a body of evidence that suggest authoritarian parenting style is associated with negative outcomes in children.

Exploring beyond physical activity and dietary control are important steps to addressing the obesity epidemic. Furthermore, children watching TV while eating meals should continue to be discouraged as a healthy weight status choice with children under age 12.

The study demonstrated differences in how independent variables related to different age groups of 9-11 and 13-15. Recognizing the developmental changes in youth is important to enhance our intentionality with prevention and intervention efforts.

A surprise finding was that the study did not provide an explanation of why some children have maintained a healthy weight.

#### Practical implications

Employers should consider implementing work schedules that are permissive of evening flex time for working mothers, particularly those with younger children 11 and under when maternal dependence is generally highest.

*Mothers Work to Family Spillover and Controlling Behaviors*

The implications here are that children's obesity may partially be explained through mechanisms associated with mothers' work to family spillover. Fathers' spillover held a weaker association with BMI outcomes in children. There appears to be a mechanism of mothers' work that is associated with children's overweight in younger children. The same association was not found in older children, which suggests that the spillover affect may weaken as children become more autonomous adolescents. Older children were more likely to be overweight when maternal parents were controlling. What may be as important is that study did not show any parenting styles association with younger children's weight status in the multivariate models. We may be seeing the response of children perceptions in adolescence to the controlling behaviors exhibited by parents with younger children.

The study may also be alerting us to the delayed effects of controlling parents children eating behaviors that show up in older children (learned behavior to eat all that is on the plate). If in fact mothers are preparing the majority of home cooked family dinners in households, then time-based role strain associated with work may be partially explaining a contributing factor to a growing children obesity epidemic. Such would support Altobelli and Moen (2007) elucidation on how time-based role strain occurs when time in the work or family domain interferes with other domains. The author acknowledges that there are those that may suggest a reduction in working mothers from the workplace. However, the author opines that this blaming the victim mentality devalues the positive and necessary contributions of mothers in the workplace. The focus

should be on how to maintain those valued skills and attributes of working mothers that make work places better while being mindful of the need for greater work-family balance support as a protective resource for families; particularly children under 12 years of age.

The study's findings add strength to the argument that a mother's presence in the workplace outside the home may be a contributing factor to the rise in obesity that has mirrored an increase in women into the labor force over 3 decades. Such findings support the hypothesis that a mother's entry into the work place has at least altered how children in the US consume meals. While the findings suggest an impact from mothers, they do not suggest the mere entry into the workplace is associated with children overweight status. However, that when a mother experiences work role strain there is a correlation between spillover and higher BMI weight status in children. This study does not advocate the reduction of mothers from the workplace, but calls to attention to the important need for work place managers to become more sensitive to and aware of the need to reduce such work role strain and to develop work practices that are supportive of a reduction of work to family spillover that is harmful to families.

#### *Mothers Controlling Behaviors*

The study informs us that parenting programs discouraging authoritarian parenting style practices should begin to infiltrate parenting programs attempting to affect childhood obesity. Findings support previous studies reporting authoritarian parenting style, which includes a more demanding rather than nurturing style of parenting style, is associated with childhood obesity (Decaluwe et.al, 2006; Eckstein et al., 2006). The result held for

maternal parents only and no significant parenting style was found in the model for paternal parents. If children experience control from parent during meals, I hypothesize that children are being asked to “clean their plates” and are likely to be compliant. The literature on authoritarian parenting style also associates a number of malignant behaviors of children who have authoritarian parents, particularly when they get away from the restrictions of parents. Here, children are likely to practice resistance and eat meals that are not likely to be sanctioned by a controlling maternal parent.

#### *Fathers' Dinner Meal Ritual*

Parenting intervention programs should target fathers as an important source of modeling the importance of family meals for children. This may be particularly helpful for adolescents whose lives may be in turmoil. Fathers should be encouraged to use great restraint against involvement in commitments that take away from their ability to be present during family dinner time with their adolescent children. Perhaps leisure programs that threaten children's ability to eat dinner with their families should consider incorporating family dinner time into their evening programming or otherwise reduce the amount of programming that take place during critical family dinner time hours.

#### *Children Watching Eating While Watching TV*

There is evidence presented that builds on a body of work that has demonstrated that children watching TV while eating meals is associated with higher levels of BMI measure for children. Children watching TV during meals may be explaining lack of paternal and/or maternal presence where children are self-selecting alternative meal



choices. Thus children are likely to eat quick fix meals with little health planning consideration given to meal preparation.

### *Social Policy*

The U.S. Department of Health and Human Services have recommended children and adolescence ages 6-17 participate in at least 60 minutes of daily physical activity, yet our public education system has recently been slipping away from a commitment to recess. If we followed what works, we would set policy that protects children's opportunities to exercise during recess which we would expect to lessen chances of obesity and which in turn should have a favorable impact on children self-esteem. Knowing that a link between obesity and self-esteem exist (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004), and family meal ritual is positively related to higher self-esteem, there is a need to examine whether controlling parenting and work to family spillover are negatively related to children's self-esteem. If this is the case, can the positive correlation between family meal rituals and self-esteem provide enough of a buffer of the negative impacts from controlling parents or work to family spillover?

As I reviewed the literature, it is apparent that the obesity epidemic is multi-faceted, and we are not winning the battle with our current focus on curbing obese children or settling on what is causing obesity outside of not eating healthy and burning calories through active exercise. A number of findings have been inconsistent across comparative and longitudinal studies. With so many people focusing on curtailing overweight in the population, we may need to consider refocusing on why some children have maintained a healthy weight and what is keeping those children at a healthy weight

status. It appears that despite numerous interventions, children continue to become overweight. Lopez et al (2008) reported that none of the TV viewing reduction interventions reviewed by their study lowered the prevalence of obesity. It could be that we need to understand better what keeps children from becoming overweight in order to build prevention measures that may stand a better chance of keeping others from becoming overweight. Most studies have examined the ill effects of watching TV. We know that many children watch TV. It may be that we need to be asking what are the healthy weight children watching, if at all. According to Shepard (2005), addressing obesity through prevention may be easier than interventions aimed at correction. Such prevention efforts should start early on in childhood development.

The role of parents in helping to control childhood overweight is multifaceted and complex. Parents not only help mold and shape specific children's behaviors, but also influence children's attitudes and beliefs about food and eating practices. During the past 10 years researchers have examined the impact of specific feeding practices on child calorie intake and weight. However, the socio-emotional impact of parenting and stability provided by effective family functioning can also play a role in the development of healthy eating behaviors. We argue that these larger parent-level influences interact with specific behaviors to modify their impact on childhood overweight. Understanding the impact of these more global parental influences and trying to intervene at this level may provide additional strategies to help curb the growing rate of obesity. Further understanding of these complex interactions will provide a more comprehensive and

potentially more effective strategy that can be implemented to help reduce the rate of overweight among our children.

### **Limitations**

The present sample was limited to children aged 9-11 and 13-15 who reside in the Houston Metropolitan Statistical Area. In addition, this sample was not fully representative of Houston families with children in that this sample contained fewer low-income families as well as fewer minority families than suggested by the United States Population Census. Finally, to increase response rates, future work in this area should consider alternative methods to reach underrepresented families in this study sample.

Finally, it is noted that the processes investigated and reported here is part of a larger phenomenon: the work-family interface. It is understood that both positive and negative influences can flow between these two settings and they can flow in both directions. However, this study focused on the negative influences flowing in a single direction and how family resources might buffer those influences. As researchers, it is important to accept that our work is part of a larger, more complex system and that we contribute a manageable part that suits our interest. Therefore, the present work is intended to add to a broader body of work concerned with understanding better the interface between work, family and good health.

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