Borrower: TFW
Lending String: EXW,EXW,*CIN,CIN,TJC
Patron: Weiner, Michelle
Journal Title: Advances in sociology research.
OCLC: 53338845
Volume: Issue:
Month/Year: 2011 Pages: 1-30
Article Author:
Article Title: Dinnertime Rituals for Children in Married and Divorced Families; Explaining the Link Between Divorce and Academic Motivation
Imprint: Hauppauge, N.Y.; Nova Science Publisher

DATE: 6/7/2012 8:38:43 AM
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Chapter 1

DINNERTIME RITUALS FOR CHILDREN IN MARRIED AND DIVORCED FAMILIES: EXPLAINING THE LINK BETWEEN DIVORCE AND ACADEMIC MOTIVATION

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ABSTRACT

Data from parent interviews and child diaries collected during the Family Routines and Eating Habits study were used to examine the relations between family structure, diet quality, dinnertime rituals, and academic achievement (N =34). It was hypothesized that (1) family dinnertime routines will be related to positive eating habits, (2) Positive eating habits will be related to better achievement motivation, (3) Children from divorced/separated families will have a higher risk for obesity and lower achievement motivation compared to peers in married/cohabitating families; (4) Dinnertime rituals will explain the link between divorce and children’s achievement motivation; and (5) Dinnertime rituals will predict lower obesity risk. Analysis indicated support for hypotheses 3 and 4 and partial support for hypothesis 2, whereby, eating breakfast (but not overall obesity risk) was positively related to better children’s academic motivation (hypothesis 2), and children from divorced families had a lower level of achievement motivation compared to children from married families (hypothesis 3), and more dinnertime routines were related to higher achievement motivation in children after controlling for family structure. The importance of family routines and eating habits is discussed as a way to encourage achievement motivation in children.

The health and well being of American children is in a state of emergency. One in 7 American children and adolescents are overweight (Schwimmer, Burwinkle, & Varni 2003). Obesity is a serious health concern because it places children at risk for many health problems including high blood pressure, type 2 diabetes, heart disease, cancer, and stroke (Serdula, et al., 1993). In addition, individuals who are overweight during childhood are at an increased risk for becoming obese adults. Besides the health risks presented by obesity, children’s academic performance can also be negatively impacted by overweight (Florence, Asbridge & Veugelers, 2008) and results in a decrease in school attendance (Schwimmer et al., 2003).
From an ecological viewpoint, the family plays a major role in socialization (Bronfenbrenner, 1979). Family routines and structured rituals provide children both explicit and implicit cues regarding the family dynamics and expected behavior of family members, which supports child development (Spagnola & Fiese, 2007). Family meals provide recurring and informal opportunities for parents and children to engage in activities that promote intellectual development. Planning a meal, going grocery shopping together, preparing the meal, eating, and cleaning up after the meal provide opportunities for socialization and communication between family members. Because routines and rituals support child development, it is important to understand factors and transitions that may cause changes within a family structure (i.e., separation or divorce) and stress within the family. Taking a more narrow approach and focusing on the rituals surrounding mealtimes is important because rituals involve role assignment, conversation, and promoting family routines and values. As such, dinnertime can be perceived as a family ritual that is indicative of overall family functioning (Fiese, 2006; Douglas, 1968). In the current study, dinnertime family meals are investigated as a tool for promoting better eating habits and increasing achievement motivation in children who have experienced a family transition, namely divorce.

**MIDDLE CHILDHOOD**

Middle childhood is a developmental period that spans from approximately 6 to 12 years of age (Eccles, 1999) when self-esteem emerges, individuals compare themselves to peers, and performance expectations appear. As children transition from early to middle childhood some emotional and cognitive factors change while others remain consistent. A 3-year longitudinal study of children starting in first, second, and fourth grades by Wigfield and Eccles (1994) provided evidence that competency beliefs (i.e., how good a child is at a given activity), usefulness beliefs and importance beliefs decreased over time in math, reading, music, and sports (Wigfield & Eccles, 1994). Despite the changes in competency, usefulness, and importance beliefs, children’s self-esteem and perceived interest in math and science remained constant. The study then looked at sixth and seventh grades students, which revealed that self-esteem and competency beliefs both decreased over time as children transition into preadolescence. This decrease in self-esteem that occurs at the end of the elementary school years as children transition into adolescence, further highlights the necessity for research targeting this population in order to better serve this age group.

From 6 to 12 years old, children experience rapid cognitive growth, which includes the emergence into formal operations for many. Between the ages of 6-12 children are thought of as being in the concrete operational stage where they learn to use logical reasoning and perform concrete operations (Piaget, 1972). After concrete operations, children move into the formal operational stage where they develop the abilities to use abstract, idealistic, and logical thinking. During the middle-childhood years, children become attentive not only to their own schoolwork, but are also able to attend to the performance and the abilities of others (Butler, 2005).

The cognitive development that occurs during middle childhood is important because research has shown a connection between development during middle childhood and
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During middle childhood the social environment continues to play an important role in children’s development. As children progress through middle childhood and into higher grades, school culture begins to play an increasingly important role in understanding student motivation (Maehr, 1991). Although academic achievement has long lasting implications in a child’s potential for academic success, completion of high school, and job attainment later in life, the psychological construct of achievement motivation appears to be an early warning sign for later academic struggles. In addition to exploring a child’s motivation and self-perception in class, physical readiness for learning is an important factor that influences academic performance.

Given the importance of middle childhood and the implications for later development and academic success, achievement motivation is the focus of this study, specifically in light of family processes, namely, family routines and family stress, that may explain concurrent adjustment. Specifically, we argue that dinnertime rituals and routines are closely related to children’s achievement motivation and may prove a useful tool to help families cope during times of stress.

Achievement Motivation

Achievement motivation is a type of motivation that is strongly associated with feelings of competence in learning and efforts toward achieving performance goals (Dweck, 1986). In essence, achievement motivation embodies one’s aspirations to succeed at a given academic task. For example, achievement motivation embodies a student’s desire to complete assignments, attend to class materials, and perform well on tests and exams. Motivational beliefs and self-regulated learning strategies are two components of achievement motivation. Motivational beliefs, in turn, include self-efficacy, intrinsic values, and levels of test anxiety. Self-efficacy is an individual’s perception and beliefs regarding their own abilities and skills (Schunk, 1991). Both parents and teachers can positively influence children’s self-efficacy beliefs about academic motivation and math performance (Friedel, Cortina, Midgley, & Turner, 2010). In addition to self-efficacy, intrinsic value is another aspect of motivational beliefs, which support achievement motivation.

Intrinsic value describes a student’s beliefs regarding the importance of completing a specific task (Pintrich & DeGroot, 1990) and plays an important role in a student’s choice regarding classroom engagement. Besides influencing behavior, intrinsic value is significantly related to the use of cognitive strategies and self-regulation. In addition to intrinsic value, test anxiety plays an important role in students’ academic motivational beliefs.

Unlike self-efficacy and intrinsic value, test anxiety has a negative impact on achievement motivation. Culler and Holahan (1980) found a negative relationship between test anxiety and grade point average (GPA) and a positive relationship between GPA and study skills, whereby students with more test anxiety displayed poorer study skills. In addition to motivational beliefs (i.e., self-efficacy, intrinsic values, and test anxiety), self-regulated learning strategies are another aspect of a child’s achievement motivation.

Self-regulated learning strategies related to academic motivation include cognitive strategy use and self-regulation. Self-regulated learning was defined by Zimmerman (1989) as
"actions and processes directed at acquiring information or skill that involve agency, purpose, and instrumentality perceptions by learners" (p. 329). Examples of self-regulated learning strategies include organizing information and using memory aids. Cognitive strategy use is a component of self-regulated learning strategies, whereby the individual makes a conscious effort to attend to and retain important information from class lecture, discussion, and readings.

Cognitive strategy use requires that a student be cognitively engaged in learning. Furthermore, intrinsic value towards learning may play a role in individual differences regarding children’s use of cognitive strategies (Pintrich & De Groot, 1990). It appears that children must have motivation for learning in order to utilize cognitive skills and self-regulation strategies to promote learning.

Achievement motivation examines an individual’s desire for learning. Intrinsic value, self-efficacy, test anxiety, self-regulation, and cognitive skills are five factors that are used to help measure and better understand children’s motivation for learning. Achievement motivation is important to understand because it is related to children’s school performance in math and reading grades in elementary school (Stevenson & Newman, 1986) and to increases in GPA for 6th and 7th graders (Anderman, Anderman, & Greisinger, 1999). Understanding how children’s environment, including diet quality, influences their achievement motivation for school is the focus of this study.

Children’s diet quality has been reported to influence children’s academic outcomes. Eating breakfast may improve cognitive functioning, school performance (Taras, 2005), and academic performance among children (Rampersaud, Pereira, Girard, Adamsa, & Metzl, 2005). Considering the established relationship between children’s school achievement and eating breakfast, diet quality may be an important factor in understanding children’s achievement motivation.

Diet Quality

Families who eat meals that are planned in advance tend to eat more fruits and vegetables (Boutelle, et al., 2003). In addition to increased quality of food, family dinners are inversely related to the prevalence of overweight adolescents (Tarveras, et al., 2005). Family meals provide the opportunity for a homemade meal. Food prepared at home tends to be lower in calories, higher in nutritional value, and lower in saturated fat when compared to premade, store bought, restaurant, or fast-food meals (Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003).

Children who skip breakfast, consume sugary drinks or have diets high in calorie dense foods, and eat meals not prepared at home are at increased risk for poorer health outcomes such as obesity (Stephens & Summer, 2008) compared to peers with healthier eating habits. In a study that focused on the relationship between diet quality and academic performance, consuming food from all recommended food groups, including an increase in consumption of fruits and vegetables, and a small intake of fat, was considered to be a healthy diet (Florence, Ashbridge, & Veugelers, 2008). Consuming a healthy diet made a positive contribution to academic performance in fifth grade students (Florence, Ashbridge, & Veugelers, 2008). Considering the large number of overweight children in America who are not eating a high
quality diet (Stephens & Summer, 2008), it is vital to understand how diet quality is affecting the academic performance of our nation’s children.

Diet quality is an important factor in physical, emotional, and cognitive development. Poor diet quality, including an inadequate daily consumption of fruits and vegetables is linked with lower family connectedness, unhappiness with weight, and poor academic achievement for adolescents (Neumark-Sztainer, Story, Resnick, & Blum, 1996). This body of research provides evidence of negative outcomes related to poor diet quality among children. Cross-sectional studies have found that children who regularly eat dinner with family members are significantly less likely to be overweight and more likely to have healthier eating habits compared with those who eat less regularly with the family (Taveras et al., 2005). Several factors may explain why family meals promote positive eating habits including: learning to eat at a slower pace, learning to recognize internal satiety cues, a decrease in consumption of fast food, and an increase in consumption of fruits and vegetables compared to children who do not eat regular family meals (McCaffrey, Rennie, Wallace, & Livingstone, 2007).

Family time can be composed of household chores, shopping, playing, conversations, and eating meals. Reports show that children spend approximately 5 hours and 30 minutes participating in household chores and shopping per week, and an additional 9-hrs-per week were spent eating (Hofferth & Sandberg, 2001). Other studies show that family eating is the most common shared activity followed by TV watching time (Mestdag & Vanderweyver, 2005). Reports by the National Survey of Children’s Health (2003) indicate that 47.2% of children aged 0-17 are eating meals together with their families on a daily basis. That number jumps to 70% of children who ate family meals at least four times per week. A Gallop Poll from 2003, shows that only 28% of families with children under the age of 18 reported eating evenings meals together 7-nights a week compared to 37% of families in 1997 (Kiefer, 2004).

**Family Meals**

Eating family meals prepared at home is one technique that has been suggested to promote healthy eating habits among children (Stephens & Summer, 2008). Children who eat family meals prepared at home generally consume fewer calories and eat more fruits and vegetables, two qualities vital to promoting healthy eating habits in children, compared to children who eat meals prepared outside of the home. In addition to the nutritional value of the food consumed during family meals, routines and rituals occurring during meal times are an important factor in understanding overall family functioning.

Family meals provide an opportunity for communication between family members and promote family rituals and routines. The rituals and routines that are embedded in family rituals set the tone for daily life and showcase the relationships within a family’s structure (Fiese & Spagnola, 2007). Within the family context, routines and rituals provide a way of understanding communication, commitment, and continuity of family members (Fiese et al., 2002). Family mealtimes are opportunities for families to spend time together, a factor that is associated with a more stable and organized family life and with raising children with fewer behavior problems (Hofferth & Sanberg, 2001).

Family meals highlight cultural, religious, and ethnic customs. Blessings, food choices, and seat assignments all reflect the traditions and beliefs of a family (Fiese, Foley, & Spagnola, 2006). Family meals are full of rituals (e.g., recipes, blessings, or dishes) and
routines (e.g. setting or clearing the table) (Fiese, Foley, & Spagnola, 2006). The family mealtime is just one example of how routines and rituals manifest and influence the way in which events are carried out.

Routines involve instrumental communication whereas rituals involve symbolic communication (Fiese & Spagnola, 2007). Routines that surround the family meals include: who prepares the meal and how the meal is prepared, who sits in which seat at the table, and the types of conversations that occur. Beyond the routine, the meaning that each family member perceives from the routines exemplifies the ritual aspect of the family mealtime.

**Dinnertime**

The routines and rituals that unfold during family meals, especially dinnertime, have proved to be a useful diagnostic tool for overall family functioning (Douglas, 1968). For many families, dinner is the only time of the day that all family members are together and participate in a common activity. Fiese and Schwartz (2008) discuss the importance of family meals in terms of providing a valuable venue for emotional release, communication, and development of family relationships. Reviews of the day’s events, sharing of practical information, and planning of future events are often the focus of dinner table conversation. Research has shown that families use dinner table conversations as a tool for promoting children’s language development (Ely, Gleason, MacGibbon, & Zaretsky, 2001). Not only do parents engage their children in conversations during dinnertime, but they also teach children proper use of language and provide children with feedback. The use of such meta-language during dinnertime conversations provides children with opportunities for intellectual development. Additionally, family eating has been correlated to children’s literacy development (Snow & Beals, 2006). Mealtimes provide families the opportunity to participate in discussions, provide narratives of the day’s events, and share information between family members.

Engaging in family meals has both physical as well as emotional consequences for family members yet a clear understanding of how times of transition can upset family dinnertime routines is lacking. A change in marital status between parents may challenge previously naturally occurring family routines. Since established family routines and rituals promote child development, (Spagnola & Fiese, 2007), it is important to expand the understanding of how times of transition within families can influence family routines and rituals.

**Divorce**

During separation and divorce, children may experience the following life style changes: economic stressors increase, relationships with parents may be disrupted, and changes occur in residences, schools, and peer groups (Dlugokinski, 1977). Children may have two parents who work, which causes a change in their after school routines. Children whose daily routine included a stay at home parent when parents are married or cohabiting may begin to attend after school day care centers, have a babysitter, or be left alone at home until the custodial parent arrives home after work, once both parents begin to work following separation/divorce.
In addition, children have to take on new familial responsibilities including household chores as family roles are redistributed.

Researchers largely agree that children whose parents divorce are at increased risk for negative developmental outcomes compared to children who have not experienced divorce (Amato, 2001). Children with divorced parents display lower scores on measures of achievement, adjustment, and well being compared to children from families with married parents. A meta-analysis that included 92 studies compared the outcomes of children from married and divorced families (Amato & Keith, 1991). The results showed that children from divorced families scored lower on measures of academic achievement, and psychological outcomes (i.e., conduct, psychological adjustment, and social competence). Looking at health outcomes, children from divorced families showed an increase risk of premature mortality compared to children who never experienced divorce (Tucker et al., 1997). Additionally, studies on family health show that marital status was related to the health status of both parents and children, favoring those from married families (Guidubaldi & Cleminshaw, 1985).

The process of change in family structure is a time of increased stress for both parents and children. The divorce-stress-adjustment perspective (Amato, 2000) highlights how stressors experienced by parents and children mediate the adjustment outcomes of individuals involved. Adult and children experience stress related to the process of divorce including: loss of emotional support, continuing conflict, and a decline in economic stability. Despite the negative effects of stressors, positive factors may mediate the negative influence of stress on overall adjustment in children. Employing the divorce-stress-adjustment paradigm, the current study investigates whether family dinnertime rituals may be a protective that is at risk for disruption during divorce and whether eating rituals mediate the link between divorce and achievement motivation associated with divorce.

**SUMMARY AND STATEMENT OF PURPOSE OF THE PRESENT STUDY**

Despite what is known about the short and long term risks achievement motivation, the negative consequence of divorce, and the role of families meals, further investigation is needed to understand how dinnertime family meals influence child eating habits and achievement motivation for children between the ages of 8-12 years old. Family routines and rituals are investigated as a mechanism for which to understand children's eating habits and achievement motivation. Understanding the rituals of individual families and the relationship between family rituals and achievement motivation allows researchers to explore the relationship between dinnertime routines and eating habits. Furthermore, dinnertime habits, family routines, eating habits, and children's achievement motivation are considered in light of families who are recently undergoing a time of transition and stress caused by a recent separation or divorce.
Hypotheses

The current research investigates five main hypotheses including: (1) Higher levels of family dinnertime routines will be positively related to better eating habits among children (e.g., consume higher number of produce, fewer sugar-sweetened beverages, eat breakfast regularly, and eat dinner at home), and fewer dinnertime rituals will be related to poorer eating habits (i.e., coming less produce, more sugar-sweetened beverages, and less likely to eat breakfast, more likely to eat dinner out); (2) Positive eating habits will be positively related to higher achievement motivation; (3) Children from divorced/separated families will have a higher risk for obesity and lower achievement motivation compared to peers in married/cohabitating families. Finally, we sought to demonstrate that these trends held true after family structure was controlled. (4) Thus, higher levels of dinnertime rituals are predicted to be related to higher levels of achievement motivation; and (5) Higher levels of dinnertime rituals will be associated with lower obesity risk. A model of all hypotheses is displayed in Figure 1.

![Model Diagram]

Figure 1. Model displaying proposed hypotheses.

Method

Participants

The sample included 34 families with children between the ages of 8 to 12.9 years old ($M = 10.31, SD = 1.36$) and parents between the ages of 36 to 52 years old ($M = 43.64, SD = 4.60$). Out of the 34 families, 11 families were recently divorced and/or separated (32%). Out of the 34 children, 10 children were female (30%), and 29 parents were female (85%). All parent and child participants were fluent in English and from diverse socio-economic and
ethnic backgrounds as shown in the Tables 1 and 2. Participants were compensated $30 for
their participation in the phone interview and $10 for completing the 5-day eating diary.

Families were recruited from court records (n = 7), online resources (n = 26), and fliers
sent home to children who attended San Francisco Bay Area schools (n = 1). In addition,
families were recruited from those waiting to be seen at the self-help center within the San
Francisco Court House. Families recruited from court records were contacted via a flier that
was mailed home and a follow-up phone call from a research assistant.

A total of 572 families from the courthouse records were mailed a flier. Within a week of
receiving a flier, families received a follow-up phone call from a research assistant in order to
screen the potential participant for eligibility and to answer any questions. If potential
participants were found eligible, an interview was scheduled, and participants received a
packet. Out of the total number of families who were sent a flier and received a follow-up
phone call, 67 potential participants provided researchers with information regarding the
English language fluency (11.7%). Of the 67 participants who indicated language proficiency,
58 (86.6%) were ineligible due to insufficient English language skills. In addition, 28 families
(4.9%) provided the researcher with information regarding the age range of their children.
Out of the 28 families, 23 (82.1%) reported not having children between the ages of 8-12
years old.

Online local family networks in the San Francisco Bay area such as Berkeley Parents
Network (BPN) and online resources such as Craig’s List (i.e., craigslist.com) were used for
recruitment. Posting were made to the weekly BPN newsletter beginning the week of August
19, 2009 and were submitted for approximately 40 consecutive weeks. The advertising in the
BPN newsletter resulted in 46 families completing the online eligibility survey (i.e.,
approximately 1 family per week). Other online efforts were made advertising on craigslist,
which resulted in 46 families completing the online eligibility survey, and 28 completing the
telephone parent and child interview. However, 2 families recruited from BPN who
completed the interviews were not included because they failed to return the consent forms.
In addition, researchers recruited from elementary and middle schools in the San Francisco
Bay Area by sending fliers home with children in weekly take home folders. From the efforts
in the schools, 1 family completed the online eligibility interview.

Fifty-one families agreed to participate in the study and received packets. Out of the total
number of families who received packets, 11 (21.5%) subsequently declined to participate in
the parent and child interviews and the subsequent 5-day parent and child eating diaries. Out
of the total 40 families who completed the parent and child interviews, 3 families failed to
return consent forms (7.5%) and an additional 3 families did not return parent and child
diaries (91% return rate for parent and child diaries). The information for the 6 families (15%)
who completed interviews but were missing consent forms and/or diaries were not included in
analysis.

Materials

Packet

A packet of relevant information was mailed to each family prior to the scheduled
interview (i.e., except for those recruited through the courthouse method, in which case
families were handed a packet on site). Each packet contained: (a) introductory letter, (b)
parent consent form, (c) parent consent form for minor, (d) child assent form, (e) parent interview cards, (f) child interview cards, (g) parent and child diaries (h) two return (pre-stamped and addressed) envelopes for consent forms and diaries. Packets arrived to families within the week prior to the scheduled interview date and were necessary for the interview to be conducted. In the event that a family did not receive their packet, the interview was rescheduled and a second packet was mailed out to participants. All participants were given family ID numbers in order to maintain confidentiality of all participants.

Procedure

Families who were recruited from BPN or from the court records either completed a prescreening survey on surveymonkey.com, and/or an eligibility interview over the phone before scheduling of interview times. Once a family was found to be eligible based on language (i.e., fluent in the English language) and family structure (i.e., child between that ages of 8 to 12, and married/cohabitating or separated/divorced within the past year) requirements, a telephone interview was scheduled for parents and children. After scheduling an interview, a packet of relevant materials was mailed to participants.

At the start of an interview, the parent was instructed to read over and sign two consent forms, one for him/herself (i.e., parent consent) and the second was parental consent for a minor. Participants were then instructed to place the consent forms in the pre-addressed and stamped envelope that was provided and to be returned to the research team. Once consent forms were signed, the researcher began the first interview (i.e., either parent or child). The married/cohabitating parent interview included 265 questions, the separated/divorced parent interview including 275 questions, and the child interview included 247 questions. Each interview took approximately 45-minutes to complete. During the interviews, parents and children were provided with index cards that contained the answer choices for all the scale response choice questions (e.g., likert scales). Once the parent and child interviews were completed, the researcher provided directions to participants for the 5-day eating diary portion of the research project. As part of the diary training, the interviewer guided the participants through completion of the first day of the diary. At the end of the phone interviews, the researcher offered to answer any questions from participants regarding the research project.

Following the interview, the researcher waited for consent forms to arrive. After the participants returned the consent forms the family was sent $30 compensation for their participation in the interview portion of the research project. When the completed parent and child diaries were received $10 compensation for the diaries were mailed to the participants. The compensation packet was mailed out either once (i.e., participants were compensated $40 for both the interview and diary at the same time) or twice (i.e., participants were compensated $30 for the interview, and then again $10 when the diaries were received). The compensation packet included: (a) thank you letter to participants, (b) cashier check (i.e., $30 or $10), (c) confirmation of receipt of payment to be signed by participants and returned to the lab, (d) pre-addressed and stamped envelope.
Table 1. Distribution of the Income of Participants

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<tr>
<th>Income range</th>
<th>Frequency</th>
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<tr>
<td>$10,000-54,999</td>
<td>6</td>
<td>18%</td>
</tr>
<tr>
<td>$55,000-99,999</td>
<td>10</td>
<td>29%</td>
</tr>
<tr>
<td>$100,000+</td>
<td>18</td>
<td>53%</td>
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Table 2. Description of Ethnicities of Individuals Included in the Sample

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<th>Ethnic Breakdown of Sample</th>
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<tr>
<td>Caucasian/European American</td>
<td>22</td>
<td>65%</td>
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<tr>
<td>Asian and Asian American</td>
<td>6</td>
<td>18%</td>
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<tr>
<td>Hispanic/Latino</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td>Other (i.e., Black, Multi-Racial, and Russian-Jewish)</td>
<td>3</td>
<td>9%</td>
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Measures

Parent Interview

**Family Structure.** Questions regarding family structure were included in the eligibility interview and were used to select and exclude potential participants that did not meet eligibility. Questions included: “What is your current marital status?” and “Have you been separated or divorced from your partner or spouse within the past year?” Furthermore, questions related to number of children, and their ages were also included during the parent interview.

**Family Rituals Questionnaire** (FRQ; Fiese, 1992). The FRQ examines settings and behaviors involved in performing family rituals. Eight questions of the dinnertime subscale were included. This measure was chosen because the questions are worded in a way that is all inclusive of all families. For each question, two contradictory statements are made, with a “but” in between. After hearing the two statements, the participant is then given the opportunity to choose two answer options (i.e., “really true” or “sort of true”) for each question pair. The scales include questions related to 8 dimensions of the family ritual including: occurrence, roles, routines, attendance, affect, symbolic significance, continuation, and deliberateness (Fiese, 1992). The answers from the 8 questions were used to create a mean score of family dinnertime rituals, where a higher score indicated more ritualized dinnertime behavior. Descriptive statistics regarding the FRQ can be found in Table 3. Both parents and children completed the FRQ scale during their respective phone interviews.
Table 3. Descriptive Statistics and Range for Family Rituals Questionnaire (FRQ), Family Routines Inventory (FRI) and the Family Routines Inventory Dinnertime Questions (FRID)

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<th>Range</th>
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<td></td>
<td>Min</td>
<td>Max</td>
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<tr>
<td>FRQ</td>
<td>1.13</td>
<td>3.88</td>
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<tr>
<td>FRI</td>
<td>2.05</td>
<td>2.96</td>
</tr>
<tr>
<td>FRID</td>
<td>1.0</td>
<td>3.0</td>
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For the 8 questions scale, 5 items were recoded so that a greater endorsement of the item indicated more dinnertime ritual. The alpha for the parent dinnertime ritual score was .63. The dinnertime ritual score was also created for the children, using the same technique that was used to create the parent dinnertime score. However, due to a very low alpha (.10), the parent report for dinnertime rituals was used for analysis. Further examination of the low alpha showed that the alpha for children in fourth grade and above was (α = .53)

**Family Routines Inventory.** The FRI scale was created by Jensen and colleagues (1983) and is made up of 23 items. The reliability for this scale is (alpha) .77. The FRI is a likert scale and consists of statements asking about daily routines with answer choices including: 1 “never,” 2 “sometimes,” and 3 “a lot.” Additional information regarding descriptive statistics can be found in Table 3.

**Family Rituals Inventory:** Dinnertime Subscale (FRID). A dinnertime subscale was created from the FRI (Jensen, et al., 1983) that was collected during the parent interview. This subscale included 2 items: (a) “The family ate at the same time each night”, and (b) “the whole family ate dinner together almost every night.” The range of responses for the two questions included: 1 “never,” 2 “sometimes,” and 3 “a lot.” The responses to these two items were used to create a mean score, which was entitled FRI dinnertime subscale for the parent scale (n = 34, α = .80). Additional information regarding descriptive statistics can be found in Table 3.

**Child Interview.**

**Motivated Strategies for Learning Questionnaire (MSLQ).** The MSLQ measures motivational beliefs and self-regulated learning strategies (Pintrich & De Groot, 1990). The MSLQ includes 3 subscales of motivational beliefs (i.e., self-efficacy, intrinsic values, test anxiety) and 2 subscales of self-regulated learning strategies (i.e., cognitive strategy use and self-regulation). The scores from all subscales were combined to create one mean score, which was used to represent a child's overall achievement motivation where a higher score indicated more achievement motivation and a lower score indicated less achievement motivation. Based on the high correlation between cognitive strategy use and self-regulation that was reported from the reliability and validity reports of the original scale (zero order correlation=.63, p< .001; Pintrich & De Groot, 1990), the cognitive strategy subscale was
ire (FRQ),

Table 4. Mean and Standard Deviation for Child Achievement Motivation based on MSLQ and subscales for total sample and subgroups

<table>
<thead>
<tr>
<th></th>
<th>Total (n = 29)</th>
<th>Married (n = 23)</th>
<th>Divorced (n = 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>MSLQ</td>
<td>2.93</td>
<td>.37</td>
<td>3.0</td>
</tr>
<tr>
<td>MSLQ: IV</td>
<td>2.84</td>
<td>.55</td>
<td>2.91</td>
</tr>
<tr>
<td>MSLQ: SE</td>
<td>2.94</td>
<td>.49</td>
<td>3.01</td>
</tr>
<tr>
<td>MSLQ: SR</td>
<td>2.75</td>
<td>.39</td>
<td>2.80</td>
</tr>
<tr>
<td>MSLQ: TA</td>
<td>1.60</td>
<td>.55</td>
<td>1.48</td>
</tr>
</tbody>
</table>

Note. MSLQ = Motivational Scale for Learning Questionnaire (Pintrich & De Groot, 1990). Subscales included: Intrinsic Value (IV), Self-Efficacy (SE), Self-Regulation (SR), and Test Anxiety (TA).

Table 5. Correlation Table of MSLQ and subscales

<table>
<thead>
<tr>
<th></th>
<th>MSLQ</th>
<th>MSLQ: IV</th>
<th>MSLQ: SE</th>
<th>MSLQ: SR</th>
<th>MSLQ: TA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSLQ</td>
<td>1</td>
<td>.87**</td>
<td>.83**</td>
<td>.77**</td>
<td>-.32</td>
</tr>
<tr>
<td>MSLQ: IV</td>
<td>.81</td>
<td>1</td>
<td>.64**</td>
<td>.53**</td>
<td>-.06</td>
</tr>
<tr>
<td>MSLQ: SE</td>
<td>.97**</td>
<td>.82*</td>
<td>1</td>
<td>.51**</td>
<td>-.11</td>
</tr>
<tr>
<td>MSLQ: SR</td>
<td>.80</td>
<td>.33</td>
<td>.80</td>
<td>1</td>
<td>-.20</td>
</tr>
<tr>
<td>MSLQ: TA</td>
<td>-.18</td>
<td>.24</td>
<td>.04</td>
<td>-.31</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. Below the diagonal represent the correlations for the divorced/separated subscale only. MSLQ stands for the Motivational Scale for Learning Questionnaire (Pintrich & De Groot, 1990). Subscales included: Intrinsic Value (IV), Self-Efficacy (SE), Self-Regulation (SR), and Test Anxiety (TA).

*p < .05, **p < .01.

The score for overall achievement motivation was created by taking the average across the 31 items in the motivation for learning strategies scale. For the 31 items, the alpha was .87. An overall average was created, which included at least 25 out of the 31 scores.
Subscales for the motivation for learning strategy scale were also created. The 4 subscales included intrinsic values (IV), self-efficacy (SE), self-regulation (SR), and test anxiety (TA). The IV subscale, consisted of the mean of scores from 9 questions, with an alpha, of .83. The SE subscale was created from the mean of 9 items from the MSLQ, with an alpha of .80 was calculated. The SR subscale was created by averaging 8 questions, with an alpha of .48. The TA subscale was created using 4 items with an alpha level of .60.

**Child Diary.**

**Eating Diary.** The 5-day eating diary included questions related to the daily eating habits that occurred throughout an individual day that was based on child report from the child diaries. Information regarding location of meals, use of technology, number of produce and sugar sweetened beverages consumed, and the intake of meals (e.g., breakfast, lunch and dinner). Each participant was provided with a visual aid to help ensure the accuracy of recording of portion sizes. All participants were instructed to begin the diary on the day the interviews were conducted. In the event that the parent and child interviews were completed on separate days, the diary began following the second interview. Based on the day of the week that the second interview was completed, participants were assigned specific days in which to record eating habits. Specifically, participants recorded 5 out of 7 consecutive days. The 5 days recorded included at least 2-weekend days, 2-week days, and at least 2 days off. From the diary, questions related to breakfast, sugar sweetened beverage and produce consumption, and eating dinner out were used in analysis. Data from all 5 days were combined to create one mean score for each eating behavior. Both parents and children completed the 5-day eating diary. The child eating habit questions included in the child diary can be found in Appendix A.

**Table 6. Descriptive Statistics and Range of Eating Habits Included in Child Diary**

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Eating Breakfast</td>
<td>.33</td>
<td>1.0</td>
</tr>
<tr>
<td>Produce</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Sugar Sweet Bev.</td>
<td>.00</td>
<td>3.40</td>
</tr>
<tr>
<td>Dinner Out</td>
<td>.00</td>
<td>.40</td>
</tr>
<tr>
<td>Obesity Risk</td>
<td>-1.23</td>
<td>1.63</td>
</tr>
</tbody>
</table>

For this study, single items related to eating produce, breakfast, sugar-sweetened beverages, and eating dinner outside of the home were included. For eating produce, children
were asked a single question “How many servings of produce (fruits, vegetables) have you eaten today?” The answer choices ranged from “0,” no servings, to “8,” eight or more servings. Descriptive statistics are included in Table 6. Whether or not a child ate breakfast was measured by a single dichotomous item “Did you eat breakfast today?” and the response options were either “Yes” or “No.” Consumption of sugar-sweetened beverages was measured by a single item, “How many servings of sugar-sweetened drinks have you consumed today? (e.g., soda, Gatorade, fruit punch...)” The answer choices ranged from no servings to eight or more servings, (e.g., 0 to 8). For eating dinner outside of the home, a the item, “Did you eat dinner outside the home today” was included.

**Obesity Risk Score.** This score was created by first averaging 4 eating habits across all 5 days, and then creating a z-score for each eating habit. The standardized scores were weighted (i.e., +1 or -1) and then combined to create an obesity risk score. The eating habits that were used to create the obesity risk score included: eating breakfast, produce consumption, drinking sugar-sweetened beverages, and eating dinner out. Produce consumption and eating breakfast were both negatively weighted (i.e., -1) because they are protective habits, which reduce obesity risk. Conversely, drinking sugar sweetened beverages and eating dinner out were both positively weighted (i.e., +1) because they increase obesity risk. See Table 6 for descriptive statistics of obesity risk factor score.

**Results**

**Hypothesis 1.**

It was predicted that more consistent dinnertime rituals would be positively related to positive eating habits. A correlation was used, however, no significant results were found between parent dinnertime ritual scale (FRQ) and the obesity risk score, $r = -0.21$, $p = 0.26$. Exploring within the items of the composite overall score, there were no significant relationships between children’s eating habits and the parent report of dinnertime rituals. No significant relationships were found between the average number of breakfasts children consumed and the FRQ, $r = 0.27$, $p = 0.12$, and no significant relationship found between the average amount of produce consumed and the FRQ, $r = 0.11$, $p = 0.58$. The relationship between average consumption of sugar-sweetened beverages and FRQ was not significant, $r = 0.11$, $p = 0.87$, but was in the predicted direction. Furthermore, the relationship between the average number of dinners eaten out and FRQ was not significant, $r = 0.06$, $p = 0.73$, and was not in the predicted inverse direction. See Table 7 for the correlation matrix between eating habits and the Parent FRQ. Therefore, the results do not show support for hypothesis 1.

Post hoc investigation of the relations among dinnertime rituals and eating revealed a significant relationship between children’s report of eating habits from the 5-day diary and the dinnertime questions of the FRI (FRID) that was collected from the parent interview as shown in Table 8. When the two items of the FRI were combined and averaged to create the FRID subscale, a significant relationship emerged between more average sugar-sweetened beverages consumed by children as reported by the child diary and less consistent dinnertime rituals, $r = -0.41$, $p = 0.02$. No other significant relationships emerged between the FRID mean score and the other eating habits. FRID was not significantly correlated with average breakfast consumption, $r = -0.23$, $p = 0.20$. No significant relationship emerged between FRID and average produce consumption, $r = 0.13$, $p = 0.47$, nor was there a significant relationship
between FRID and average eating dinners out $r = -.00$, $p = .98$. Broadening the scope of investigation and including two scales of dinnertime rituals and routines (i.e., FRQ and FRID) allowed a significant negative relationship to emerge between family dinnertime rituals and consumption of sugar-sweetened beverages providing limited support for hypothesis 1.

Table 7. Correlation Matrix between Eating Habits and Parent Family Rituals Questionnaire (FRQ)

<table>
<thead>
<tr>
<th></th>
<th>Breakfast</th>
<th>Produce</th>
<th>Sugar Bev.</th>
<th>Dinner Out</th>
<th>FRQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>1</td>
<td></td>
<td>-.11</td>
<td>.04</td>
<td>.27</td>
</tr>
<tr>
<td>Produce</td>
<td>.76*</td>
<td>1</td>
<td>-.09</td>
<td>-.14</td>
<td>.11</td>
</tr>
<tr>
<td>Sugar Bev.</td>
<td>.30</td>
<td>-.08</td>
<td>1</td>
<td>-.12</td>
<td>-.03</td>
</tr>
<tr>
<td>Dinner Out</td>
<td>-.35</td>
<td>-.32</td>
<td>-.28</td>
<td>1</td>
<td>.07</td>
</tr>
<tr>
<td>FRQ</td>
<td>.75*</td>
<td>.44</td>
<td>.10</td>
<td>-.01</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. Above the diagonal of the matrix is the entire sample, and below the diagonal included the separated/divorced subsample only.

Family Routines Questionnaire parent report (FRQ: Fiese, 1992)

* $p < .05$. ** $p < .01$.

In addition to examining relations between the child report of eating habits from the 5-day diaries and parent reports of the FRQ and FRID, mean differences were also examined. Despite a non-significant relationship between the eating habits and the FRQ obtained during the parent interview, and the eating habits of the total sample obtained from the child diaries, a significant relationship emerged for the separated/divorced group between the FRQ and eating breakfast, $r = .75$, $p < .05$, such that higher levels of family routines were related to more breakfast consumption as shown in Table 8.

Hypothesis 2.

It was predicted that there would be a positive relationship between children’s achievement motivation and positive eating habits such that better achievement motivation would be associated with fewer negative eating habits. A correlation was run in order to investigate the relationship between achievement motivation, and children’s eating habits as reported in the 5-day diary.
Dinnertime Rituals for Children in Married and Divorced Families

Table 8. Correlation Table of Dinnertime Ritual and Routines based on Family Structure

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>FRQ</th>
<th>FRID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breakfast</td>
<td>.94</td>
<td>.15</td>
<td>.27</td>
<td>.23</td>
</tr>
<tr>
<td>Produce</td>
<td>3.84</td>
<td>1.31</td>
<td>.11</td>
<td>.13</td>
</tr>
<tr>
<td>Sugar Bev.</td>
<td>.69</td>
<td>.94</td>
<td>-.03</td>
<td>-.41*</td>
</tr>
<tr>
<td>Dinner Out</td>
<td>.15</td>
<td>.16</td>
<td>.07</td>
<td>-.00</td>
</tr>
<tr>
<td>Obesity Risk</td>
<td>.19</td>
<td>.44</td>
<td>-.21</td>
<td>-.26</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breakfast</td>
<td>.93</td>
<td>.16</td>
<td>.12</td>
<td>.30</td>
</tr>
<tr>
<td>Produce</td>
<td>3.71</td>
<td>1.37</td>
<td>-.03</td>
<td>.12</td>
</tr>
<tr>
<td>Sugar Bev.</td>
<td>.52</td>
<td>.81</td>
<td>-.03</td>
<td>.01</td>
</tr>
<tr>
<td>Dinner Out</td>
<td>.14</td>
<td>.16</td>
<td>.14</td>
<td>.01</td>
</tr>
<tr>
<td>Obesity Risk</td>
<td>.22</td>
<td>.39</td>
<td>-.11</td>
<td>-.35</td>
</tr>
<tr>
<td>Separated/Divorced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breakfast</td>
<td>.95</td>
<td>.11</td>
<td>.75*</td>
<td>.16</td>
</tr>
<tr>
<td>Produce</td>
<td>4.09</td>
<td>1.22</td>
<td>.44</td>
<td>.37</td>
</tr>
<tr>
<td>Sugar Bev.</td>
<td>1.02</td>
<td>1.13</td>
<td>.10</td>
<td>-.71*</td>
</tr>
<tr>
<td>Dinner Out</td>
<td>.16</td>
<td>.17</td>
<td>-.01</td>
<td>.00</td>
</tr>
<tr>
<td>Obesity Risk</td>
<td>.10</td>
<td>.56</td>
<td>-.42</td>
<td>-.28</td>
</tr>
</tbody>
</table>

Note. Measures include Parent report of the Family Routines Inventory (FRQ; Fiese, 1992) and Family Routines Inventory Dinnertime Questions (FRID; Jensen, et al., 1983).

* *p < .05.

There was a significant relationship such that children who reported eating breakfast tended to have higher achievement motivation scores $r = .38, p = .04$. Additional correlations revealed no significant relationship between produce consumption and achievement motivation scores, $r = .21, p = .29$. Furthermore, an inverse, but not significant relationship emerged between more negative eating habits with the consumption of more sugar-sweetened beverage consumption and achievement motivation, $r = -.20, p = .32$. Neither an inverse nor a
significant relationship were found for between eating dinner out and child motivation for learning, \( r = .22, p = .27 \).

Further investigation of eating habits and subscales revealed no significant relationships between any eating habits (i.e., eating breakfast, produce, sugar-sweetened beverages and eating dinner out) and any of the achievement motivation subscales (i.e., intrinsic value, self-efficacy, self-regulation, and test anxiety) as shown in Table 9. For the intrinsic value subscale a marginally significant relationship was found with average number of times eating breakfast, \( r = .36, p = .05 \). Additionally, a marginally significant relationship was found between the intrinsic value subscale and the average number of meals eaten outside of the home, \( r = .38, p = .06 \).

For the self-regulation subscale a marginally significant relationship was found with average number of times eating breakfast, \( r = .34, p = .07 \), as shown in Table 7. A marginally significant relationship was found between self-regulation subscale, and average number of produce eaten, \( r = .35, p = .08 \). The results provide marginal support for a relationship between positive eating habits and the self regulation achievement motivation subscale reported by children. Furthermore, no significant relations emerged between test anxiety and any eating habits.

| Table 9. Correlation between Eating Habits, MSLQ and MSLQ subscales |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
|               | \( M \) | \( SD \) | MSLQ | MSLQ: IV | MSLQ: SE | MSLQ: SR | MSLQ: TA |
| Breakfast     | .94   | .15   | .31** | .37*  | .13    | .34*   | .12    |
| Produce       | 3.84  | 1.31  | .16   | .16   | .06    | .35*   | .09    |
| Sugar-Bev.    | .69   | .94   | -.22  | -.21  | -.05   | -.14   | .32    |
| Dinners Out   | .15   | .16   | .21   | .38*  | .20    | -.07   | .13    |
| Obesity Risk  | .19   | .44   | -.03  | -.23  | .09    | .06    | -.21   |

MSLQ stands for the Motivational Scale for Learning Questionnaire (Pintrich & De Groot, 1990). Subscales include: Intrinsic Value (IV), Self-Efficacy (SE), Self-Regulation (SR), and Test Anxiety (TA).

*\( p < .10 \), **\( p < .05 \), ***\( p < .01 \).

**Hypothesis 3.**

It was predicted that children from divorced/separated families would have a higher risk for obesity and lower achievement motivation compared to peers married/cohabitating families. In order to investigate this hypothesis two independent samples t-test were conducted, first between family structure and obesity, and second, between family structure and achievement motivation.

An independent samples t-test was computed to analyze the differences in the obesity risk factors between children from married/cohabitating families and children from separated/divorced families. The range and descriptive statistics of the obesity risk factor can be found in Table 5. No significant relationship emerged between the obesity risk factor for children from divorced families and children from married families, \( t(28) = .68, p = .51 \), as
shown in Figure 2. Trend differences, although not significant, were observed between the eating habits of children from the married and separated/divorced families. Children from divorced families consumed more breakfast, produce, sugar-sweetened beverages, and ate dinner out more frequently compared to their peers from married families (see Table 8).

![Comparison between Family Structure and Children’s Obesity Risk]

Figure 2. A bar graph displaying a comparison between the obesity risk of children from divorced/separated families and children from married/cohabitating families based on obesity risk scores created from child report of eating habits.

Significant differences were found between the child report of the MSLQ between children from divorced families and children from married families; however, no significant differences emerged between the two groups for the subscales (i.e., intrinsic values, self-efficacy, self-regulation, and test-anxiety). Specifically, for the overall child motivation scale score, a significant difference emerged between children from divorced families \( (n = 6, M = 2.66, SD = .40) \) and children from married families \( (n = 23, M = 2.99, SD = .33) \), \( t(27) = -2.17, p = .04 \), such that children from married/cohabitating reported a higher level of achievement motivation compared to their peers from divorced/separated families as shown in Figure 3. For the 4 subscales of the MSLQ (i.e., IV, SE, SR, and TA), no significant differences emerged.

For the intrinsic value subscale children from divorced families and children from married families \( t(27) = -1.26, p = .22 \) (see Table 4 for descriptive statistics). For the self-efficacy subscale children from divorced families and children from married families, \( t(27) = -1.59, p = .125 \). For the self-regulation subscale children from divorced families, and children from married families, \( t(27) = -1.50, p = .145 \). For the test anxiety subscale children from divorced families and children from married families, \( t(27) = 1.86, p = .11 \).
Hypothesis 4.

It was predicted that families who displayed a high level of dinnertime rituals would display more positive achievement motivation compared to children from families with low levels of dinnertime rituals. In order to analyze dinnertime rituals, the FRQ was used. However, initial independent samples t-test revealed no significant differences between the two groups for the parent response to the FRQ; married and divorced, \( t(32) = -1.04, p = .31 \). Once the t-test was ran, a regression model was used in order to control for the role of family structure on children’s achievement motivation.

In the first regression model, family structure (i.e., married or divorced/separated) was held constant \((\beta = -.39, p = .04)\), as shown in Table 10. In Model 1, family structure accounted for 14.8% of the variance in the child MSLQ score. In Model 2 the parent FRQ was added into the model. However, FRQ did not make a significant contribution to the model, \((\beta = .05, p = .78)\). Therefore, the FRQ was removed from the model and the FRID was used instead to understand the impact of family routines as a whole on children’s eating habits and achievement motivation.

For Model 3, the FRID subscale was entered into the model. Model 3 revealed a significant relationship between FRID subscale and child achievement motivation while controlling for marital status \((\beta = .36, p = .05)\). The family structure and FRID explained 26.8% of the variance of child achievement motivation. A fourth partial correlation was run comparing the parent FRI score risk score and the MSLQ score while controlling for family structure. Model 4 revealed a significant relationship between family structure, FRI and child motivation for school, \((\beta = .53, p = .01)\). According to Model 4, family structure and parent FRI combined explain 35% of the variance in the child achievement motivation. This model revealed a mediation effect for family routines on achievement motivation.
Table 10. Regression of Achievement Motivation on Family Structure, FRQ, FRID, and FRI

<table>
<thead>
<tr>
<th>Model 1 (control)</th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Family Structure</td>
<td>-0.34</td>
<td>0.16</td>
<td>-0.39</td>
<td>-2.17*</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Model 2:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Structure</td>
<td>-0.33</td>
<td>0.16</td>
<td>-0.38</td>
<td>-2.00</td>
</tr>
<tr>
<td>FRQ</td>
<td>0.04</td>
<td>0.13</td>
<td>0.05</td>
<td>0.28</td>
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</table>

<table>
<thead>
<tr>
<th>Model 3:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Structure</td>
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<td>0.16</td>
<td>-0.29</td>
<td>-1.68</td>
</tr>
<tr>
<td>FRID</td>
<td>0.24</td>
<td>0.12</td>
<td>0.36</td>
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</table>

<table>
<thead>
<tr>
<th>Model 4</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Structure</td>
<td>-0.09</td>
<td>0.18</td>
<td>-0.10</td>
<td>-0.49</td>
</tr>
<tr>
<td>FRI</td>
<td>0.90</td>
<td>0.33</td>
<td>0.53</td>
<td>2.7**</td>
</tr>
</tbody>
</table>

*Note. FRQ = Family Rituals Questionnaire; FRID = Family Routines Inventory dinnertime questions; FRI = Family Routines Inventory; Family Structure - 0 = married, 1 = divorced/separated

*p < .05, **p < .01,

Hypothesis 5.

It was predicted that families who displayed a high level of dinnertime rituals would display lower obesity risk compared to children from families with low levels of dinnertime rituals. In order to investigate the influence of family dinnertime routines and child obesity the parent dinnertime scales (FRQ) was used as well as the child obesity risk score. In Model 1, family structure (i.e., married/cohabitating and separated/divorced) was held constant and related to child obesity risk. Model 1 revealed no significant relationship between family structure and obesity risk ($\beta = -0.13$, $p = .51$). In Model 2, parent FRQ was entered into the model, ($\beta = -0.26$, $p = .18$). Even though Model 2 was not significant there the relationship is in the expected direction and family dinnertime rituals appeared to contribute 8.1% to explaining child obesity risk.

In Model 3, the FRQ was removed from the model and the subscale of the FRI, dinnertime scale (FRID) as reported by the parents was added into the model. Model 3 showed that the parent FRI dinnertime questions provided a modest significant relationship to obesity risk, ($\beta = -0.33$, $p = .09$), whereby family structure and FRID explained 11.6% of the variance in child obesity risk. Based on these results it appears that there is some evidence that supports hypothesis 5 and thereby showing that dinnertime rituals and routines may have some influence on children's obesity risk.

In Model 4, the FRID was removed from the model and the parent FRI was included. Model 4 did not reveal a significant influence for the parent FRI ($\beta = -0.05$, $p = .83$) on children's obesity risk. Based on these analysis it appears that family structure and FRID was responsible for explaining the most variance in the child obesity score compared to family structure, family structure and FRQ, and family structure and FRI. A description of the models included in this regression analysis can be found in Table 11.
Table 11. Regression of Obesity Risk on Family Structure, FRQ, FRID, and FRI

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>R²</th>
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<td>.18</td>
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<tr>
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<tr>
<td>Family Structure</td>
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</table>

Note. FRQ = Family Rituals Questionnaire (Fiese, 1992); FRID = Family Routines Inventory
dinnertime questions, FRI = Family Routines Inventory (Jensen et al., 1983); Family
Structure = 0 = married, 1 = divorced/separated
*p < .05. **p < .01.

DISCUSSION

The obesity rate in North America has skyrocketed with 1 in 7 American children and
adolescents currently overweight (Schwimmer, Burwinkle, & Varni, 2003). In addition to
fighting obesity, America’s children have also lagged behind the children of other countries in
math, science, and reading scores. America ranks among the lowest of Western countries in
educational scores (Keifer, 2004). Helping to promote an environment for children that is
conducive to learning and encourages children to develop achievement motivation is one way
to help increase the educational outcomes for America’s youth.

Dinnertime rituals and routines were explored as a protective factor for promoting
healthy eating habits (Tarveras, et al., 2005), because families who eat meals together that are
planned in advance tend to consume a more nutritious diet (Boutelle, et al., 2003). Family
meals have shown to reduce children’s obesity risk (Stephan’s & Summer, 2008) and
encouraging achievement motivation in children (Ely, et al., 2001). Furthermore, positive
eating habits have already been shown to influence children’s academic performance (Taras,
2005; Rampersaud, et al., 2005). Children in families whose parents divorce are at an
increased risk for negative developmental outcomes in achievement, adjustment, and well
being compared to children from married families (Amato & Keith, 1991). Part of the risk in
developmental outcomes of children may be due to the change in family rituals and routines
that occur immediately following separation/divorce (Dlugokinski, 1977).
Research has documented the short and long term risks associated with being overweight as a child (Serdula, et al., 1993; Stephans & Summer, 2008), the importance of achievement motivation (Dweck, 1986; Pintrich & De Groot, 1990), the negative consequence of divorce (Amato & Keith, 1991), and the role of families meals (Fiese & Spangola, 2007; Fiese & Schwartz, 2008). The focus of the current study was to investigate how family dinnertime rituals and routines are linked to positive eating and academic motivation for children, especially children in families who are facing times of transition.

**Obesity Risk and Eating Habits**

The creation of an overall obesity risk score was an attempt to reduce a very complex phenomenon of children’s eating habits into a single score. Analysis was conducted across individual eating habits as well as the overall obesity risk score. The relations between dinnertime rituals and routines, achievement motivation, and family structure were all explored to better understand factors that may influence children’s eating habits.

**Dinnertime Rituals/Routines and Obesity Risk.**

Despite a lack of evidence for the relations between dinnertime routines and rituals and obesity risk, results did show that more consistent family routines were related to more breakfast consumption for the separated/divorced subsample. In light of this significant group difference, eating habits, maybe particularly important for children who are undergoing times of transition, such as change in the marital status of parents. Eating breakfast may be a particularly important eating habit because of its relationship to children’s achievement motivation, as shown by previous research (Rampersaud, et al., 2005). This finding not only replicates the finding from Rampersaud and colleagues (2005), but also highlights the importance of eating breakfast and maintaining family routines for children whose are experiencing times of transition.

**Dinnertime Rituals/Routines and Eating Habits.**

Results revealed limited support for hypothesis 1, whereby one of the five pair-wise comparisons was significant. Specifically, more consistent family routines dinnertime questions were related to reduced consumption of sugar-sweetened beverages. Specifically, the more a parent endorsed having more dinnertime routines, the less sugar-sweetened beverages children consumed as reported in the 5-day child diary. Since consuming sugar-sweetened beverages during childhood is considered to a factor that increases one’s obesity risk (Stephans & Summer 2008), and more consistent dinnertime routines was related to consuming fewer sugar-sweetened beverages, engaging in dinnertime routines may be a tool for parents to use to help decrease negative eating behaviors. Reducing the number of obesity risk provoking behaviors may decrease a child’s risk of become obese later in life.
Achievement Motivation

*Family Structure and Achievement Motivation.*

Significant differences were found between the children from married/cohabitating families and children from separated/divorced families, whereby children from married/cohabitating families reported a higher level of achievement motivation compared to children from separated/divorced families. This provides support for the findings of previous research that found deficits in the outcomes of children from divorced families compared to children who have never experienced divorce (Amato, 2001; Amato & Keith, 1991).

*Dinnertime Rituals/Routines and Achievement Motivation.*

Initial results revealed no significant differences between the parent responses to the family routines questionnaire: dinnertime subscale between married and divorced families. A regression was used to control for family status and tease out the relations between the parent response to the dinnertime rituals questionnaire and the child’s reported achievement motivation. However, no significant relationship emerged between parents reported level of dinnertime rituals and children’s achievement motivation. Since the family ritual questionnaire addressed the meaning behind family dinners, this finding suggests that the rituals related to family dinner may not play roles in shaping a child’s achievement motivation.

An additional regression analysis was conducted to look for relations between achievement motivation and family dinnertime routines as measured by parent response to dinnertime questions in the family routines inventory: when controlling for family structure. A significant relationship did emerge whereby more dinnertime routine as reported by parents’ was indicative of more achievement motivation in children. Despite the time of transition that occurs, maintaining family dinnertimes may be an important factor in helping ease the transition for children and buffer children from some of the negative consequences and outcomes of separation/divorce (Amato, 2001; Amato & Keith, 1991). Promoting families to maintain dinnertime routines may be a type of intervention for recently separated/divorced families.

To explore the link between family routines and achievement motivation, an addition regression analysis was conducted while controlling family structure. This analysis revealed a strong and significant relationship between the parent’s endorsement of family routines and children’s achievement motivation after controlling the role of a family transition. Parents in families who are undergoing separation/divorce might be cautioned take all possible steps to maintain children’s daily family routines in an attempt to limit the negative outcomes on children’s achievement motivation that are possible for children who experience divorce, whereby family routines mediates the impact of family structure on children’s achievement motivation.

*Achievement Motivation and Eating Habits.*

A modestly significant relationship emerged between children’s achievement motivation and the average number of breakfast children reported eating in the 5-day diary at the .10 level. This result provides support for the idea that children who eat breakfast may be more
prepared and able to learn during the school day compared to children who do not eat breakfast. This provides support for research conducted by Rampersaud and colleagues (2005) highlighting the importance of eating breakfast on children’s academic performance. Schools should encourage all students to eat breakfast to be motivated for classroom learning. If students do not eat breakfast may find it difficult to be motivated to learn if they are distracted by hunger. However, no other significant relationship emerged between children’s achievement motivation and the other eating habits that were measured (i.e., produce, sugar-sweetened beverage consumption, and eating dinner out).

Implications

This research has broadened our understanding of how eating habits, family structure, and family routines influence children’s achievement motivation. Specifically, relations exist between eating breakfast and children’s achievement motivation. In light of the significant group difference, which emerged only among the separated/divorced subsample, it is possible that eating habits, such as eating breakfast, are even more important for children who are undergoing a time of transition, such as change in marital status of parents in order to promote achievement motivation.

In addition to the importance of eating breakfast, children from families with regular dinnertime routines and more overall family routines have more achievement motivation compared to children with less family routines. Encouraging families facing a change in marital status to maintain healthy eating habits and family routines may protect children from the negative consequences that separation/divorce has on children’s achievement motivation.

Limitations.

Several limitations exist for the current study. First, the use of the family rituals questionnaire: dinnertime subscale (Tyse, 1992), which was created to be all inclusive of all families. For each question two statements were posed to the participants, and the participant had to endorse one of the two statements and then choose the strength of their answer (really true or sort of true). All interviews were administered over the phone, and it appears that the FRQ was difficult for researchers to use and for the participants to grasp, and this all-inclusive questions type proved to be ineffective for the children participants, as indicated by the very low reliability (α = .11). The difficulties that the children had answering the FRQ were also reflected by parent feedback. At the end of the parent interviews, some parents reported that they believed their children might have had a hard time understanding the scale. Choosing a different dinnertime ritual scale, or providing the participants with more guidance may have increased the reliability of the measure. In addition to the low reliability of the child FRQ, a gender imbalance was detected for both parents and children.

Eighty-five percent of the parents who participated in the study were female and 70% of the children who participated in the study were male. It is possible that the results may have been different if the sample included a more equal split between male and female parents and children. This gender discrepancy was not detected until after the cases for included in this analysis had already been complete.
**Future Directions.**

From this data it would be interesting to conduct further study comparing parent and child responses collected both from the parent and child interviews such as the frequency of eating habits reported during the child interview and frequency of eating habits reported during the 5-day diary. A within family comparison may also provide interesting results, to see how parent and children differed in their responses to questions surrounding family rituals and routines. Additional analysis, such as a time lag series is needed to better understand how emotions experienced on one day may influence eating habits of a future day.

Data from parent interviews and child diaries collected during the Family Routines and Eating habits study were used to examine the relations between family structure, diet quality, dinnertime rituals, and academic achievement. Correlation, t-test, and regression analysis revealed that eating breakfast (but not overall obesity risk) was positively related to children’s academic motivation, children from divorced families had a lower level of achievement motivation compared to children from married families, and more dinnertime routines were related to higher achievement motivation in children after controlling for family structure, whereby mediation effect was revealed for family routines on achievement motivation. Because divorce represents a time of change in families, we highlight the important role of family routines in helping young adolescents maintain their focus on achievement during a time of transition.

**REFERENCES**


**APPENDIX A**

Selection from Child Diaries

Please answers the following questions regarding your day TODAY

A. Your Day

1. Overall, how stressful was your day today?

   0 1 2 3 4 5 6 7 8
   (Not at all) (Extremely)

2. Overall, how enjoyable was your day today?

   0 1 2 3 4 5 6 7 8
   (Not at all) (Extremely)

3. How satisfied are you with the way you handled your problems TODAY?

   0 1 2 3 4 5 6 7 8
   (Not at all) (Extremely)

4. How much of your day today was free time?

   0 1 2 3 4 5 6 7 8
   (None) (All day)

5. How much time did you spend outside of your home today?

   0 1 2 3 4 5 6 7 8
   (I was home all day today) (I was out of the house all day today)

B. Eating Habits

1. How many servings of produce (fruits, vegetables) have you eaten today?

   0 1 2 3 4 5 6 7 8
   (No servings) (8 or more servings)
2. How many servings of sugar-sweetened drinks have you consumed today? (e.g., soda, Gatorade, fruit punch...)
   0  1  2  3  4  5  6  7  8
   (No servings) (8 or more servings)

3. Did you eat breakfast today?
   Yes           NO

4. How many times have you eaten today? (Including meals AND snacks)
   0  1  2  3  4  5  6  7  8
   (I did not eat today) (I have eaten 8 or more times)

5. When you ate today, how many times were you alone?
   0  1  2  3  4  5  6  7  8
   (I was never alone when I ate) (I was alone for every eating occasion)

C. Eating Diary
   1. Breakfast
      a. Did you eat breakfast at home today?
         1-Yes, I ate breakfast at home
         2-No, I ate breakfast but not at home
         3- I did not eat breakfast today
            If you answered 2, where did you have breakfast?

   2. Lunch
      a. Did you eat lunch at home today?
         1-Yes, I ate lunch at home
         2-No, I ate lunch but not at home
         3- I did not eat lunch today
            If you answered 2, where did you have lunch?

   3. Dinner
      a. Did you eat dinner at home today?
         1-Yes, I ate dinner at home
         2-No, I ate dinner but not at home
         3-I did not eat dinner today
            If you answered 2, where did you have dinner?