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Parental factors contributing to childhood obesity

Jennifer L. Miner
Ithaca College

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PARENTAL FACTORS CONTRIBUTING
TO CHILDHOOD OBESITY

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A Master's Thesis presented to the Faculty of the
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In partial fulfillment of the requirements for the degree
Master of Science

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by

Jennifer L. Miner

September 2003

Ithaca College
School of Health Sciences and Human Performance
Ithaca, New York

CERTIFICATE OF APPROVAL

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MASTER OF SCIENCE THESIS

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This is to certify that the thesis of

Jennifer L. Miner

Submitted in partial fulfillment of the requirements for the
degree of Master of Science in the School of
Health Sciences and Human Performance
at Ithaca College has been approved.

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Committee M

Candidate:___

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Graduate Pro{

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Date: _August 29, 2003_____

ABSTRACT

This study evaluated the contribution of parental factors related to eating behavior and physical activity level on the development of childhood obesity. The survey instrument was designed to assess parent and child eating behavior and physical activity, parental control of child eating behavior and physical activity, and parental attitudes toward their own and their child's weight status, eating behavior, and physical activity. Parents ($N =$ 127) completed the 92 question survey for themselves and the target children. Target children were between the ages of 7 and 11, and were second, third, or fourth graders from one of five elementary schools in Tompkins County in the state of New York. Data was collected on 127 parent-child pairs, for a return rate of 13%. The relationship between direct measures of parent and child body mass index (BMI) and physical activity level (PAL) were not significant. However, there was a higher likelihood that overweight parents had overweight children and normal weight parents had normal weight children. Children of parents classified as "healthy" eaters ate significantly more fruit, vegetables, and protein at recommended levels based on the food guide pyramid than children of "unhealthy" eaters. All children ate sweets at higher than recommended levels independent of parent eating behaviors. Overweight parents had children who ate snack food more frequently at meals than children of normal weight parents. Parents had a "more negative" attitude toward their own and their child's eating behavior when it was classified as "unhealthy", and a "more positive" attitude towards their own and their child's eating behavior when it was classified as "healthy". Similarly, as parent attitude toward their PAL was "more positive", energy expenditure (kcal/day) was higher.

However, the relationship between parental attitude toward their child's PAL and the child's energy expenditure (kcal/day) was insignificant. Parents accurately assessed their weight status as normal weight or overweight. Although most parents (87/103) correctly classified their children as normal weight or overweight, 94% of the misclassifications included parents who perceived their overweight child as normal weight. When parent pressure to eat and participation in physical activities with their child were high, child BMI was low. A child's actual eating behavior was not related to the child's BMI.

Conclusions. Parents did not appear to have an adequate understanding of what constitutes a healthy body composition and physical activity level for their child. Parents recognized the quality of their child's eating behaviors, however, parents of unhealthy eaters allowed their children to eat an unhealthy diet. Children whose parents were unhealthy eaters appeared to consume more of their daily calories from foods that are typically higher in fat, and less from fruits and vegetables. Parents were either unaware or unconcerned with recommendations regarding sweets consumption. Overweight parents appeared to model the consumption of high fat foods for their children. Parent participation in physical activity with their child promoted a healthy body composition in the child. Child weight status was influenced by parent weight status. Overall, parents appeared to be modeling several behaviors and attitudes that influenced the development of obesity in their child. Thus, it is imperative to educate parents and perhaps alter their behaviors and attitudes in ways that promote the achievement of healthy body composition, eating behaviors, and PAL's in themselves and their children.

ACKNOWLEDGEMENTS

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Chapter 1

INTRODUCTION

Epidemiological studies indicate that both adult and childhood obesity are on the

rise in the United States. The third National Health and Nutrition Examination Survey

(NHANES III) demonstrated an increase in adult obesity from 25% to 33% between 1970

and 1980 (Gable & Lutz, 2000). Research indicates that one-third of the current

generation of U.S. adults is overweight or obese, and the prevalence of childhood obesity

closely parallels the large increase in the prevalence of adult obesity (Hill & Trowbridge,

1998). The National Children and Youth Fitness Study II concluded that over a period of

20 years, from the 1960's to the 1980's, there was a systematic increase in skinfold

thickness among six and nine year old boys and girls alike (Ross, Pate, Lohman, &

Christenson, 1987). In fact, it is estimated that one in five children in the United States is

now overweight, and as a result this country could possibly be facing a future generation

that is even more overweight and obese as adults than today (Anonymous, 1999; Hill &

Trowbridge, 1998). The growing incidence of obesity and its close association with

chronic disease and adverse health outcomes presents an enormous challenge to our

health care system, and has become a serious public health concern.

The attention directed toward future health problems in obese children stems from

previous research showing the tendency of obese children to become obese adults. In

addition, pediatricians are finding that children and adolescents are already beginning to

experience medical effects from their overweight condition, such as hypertension,

dyslipidemia, and noninsulin-dependent diabetes mellitus (NIDDM). If this trend

continues, the economic cost of obesity will increase further due to the necessity of

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treating adult diseases in childhood (Hill & Trowbridge, 1998). Finally, there is concern that childhood and adolescent obesity may have significant negative psychosocial effects such as social isolation and discrimination, low self esteem, negative self-image, depression, and possibly delayed psychosocial development (Friedman & Brownell, 1995; Wilkins, Kendrick, Stitt, Stinett, & Hammarlund, 1998).

Although the medical illnesses associated with obesity usually occur in adulthood, measures to treat obesity in adults have been met with little success. Therefore, one strategy, and possibly the essential strategy, to prevent adulthood obesity is to focus more attention on the development and prevention of childhood obesity (Whitaker, Wright, Pepe, Seidel, & Dietz, 1997).

Studies from a variety of disciplines reveal that obesity stems from a complex interaction of multiple factors, including genetic, metabolic, and behavioral determinants. Since the genetic determinants of obesity do not change rapidly among a population, this suggests that the recent trends in obesity are associated more closely with environmental and behavioral predictors (Hill & Trowbridge, 1998).

Associations have been found between parental obesity and child obesity, and attribute the trend of increasing obesity in adults and children more to decreased physical activity than increased food intake. It is estimated that parental obesity more than doubles the risk of adult obesity among both obese and non-obese children under 10 years of age (Whitaker et al., 1997). Since parents are typically considered the primary agents of children's socialization and well being, in matters of both social and physical well being, it has been suggested that children acquire their obesity risk factors and actual obesity from their parents. There is research suggesting parental factors such as

adiposity, physical activity, eating behaviors, parental control, and parental attitudes and beliefs all affect the obesity risk of the child. In addition, the family's socio-economic status, demographics, and the home physical environment may also negatively influence child behaviors that promote obesity (Birch & Fisher, 1998; Gable & Lutz, 2000; Johnson & Birch, 1995; Kohl & Hobbs, 1998; Sallis, Prochaska, & Taylor, 2000).

<div align="center">Rationale</div>

Although there is significant research on parental influences such as adiposity, eating behaviors, physical activity, and control, the effect of parental attitudes on child adiposity, eating behavior and physical activity is lacking. Recent work by Dr. Barbara Dennison, a pediatrician and research scientist at Bassett Healthcare Research Institute in Cooperstown, NY found that parents often responded in disbelief and denial when confronted with their child's obesity. In fact, only 3% of parents of children with body mass indexes (BMI's) between the 85th and 95th percentiles perceived their child as even "slightly overweight", and none said their child was overweight. In addition, for children with BMI's above the 95th percentile, only 3% of parents perceived their child as overweight, and 25% called them "slightly overweight". Furthermore, Dennison and colleagues discovered that the parents of overweight children treated mealtimes differently than parents of healthy children. For example, they often allowed the child to choose the meal, which was usually something less nutritious, or they used sweets as a reward for finishing dinner (Smith, 2000; Tucker, 2000). In conclusion, the results of Dennison's study and the overall lack of past literature on the topic suggest that more research needs to be done to determine the effects of parental attitudes on childhood obesity.

Statement of the Problem

The purpose of the study was to evaluate the contribution of parental factors related to eating behavior and physical activity level on the development of childhood obesity. The research was conducted for three reasons: 1) to identify and describe the current patterns of parent eating behavior and physical activity level and their relationship to their child's eating behavior and physical activity level; 2) to explore the effect of parental eating behavior, physical activity level, control of, and attitudes about their child's eating behavior and physical activity level; and 3) to determine to what extent these relationships may influence the development of obesity in the child. The data will contribute to the existing literature by further examining the family behavioral and environmental etiology of childhood obesity, and may uncover new opportunities for prevention and treatment focusing on parent education.

Research Questions

The research questions of the study are as follows:

1. What is the relationship between parental body mass index (BMI), eating behavior, and physical activity level and the BMI, eating pattern, and physical activity level of their child?

2. What is the relationship between parental attitude toward their child's weight status, eating behavior, and physical activity and the actual BMI, eating behavior, and physical activity level of their child?

3. What is the relationship between parental attitude toward their own weight status, eating behavior, and physical activity and their actual BMI, eating behavior, and physical activity level?

4. What is the relationship between parental control of their child's eating behavior and physical activity and the child's BMI, eating behavior, and physical activity level?

5. To what extent does the child's eating behavior and physical activity level relate to the child's BMI?

Delimitations

The delimitations of the study were as follows:

1. Results were based on self-report questionnaire data, and not measured directly.

2. Results pertaining to child information were based on parental assessment and report.

3. Results were based on children from five local elementary schools between the ages of 6 and 11 years who were in second, third, or fourth grade.

4. Parent and child physical activity level (kcal/day) were estimated from time spent in sleep, light, moderate, hard, and very hard activities.

5. Parent and child weight status were determined via body mass index (BMI).

Limitations

The limitations of the study were as follows:

1. The sample size was determined based on budgetary restraints.

2. Results may have been affected by the parents' willingness to report information.

3. Parents who chose to respond to the study may not have accurately represented the population as a whole.

Assumptions

The assumptions of the study were as follows:

1. It was assumed that the parents were literate.

2. It was assumed that the parents reported accurate information.

3. It was assumed that the measurement instrument was valid and reliable.

Definition of Terms

The following terms were defined for the purpose of this study:

Body Weight Related Terms

1. Body Mass Index (BMI): A weight to height ratio calculated as weight in kilograms divided by height in meters squared.

2. Low BMI group (for children): Children that had a BMI less than 16.

3. Low BMI group (for parents): Parents that had a BMI less than 22.

4. High BMI group (for children): Children that had a BMI greater than or equal to 18.

5. High BMI group (for parents): Parents that had a BMI greater than or equal to 26.

6. Normal weight child: A child whose BMI for age is less than or equal to the 75th percentile based on the United States 2000 Center for Disease Control (CDC) growth charts (CDC does not state that a child is considered normal weight if they are less than or equal to the 75% percentile, instead they only make distinctions for overweight and obese. Normal weight category was created for data analysis of this study.)

7. Obese adult: An adult whose BMI is 30.0 kg/m^2 or more.

8. <u>Obese child</u>: A child whose BMI for age is greater than or equal to the 95th percentile according to the United States 2000 Center for Disease Control (CDC) growth charts (CDC states that a child is overweight if they are greater than or equal to the 95th percentile.)

9. <u>Overweight adult</u>: An adult whose BMI is between 25.0 and 29.9 kg/m^2.

10. <u>Overweight child</u>: A child whose BMI for age is greater or equal to the 85th percentile according to the United States 2000 Center for Disease Control (CDC) growth charts. (CDC states that a child is at risk of overweight if they are greater than or equal to the 85th percentile.)

<u>Eating Related Terms</u>

11. <u>Eating behavior</u>: 1. A comprehensive term that considers many aspects of food intake measured in this study including frequency of eating and types of foods eaten. 2. Defined as "healthy" or "unhealthy" based on specified criteria, such that surveyed parents and children fall into "healthy" or "unhealthy" eating behavior groups.

12. <u>Eating pattern</u>: Typical meal consumption defined as never, rarely, occasionally, almost daily, daily, and more than once daily for the following food groups: fruit, vegetables, dairy, protein, carbohydrates, sweets, and snacks.

13. <u>Dietary restraint</u>: Reflects conscious efforts to restrict food intake.

14. <u>Disinhibited eating</u>: Impulsive eating, or difficulty stopping eating once begun.

15. <u>Healthy eating behavior</u>: Parents and children who typically ate fruits, vegetables, dairy, protein, and carbohydrates at meals daily or more than once daily.

16. <u>Perceived hunger</u>: Self-rating of hunger, and how it affects eating behavior.

17. Unhealthy eating behavior: Parents and children who typically ate fruits and vegetables never, rarely, occasionally, or almost daily; and dairy and protein occasionally, almost daily, daily, or more than once daily; and carbohydrates almost daily, daily, or more than once daily at meals.

Physical Activity Related Terms

18. Physical activity: Usual activities of daily living and formal exercise participation, which are bodily movements produced by contraction of skeletal muscle that increase energy expenditure above basal level.

19. Physical activity level (PAL): "High" and "low" groups were created for parents and children based on total caloric expenditure per day. Total caloric expenditure per day calculated based on calories expended in sleep, and light, moderate, hard, and very hard activities.

20. Low PAL group (for children): Children that had a total caloric expenditure per day of 1090 calories or lower.

21. Low PAL group (for parents): Parents that had a total caloric expenditure per day of 2233 calories or lower.

22. High PAL group (for children): Children that had a total caloric expenditure per day of 1544 calories or higher.

23. High PAL group (for parents): Parents that had a total caloric expenditure per day of 3106 calories or higher.

Chapter 2

REVIEW OF LITERATURE

The review for this study is focused first on the physiology of weight regulation and fat deposition, and second, on several areas relating to child obesity and parental influence including; (a) parental control of feeding, (b) eating behaviors, (c) adiposity (d) physical activity, and (e) summary.

Physiology of Weight Regulation

Although individuals may have a genetic predisposition to store body fat, the significant increase in obesity observed over the past decade indicates that this change occurred too quickly to be entirely due to genetics. Instead, this increase in adiposity is likely the result of both genetic predisposition for fat storage and the environment (Rosenbaum & Leibel, 1998).

The storage of calories as fat results from a net positive energy balance, in which energy intake is greater than energy output over time. Therefore, the physiological determinants of body composition are energy intake, energy output, and partitioning of energy stores as fat, carbohydrate, and protein. Storage may partly be a result of genetic predisposition and/or specific control mechanisms regulating energy input and output which are not completely understood, but environmental factors such as dietary intake and low physical activity levels also play a role (Rosenbaum & Leibel, 1998).

Increases in fat tissue mass are likely the result of glucose and/or fat intake resulting in energy intake greater than energy expenditure. When glucose is ingested there is a resultant increase in insulin and glycogen concentrations, which reduce fatty acid oxidation and enhances the storage of fats. Furthermore, when glycogen stores

persist at an elevated level, glycogen is used as the primary energy substrate over fat. Therefore, dietary fat is stored and adipose tissue mass increased. In addition, when fat intake exceeds fat oxidation fat mass increases. In the case of excessive glucose and fat intake, the body accumulates fat until the adipose tissue mass is adequate to bring about a rate of fat oxidation that is equal to fat intake. Once this adipose mass is achieved, a steady state of weight maintenance is established at the new, higher weight (Flatt, 1995).

Although growing children need to take in more calories than they expend, when this extra intake becomes excessive it can result in obesity (Rosenbaum & Leibel, 1998). Research indicates there are critical periods for the development of obesity, which persists into adulthood. These critical periods have been identified as the prenatal period, the period of adiposity rebound that occurs between five and seven years of age, and adolescence (Dietz, 1994, 1997). Because parents are a significant influence throughout these developmental years it is likely that they could influence the development of obesity in their child. Therefore, parental influence could either increase or decrease the child's risk of persistent obesity and associated complications.

Parental Control of Feeding

Parental control of eating is associated with greater risk of childhood obesity. Research indicates that as parental control increases during mealtimes, the child's ability to regulate their energy intake and the amount of food consumed decreases (Birch & Fisher, 1995). Thus, children whose parents are highly controlling regarding nutrition are less able to regulate their food intake (Johnson & Birch, 1994). As a result, the child's ability to recognize signs of hunger and fullness are impaired (Gable & Lutz, 2000).

Research has shown that children's responsiveness to energy density is diminished when adults used control strategies that focused on external cues to encourage food consumption. In the first condition, which focused on the child's own cues of hunger and satiety, children showed clear evidence of adjusting their intake in response to differences in energy density. However, in the condition where the child focused on external cues, such as reward for 'cleaning the plate', the child's responsiveness to the energy content of the foods disappeared and food intake was significantly increased. These findings suggest that parental control of eating may actually oppose the child's attempt to control their food consumption (Birch, McPhee, Shoba, Steinberg, and Krehbiel, 1987).

Another study by Johnson and Birch (1994) also links child-feeding practices and children's responsiveness to energy density. The findings of this study revealed that parents, in particular mothers, who were highly controlling of their child's food intake, had children who demonstrated less ability to self-regulate energy intake. The study also found that children with greater body fat stores were less able to accurately regulate energy intake. This suggests that controlling parents have heavier children with reduced energy regulating capacities.

Klesges et al. (1983) also demonstrated a significant positive correlation between child relative weight and certain parental variables relating to the child's eating behavior. Specifically, parental food prompts, especially parental encouragement to eat, was strongly correlated to the child's relative weight, and increased the probability that a child would eat. Interestingly, child refusal of food was usually followed by a parental prompt to eat, however a child food request was not likely to elicit either a parental prompt or

subsequent eating in the child. Finally, results indicated that parents of overweight children gave more encouragement to eat, more offers of food, and more total food prompts than parents of non-obese children.

More recent studies involving parental encouragement to eat have revealed mixed results. In agreement with Klesges et al. (1983), a study conducted in 1986 found that parental encouragement to eat was correlated positively to the child's relative weight and time spent eating (Klesges, Malott, Boschee, & Weber, 1986). In contrast to these findings, Burroughs and Terry (1992) found that the child's weight for height percentile was inversely related to encouragement to eat quickly, eat more, and clean the plate.

In addition to the possible alteration of child energy regulation and weight status, controlling child-feeding strategies may also negatively affect child food preferences. Studies demonstrated that encouraging consumption of "good" foods (such as fruits and vegetables) and restricting consumption of "bad" foods (such as foods high in fat and sugar) decreased child preferences for the good and increased preferences for the bad. In other words, when children are encouraged to eat a particular food their dislike for that food is increased, whereas restriction of a particular food enhances desirability and can increase intake (Birch & Fisher, 1998).

In conclusion, controlling child-feeding practices may negatively impact both food preferences and control of food intake in children. Although additional research is needed in this area, it is possible that such practices may actually foster rather than prevent the development of childhood obesity and eating problems (Birch & Fisher, 1998). However, under-control of child eating, in which parents believe children can select and prepare healthy foods on their own, can also lead to poor eating habits in

children (Pettit & Bates, 1989). Therefore, it has been suggested that it is the parents' responsibility to supply the child with a healthful array of foods and a supportive eating context, and it is the child's responsibility to decide when and how much to eat (Johnson & Birch, 1994).

<div align="center">Eating Behavior</div>

Restraint and Disinhibition

Parental eating behavior has also been linked to child obesity and control of child feeding practices. A study from the American Heart Association examined the eating habits of parents of 92 three and five year old children, and then tracked the children's weight and body fat over the next six years. Results revealed that parents who scored highest on either dietary restraint (individual conscious efforts to restrict food intake) or disinhibition (impulsive eating and the resulting fluctuation in dietary intake and body weight) had children with greater body fat compared to parents who scored lower on these scales. In addition, children whose parents fluctuated between dietary restraint and impulse eating gained the most body fat over time. Researchers suggested that parents who ranked highest on the dietary restraint scale may exert excessive control over their child's eating choices, thus suppressing the child's ability to internally regulate his or her own dietary intake and lead to obesity (Anonymous, 2000).

In support of these data, Johnson & Birch (1994) found that mothers who were more restrained exerted more control over their daughters' eating, and their daughters showed little evidence of energy regulation. In addition, for girls, the parents' dieting and restrictive eating predicted the level of maternal restriction (Fisher & Birch, 1996). Lastly, a study by Birch & Fisher (1998) also identified a link between parental control of

child eating and the parents' own dieting and weight history. This suggests that parents who are more controlling of their own diet have a tendency to exert higher levels of control over their child's food intake.

Interestingly, Fisher & Birch (1995) found that parental adiposity was positively related to dietary restraint and disinhibition. In other words, parents with higher BMI's reported high levels of cognitive control in regulating their own food intake and difficulty controlling their own eating once they had begun. Johnson & Birch (1994) also demonstrated that heavier parents reported a higher incidence of disinhibited eating, and that parents who had trouble controlling their own eating had children who failed to adjust their eating in response to increased caloric density of the diet. This research suggests that parents are modeling eating behaviors such as dietary restraint and disinhibition that promote obesity, and that they are passing these dietary habits and attitudes on to their children.

Nutrient Intake

A relationship between parent and child nutrient consumption has also been made throughout the literature. A study by Oliveria et al. (1992) showed statistically significant relationships between parent and child nutrient intake. For example, parents' nutrient intake correlated with child intake for all nutrients (total energy, protein, carbohydrates, total fat, saturated fatty acid, monounsaturated and polyunsaturated fatty acid, and calcium) except potassium. However, nutrient intake in general was more strongly related between mother and child than between father and child. Also, the results suggested that the tendency of a child to consume a diet high in total fat, saturated fatty acid, or cholesterol was highest if both parents consumed high amounts of these

nutrients, and lowest if both parents had low intakes of these nutrients. Lastly, a stronger association between parent and child nutrient intake was seen with parents who ate more meals at home. In summary, the modest correlation coefficients in this study suggested that other environmental factors may also influence child eating behaviors, but the results still demonstrate the similarity of nutrient intake patterns within families.

In agreement with the previous results, a study on parental attitudes and behaviors revealed that parents and guardians of children with higher weight for height percentiles were more likely to agree that their own consumption of sweets and snack foods influenced their children. Furthermore, these parents also tended to more frequently control the amount their children ate for snacks (Burroughs & Terry, 1992).

<u>Adiposity</u>

In much of the literature, parental adiposity has been positively associated with child fat preference and fat intake. Eck, Klesges, Hanson, & Slawson (1992) found that children of obese parents consumed a higher percentage of energy from fat and less from carbohydrate than did children of non-obese parents. In addition, Nguyen, Larson, Johnson, & Goran (1996) observed that children of obese mothers had higher fat intakes.

In support of these studies, difference in preference among children for high fat foods and total fat intake were also positively correlated to the relative adiposity of the parents as well as the child. First of all, children of heavier parents (parents with higher BMI's) had strong preferences for high fat foods and consumed a higher percentage of their calories from fat than children of lower weight parents (lower BMI's). Finally, the children who showed strong preferences for high-fat foods were also those with high fat intakes and the highest triceps skinfold measurements (Fisher & Birch, 1995). In

summary, it appears as though parental adiposity is associated with child fat preferences, fat intake, and adiposity.

<div align="center">Physical Activity</div>

A review by Jebb & Moore (1999) found clear evidence that low levels of physical activity are associated with an increased risk of weight gain and obesity. In addition, the epidemiological studies reviewed also imply that the increase in obesity prevalence is more strongly related to lower levels of physical activity than higher energy intake. In support of these data, a scientific roundtable found similar results suggesting decreased energy intake occurring concurrently with decreased physical activity and increased body weight in both children and adults (Grundy et al., 1999).

Research suggests that leisure time activities are becoming more sedentary, with television, video games and personal computing among the most popular pastimes. The third National Health and Nutrition Examination Survey III revealed that many U.S. children watch a great deal of television and demonstrate little vigorous activity. In fact, the study found that boys and girls who watched four or more hours of television a day had greater body fat and a higher BMI than those who watched less than two hours per day. Children who watched more television and were less likely to participate in vigorous activities, also tended to have higher BMI's (Andersen, Crespo, Bartlett, Cheskin, & Pratt, 1998). Interestingly, an intervention targeting only television, videotape, and video game use not only significantly decreased reported television viewing and video game use compared to controls, but also changed relative BMI, triceps skinfold thickness, waist circumference, and waist-to-hip ratio over a period of 7 months. Since there was no significant change in physical activity or cardiorespiratory fitness, the

results suggest that low-intensity energy expenditure is increased in the absence of these popular sedentary activities (Robinson, 1999).

Similar results from earlier work on the National Children and Youth Fitness Study II were also reported regarding television watching, physical activity, and body composition. Children who watched more television tended to have lower physical activity levels and were less likely to participate in organized sports or physical activity with community organizations. On the other hand, leaner children tended to participate in more community based physical activities and watched less television. Parents and teachers also rated leaner children as more physically active. Of particular interest is that parental physical activity was associated with the child's body composition. That is, parents of leaner children were more active and exercised more frequently with their children (Ross & Pate, 1987). Similarly, Klesges et al. (1986) found that parental encouragement to be active was related positively to extreme levels of child activity but not to minimal or moderate activity levels, and negatively to child relative weight.

The relationship between parent and child physical activity is not completely clear, however, the literature suggests a correlation is present. In a review of 29 studies on parental influence on child physical activity, 38% revealed a positive correlation. In addition, a positive association between child physical activity and parent participation in child physical activity was observed in about half of the studies that examined this relationship. However, based on the overall inconsistency of results in the reviewed studies the relationships above were viewed to be indeterminate (Sallis et al., 2000). Nonetheless, parents still appear to have a strong influence on physical activity behavior,

and the mechanism of parental influence is likely both direct (providing a supportive, nurturing environment) and indirect (through modeling) (Kohl & Hobbs, 1998).

Research by Perusse, Tremblay, LeBlanc, and Bouchard (1989) on 1,610 subjects (375 families) suggested that children could acquire the behavior toward exercise from their parents, and that there may be a genetic predisposition toward being physically active. Furthermore, they found that common familial environmental conditions contributed significantly to the variation in physical activity level. Another study of Anglo and Mexican families also found a moderate degree of familial aggregation of physical activity (Sallis, Patterson, Buono, Atkins, & Nader, 1988).

In agreement, data from Freedson & Evenson (1991) on parents and offspring aged 5-9 years suggested the presence of familial aggregation in physical activity. They found that active parents were likely to have an active child, and low active parents were even more likely to have a low active child. These data indicate that physical inactivity may be a more influential modeling behavior than physical activity. In addition, the same results revealed evidence that as the number of physically active parents increased from 0 to 2, child physical activity levels increased. In support of these data, another study found that children of active parents were almost six times more likely to be active than children of inactive parents (Moore et al., 1991).

Lastly, there is evidence that young adolescent activity levels are influenced by significant others, such as parents and peers, who are physically active or give support toward activity. In fact, the greatest impact was observed when significant others were both physically active and supportive (Anderssen & Wold, 1992). However, there could be a stronger association between parent and child behaviors than parent and adolescent

behaviors, indicating that the timing of the influence may also be critical (Godin & Shephard, 1986).

Summary

Studies have assessed the relationship of parental eating behaviors, adiposity, physical activity, and control to child eating behaviors, adiposity, and physical activity. Based on this literature there appears to be a positive association between these parent and child variables and behaviors. Furthermore, it is reasonable to believe that parent behaviors may be a result of their attitudes toward the issues of adiposity, eating behaviors, and physical activity. However, research is lacking on issues pertaining to the influence of parental attitudes on factors contributing to childhood obesity.

Chapter 3

METHODS

This chapter details the selection of subjects, design of the study, instrument of data collection, data management, and the data analysis.

Subjects

Parents/guardians of children from five Tompkins County elementary schools participated in the study. Specifically, parents with children in each school's second, third, and fourth grade classes between the ages of 6 and 11, were the target population. Parents in families with more than one child in the second, third, or fourth grade were instructed to select one child as the "study child", and also designate one parent to complete the questionnaire, preferably the primary caregiver. The parent who volunteered to participate read and signed the informed consent form (Appendix A) before participation. Data was collected on 127 parent-child pairs.

Design

To ensure sufficient reliability and validity, a pilot study was conducted to assess parent and child eating behaviors and physical activity levels and the parent's attitudes toward these variables. The 92 question survey instrument, which required approximately 45 minutes for completion, was then created and appropriately modified before beginning the study. Survey sections included parent and child demographics, eating behavior, and physical activity level, as well as parental control of child eating behavior and physical activity level and attitudes toward their own and their child's weight status, eating behavior, and physical activity level.

After permission was obtained from the principals at each of the five schools (Appendix B) and the appropriate number of surveys was designated for each school, the researcher delivered a total of 947 surveys to the schools. Surveys included informed consent (Appendix A), cover letter (Appendix C), a form entering the parent into a raffle for a $100 gift certificate to a local supermarket (Appendix D), directions for completing the survey (Appendix E), and the survey instrument (Appendix F). All 2nd, 3rd, and 4th grade teachers in each school distributed the surveys to their classes, and instructed the students to bring them home to their parents. Parents completed the entire 92 question survey for themselves and the target children participating in the study. Stamped and addressed envelopes were provided for returning the completed documents to the researcher. One-hundred and twenty-seven of the 947 surveys, 13%, were returned to the researcher and coded to insure participant confidentiality. After reviewing each survey the researcher followed up via telephone with all parents that had left one or more survey questions blank and who had given the researcher permission to contact them. With the parent's help, the researcher filled in as many of the missing survey responses as possible.

Survey Instrument

The survey instrument was designed by the researcher to address parental factors that may influence childhood obesity. The primary purpose of the instrument was to assess parent and child eating behavior and physical activity level, parental control of child eating behavior and physical activity level, and parental attitudes toward their own and their child's weight status, eating behavior, and physical activity level. A copy of the instrument can be found in Appendix F.

<u>Demographics</u>

Data were collected for parent and child gender, age (years and months), race, education, height (ft./in.), and weight (lbs.). Family income, and marital and employment status were also obtained.

<u>Eating Behaviors</u>

Questions, developed by the investigator, were included about parent and child nutrient intake and frequency of eating. Questions 17- 20 and 33- 36 address parent and child nutrient intake and eating frequency, in that order. Specifically, survey questions 34a-g were used in the determination of child eating patterns for the following seven food groups: fruit, vegetables, dairy, protein, carbohydrates, sweets, and snacks. For each food group child food consumption was defined as "never", "rarely", "occasionally", "almost daily", "daily", or "more than once daily."

<u>Parental Control of Feeding</u>

The degree of parental control of feeding was examined via statements from Birch et al. (2000) Child Feeding Questionnaire. Statements 37- 43 addressed parental restriction of child eating, statements 44- 47 referred to the pressure parents place on their children to eat, and statements 48- 50 assessed parental monitoring of child food consumption. Parental control variables were defined as follows: restriction was defined as the mean of responses to survey questions 37- 43; pressure was defined as the mean of responses to survey questions 44- 47; and monitoring was defined as the mean of responses to survey questions 48- 50. For each parental control variable (restriction, pressure, and monitoring) the highest possible mean score was 5 and the lowest was 1,

with higher mean scores indicating higher levels of parental restriction, pressure, or monitoring of their child's eating behavior.

When Birch et al. (2000) took a mean of the "restriction" items they calculated alpha reliability values (based on their final factor solution sample) of .77 for mothers and .66 for fathers. Likewise when a mean of the "pressure" items was taken, alpha levels of .68 for mothers and .67 for fathers were found. Lastly, an alpha value of .86 was calculated for both mothers and fathers for the mean of the "monitoring" items.

Physical Activity

Questions about physical activity (via self-report) regarding parent and child type, frequency, intensity, and duration over the past week were adapted from Sallis et al.'s (1985) Seven-Day Physical Activity Recall. These items correspond to questions 62- 70 (parent) and 75- 83 (child) on the survey instrument. An estimated average daily energy expenditure (kcal/day) was calculated based on participant responses to questions about their own or their child's weight and the estimated number of hours per day spent in sleep and moderate, hard, and very hard activities. Time spent in light activities was calculated by subtracting the number of hours per day spent in sleep and moderate, hard, and very hard activities from 24 hours. Next, hours per day spent in sleep and light, moderate, hard, and very hard activities were multiplied by the following MET values, respectively: 1 MET, 1.5 MET, 4 MET, 6 MET, and 10 MET and summed (kcal/kg/day). Finally, total kcal/kg/day was multiplied by weight in kilograms, yielding an estimated average energy expenditure in kcal/day. Using the scoring technique described above to determine estimated average energy expenditure (kcal/day), Sallis et al. calculated a test-

retest reliability of .86, and a validity of .50 and .53 with the Caltrac and the Tri-Trac as the validity criterion, respectively.

In addition, survey questions 71-72 and 84-88 were designed by the researcher to investigate parent and child time spent in sedentary activities and parental control of child physical activity level. Questions 71-72 and 84-85 addressed the typical number of hours in the average week that parents and children spent watching TV, playing video games, and using the computer. Furthermore, parental control of physical activity was examined via survey questions 86, 87, and 88. Survey question 86 evaluated parent regulation of their child's sedentary activities such as watching TV, playing video games, or using the computer. Survey question 87 evaluated the extent of parent encouragement for their child to be physically active, and survey question 88 determined how often the parent engaged in physical activities such as biking and swimming with their child. For each parental control variable (regulation of their child's sedentary activity, encouragement for their child to be physically active, and participation in physical activity with their child) responses ranged from 1 = never to 5 = always. Higher scores indicated higher levels of parental regulation of their child's sedentary activity, encouragement for their child to be physically active, and participation in physical activity with their child.

Parental Attitudes

Parental attitudes toward their own and their child's weight status were defined as the responses to survey questions 91 (attitude toward their own weight status) and 92 (attitude toward their child's weight status) after recoding. The original responses to survey questions 91 and 92 are as follows: 1 = markedly underweight, 2 = underweight,

3 = normal weight, 4 = overweight, and 5 = markedly overweight. Questions 91 and 92 were recoded so 1, 2, and 3 = normal weight, and 4 and 5 = overweight. This re-coding was done due to a low number of responses in the underweight and markedly overweight categories (For children, out of 127 responses, 15 = underweight, 93 = normal weight, 16 = overweight, and 3 = markedly overweight; For parents, out of 127 responses, 1 = underweight, 67 = normal weight, 53 = overweight, and 6 = markedly overweight).

Parental attitudes toward their own and their child's eating were defined as the sum of the responses to survey questions 23 through 32 and 51 through 60, respectively, after recoding questions 23 - 30 and 51 - 58. The original responses and those maintained for questions 31 - 32 and 59 - 60 were as follows: 1 = never, 2 = rarely, 3 = sometimes, 4 = mostly, and 5 = always. Questions 23 - 30 and 51 - 58 were recoded so 5 = never, 4 = rarely, 3 = sometimes, 2 = mostly, and 1 = always. This re-coding was done to reflect the positive and negative attitudes of each statement with 1 representing the most negative attitude and 5 representing the most positive attitude. After recoding and summing the responses to questions 23-32 (parent attitude toward their own eating behavior) and 51-60 (parent attitude toward their child's eating behavior), the lowest possible parental attitude score was 10, and the highest possible was 50. Parents scoring a 10 had the most negative attitude toward their own and their child's eating behavior, whereas those scoring a 50 had the most positive attitude.

Parental attitudes toward their own and their child's physical activity were defined by a sum of the responses to survey questions 73- 74 and 89 – 90, correspondingly. The responses for survey questions 73 - 74 and 89- 90 were as follows: 1 = never, 2 = rarely, 3 = sometimes, 4 = mostly, and 5 = always. A response of 1

represented the most negative attitude and 5 represented the most positive attitude. After summing, the lowest possible attitude score was 2, and the highest possible attitude score was 10. Parents scoring a 2 had the most negative attitude toward their own and their child's physical activity level, whereas those scoring a 10 had the most positive attitude.

Data Management

Of the 947 survey instruments distributed, 127 were returned to the researcher and used for the study, for a return rate of 13%. Surveys were coded numerically and entered into a database created in SPSS. The codebook and raw data can be found in Appendix G and H, respectively. Physical activity data was excluded for 7 out of the 127 parent-child pairs due to inflated self-report data (outliers). These seven parents reported values that were so high for their own, their child's, or both their own and their child's moderate, hard, and very hard physical activity that there were too few hours left in the day for light activity and/or their self-reported amount of sleep.

Six parent and eight child groups were created for the data analysis of this project. Both parent and child groups included: healthy eating behaviors, unhealthy eating behaviors, high body mass index (BMI), low BMI, high physical activity level (PAL), and low PAL. Additionally, child normal weight and overweight groups were created based on the United States 2000 Center for Disease Control growth charts for children age 2 through 20 years. Tables of parent and child groups can be found in Appendix I and J, respectively.

Healthy eating behavior groups included parents and children who typically ate fruits, vegetables, dairy products, protein, and carbohydrates at meals daily or more than once daily. Refer to survey questions 18a-e for parent and 34a-e for child. Thirty-one

parents and 37 children, respectively, met this criterion. Unhealthy eating behavior groups included parents and children who typically ate fruits and vegetables never, rarely, occasionally, or almost daily; dairy and protein occasionally, almost daily, daily, or more than once daily; and carbohydrates almost daily, daily, or more than once daily at meals. Refer to survey questions 18a-e for parent and 34a-e for child. Twenty-eight parents and 37 children, respectively, met this criterion.

The parent high BMI group included a total of 36 parents that had a BMI greater than or equal to 26, and the parent low BMI group consisted of 35 parents with BMI less than 22. Thirty-nine children with BMI greater than or equal to 18 made up the child high BMI group, and 41 children with BMI less than 16 were included in the child low BMI group.

Physical activity level "high" and "low" groups were created for parents and children based on total caloric expenditure per day. Total caloric expenditure per day was calculated as a sum of calories expended in sleep, and light, moderate, hard, and very hard activities, and was determined via survey questions 62-69 for parents and 75-82 for children. The high PAL group for parents had a total caloric expenditure per day of 3106 calories or higher and 31 parents met this criterion. The parent low PAL group had a total caloric expenditure per day of 2233 calories or lower and 30 parents met this criterion. The child high PAL group includes a total of 30 children that had a total caloric expenditure per day of 1544 calories or higher. The child low PAL group, made up of 29 children, had a total caloric expenditure per day of 1090 calories or lower.

Child normal weight and overweight groups were created based on the United States 2000 Center for Disease Control growth charts for children age 2 through 20 years.

These charts take the child's age and gender into consideration when determining BMI classifications (http://www.cdc.gov/growthcharts/). Seventy-two children with BMI's less than or equal to the 75% percentile were included in the normal weight group. The overweight group consisted of 31 children with BMI's greater than or equal to the 85% percentile.

<div align="center">Data Analysis</div>

The following sections detail the data analysis for all five of the research questions. The alpha level for all analyses was set at .05.

Research Question 1

Pearson correlations were calculated to determine the relationship between parent and child BMI and parent and child PAL for each parent group (healthy/unhealthy eating behavior, high/low BMI, and high/low PAL). Next, chi square goodness of fit was used to evaluate the relationship between parent high/low BMI groups and the child's actual weight status (normal weight or overweight) based on the 2000 CDC growth charts for children, which takes both gender and age into consideration when determining BMI classifications (http://www.cdc.gov/growthcharts/). Then, chi square goodness of fit was used to evaluate the relationships between parent healthy/unhealthy eating behavior groups, parent high/low BMI groups, and parent high/low PAL groups and their children's eating patterns. Utilizing data from survey questions 34a-g, separate chi-squares were conducted on each parent group, for the seven food groups used in the determination of child-eating patterns. In order to ensure that chi-square expected counts were not less than 1, child food consumption was split into three groups. Group 1 included never and rarely responses, group 2 included occasionally and almost daily

responses, and group 3 included daily and more than once daily responses. When the original three food consumption groups resulted in expected counts less than 1, the data were collapsed into different child food consumption groupings. This occurred when analyzing parent healthy/unhealthy eating behavior groups versus child vegetable and protein consumption, parent high/low BMI groups versus child dairy consumption, and parent high/low PAL groups versus child vegetable, dairy, and protein consumption such that child food consumption group 1 included never, rarely, occasionally, and almost daily responses, and group 2 included daily and more than once daily responses. Furthermore, when analyzing parent high/low PAL groups versus child snack consumption child food consumption group 1 included never and rarely responses and group 2 included occasionally, almost daily, daily, and more than once daily responses. Changing the child food consumption groupings allowed for attainment of the recommendations for chi-square goodness of fit testing, including a sample size of at least 30 and no expected frequencies less than 1 (Daniel, 1990). Finally, when significance was found for chi-square goodness of fit tests, follow-up analyses included examination of cell frequencies and percentages and calculation of residuals (Sheskin, 2000).

Research Question 2

Four analyses were used to evaluate research question two. First, an independent t-test was performed to assess parental attitude towards their child's eating behavior between children in the healthy eating behavior group and those in the unhealthy eating behavior group. Second, a Pearson correlation was calculated to determine the relationship between parent attitude towards their child's physical activity and the child's

total energy expenditure (kcal/day) for all cases that had physical activity data for the parent and child. Next, for all cases with BMI data for the parent and the child, an independent t-test was used to evaluate the relationship between parental attitude toward their child's weight status and their child's actual BMI. To conclude the analysis of research question two, a chi square goodness of fit test was used to evaluate the relationship between parent attitude toward their child's weight status and the child's actual weight status (normal weight or overweight) based on the 2000 CDC growth charts for children, which takes both gender and age into consideration when determining BMI classifications (http://www.cdc.gov/growthcharts/). Follow-up analyses included examination of cell frequencies and percentages and calculation of residuals (Sheskin, 2000).

<u>Research Question 3</u>

Four analyses were used to evaluate research question three. First, an independent t-test was used to assess parental attitude towards their own eating behavior between parents in the healthy eating behavior group and those in the unhealthy eating behavior group. Next, a Pearson correlation was calculated to determine the relationship between parent attitude towards their own physical activity and their total energy expenditure (kcal/day) for all cases that had physical activity data for the parent and child. Then, for all cases with BMI data for the parent and the child, an independent t-test was used to evaluate the relationship between parental attitude toward their own weight status and their actual BMI. Finally, chi square goodness of fit was used to evaluate the relationship between parent attitudes toward their own weight status versus

parent high/low BMI groups. Follow-up analyses included examination of cell frequencies and percentages and calculation of residuals (Sheskin, 2000).

Research Question 4

Pearson and point-biserial correlations were used to determine the relationship between parental control of their child's eating behavior (restriction, pressure, and monitoring) and the child's BMI and eating behavior group, respectively. In addition, Pearson correlations were used to evaluate the relationship between parental control of their child's physical activity (regulation of their child's sedentary activity, encouragement for their child to be physically active, and participation in physical activity with their child) and the child's physical activity level and BMI. All Pearson and point-biserial correlations were calculated for the healthy and unhealthy child eating behavior groups.

Research Question 5

To assess the relationship between the child's eating behavior and physical activity level with BMI, a point-biserial correlation was calculated for eating behavior versus BMI, and a Pearson correlation was calculated for physical activity level versus BMI. Point-biserial and Pearson correlations were calculated for the healthy and unhealthy child eating behavior groups.

Summary

The target population for this study was parents/guardians of children between the ages of 6 and 11 years who were enrolled in second, third, or fourth grade in one of five Tompkins County elementary schools. After obtaining permission from each school's principal, all 2nd, 3rd, and 4th grade teachers distributed the surveys to their classes, and

instructed the students to bring them home to their parents. Parents filled out the 92 question survey for themselves and the "study children." Survey sections included parent and child demographics, eating behavior, and physical activity level, as well as parental control of child eating behavior and physical activity level and parental attitudes toward their own and their child's weight status, eating behavior, and physical activity level. One-hundred and twenty-seven of the 947 surveys distributed, 13%, were returned to the researcher, coded numerically, and entered into a database created in SPSS.

Six parent groups (Appendix I) and eight child groups (Appendix J) were created for the data analysis of this project and included: healthy eating behaviors, unhealthy eating behaviors, high body mass index (BMI), low BMI, high physical activity level (PAL), and low PAL. Additionally, child normal weight and overweight groups were created based on the United States 2000 Center for Disease Control growth charts for children age 2 through 20 years (http://www.cdc.gov/growthcharts/).

The alpha level for all analyses was set at .05. For research question one Pearson correlations were calculated to determine the relationship between parent and child BMI and parent and child PAL for each parent group (healthy/unhealthy eating behavior, high/low BMI, and high/low PAL); chi square goodness of fit was used to evaluate the relationship between parent high/low BMI groups and the child's actual weight status (normal weight or overweight) based on the 2000 CDC growth charts for children; and chi square goodness of fit was used to evaluate the relationships between parent healthy/unhealthy eating behavior groups, parent high/low BMI groups, and parent high/low PAL groups and their children's eating patterns. For research question two an independent t-test was performed to assess parental attitude towards their child's eating

behavior between children in the healthy eating behavior group and those in the unhealthy eating behavior group; a Pearson correlation was calculated to determine the relationship between parent attitude towards their child's physical activity and the child's total energy expenditure (kcal/day); an independent t-test was used to evaluate the relationship between parental attitude toward their child's weight status and their child's actual BMI; and a chi square goodness of fit test was used to evaluate the relationship between parent attitude toward their child's weight status and the child's actual weight status (normal weight or overweight) based on the 2000 CDC growth charts for children. Similarly, for research question three an independent t-test was used to assess parental attitude towards their own eating behavior between parents in the healthy eating behavior group and those in the unhealthy eating behavior group; a Pearson correlation was calculated to determine the relationship between parent attitude towards their own physical activity and their total energy expenditure (kcal/day); an independent t-test was used to evaluate the relationship between parental attitude toward their own weight status and their actual BMI; and chi square goodness of fit was used to evaluate the relationship between parent attitudes toward their own weight status versus parent high/low BMI groups. For research question four Pearson and point-biserial correlations were used to determine the relationship between parental control of their child's eating behavior (restriction, pressure, and monitoring) and the child's BMI and eating behavior group, respectively; and Pearson correlations were used to evaluate the relationship between parental control of their child's physical activity and the child's physical activity level and BMI. For research question five a point-biserial correlation was calculated for eating behavior versus BMI, and a Pearson correlation was calculated for physical activity level

versus BMI. All Pearson and point biserial correlations for research questions four and

five were calculated for the healthy and unhealthy child eating behavior groups.

Chapter 4

RESULTS

Introduction

This study was conducted to evaluate the contribution of parental factors related

to eating behavior and physical activity level on the development of childhood obesity.

Specifically, a survey instrument was administered to assess parent and child eating

behavior and physical activity, parental control of child eating behavior and physical

activity, and parental attitudes toward their own and their child's weight status, eating

behavior, and physical activity. Parents ($N = 127$) completed the 92 question survey for

themselves and the target children participating in the study. The contribution of parental

factors on the development of childhood obesity was assessed through the analysis of five

research questions via chi-square goodness of fit, independent t, and Pearson and point

biserial correlation analyses.

Demographics

Demographic data for study participants, illustrated in Tables 1-4, were collected

for gender, age, race, education, height, weight, marital and employment status, and

family income. Parent and child age, height, weight, and BMI are listed in Table 1, and

Table 2 lists parent and child gender and race. The typical parent profile was a 41-year

old white American female with a BMI of 24.6. The child profile included similar

frequencies for male ($n = 68$) and female ($n = 59$) subjects consisting primarily of white

American's with an average age of 8.7 years and BMI of 17.7. Table 3 illustrates the

parent highest level of schooling, and employment and marital status. Overall,

approximately 69% ($n = 127$) of parents held at least a 4-year college degree, 52%

Table 1

Summary of Descriptive Statistics for Parent and Child Age, Height, Weight,

and Body Mass Index

Variable	Parent			Children		
	M	*SD*	*n*	*M*	*SD*	*n*
Age (years)	40.6	7.1	127	8.7	1.0	126
Male						
Height (in.)	70.3	3.1	16	53.5	3.5	64
Weight (lbs.)	177.9	27.2	16	70.5	16.3	66
Female						
Height (in.)	65.2	2.5	111	52.9	4.1	57
Weight (lbs.)	147.4	26.4	110	72.6	22.2	57
BMI (kg/m^2)	24.6	4.7	126	17.7	3.7	121

Table 2

Frequency Table of Parent and Child Gender and Race

Variable	Parent Frequency	Child Frequency
Gender	($n = 127$)	($n = 127$)
Male	16	68
Female	111	59
Race	($n = 126$)	($n = 126$)
African American	2	3
White American	102	97
Asian	10	10
Hispanic	3	5
Other	9	11

Table 3

Frequency Table of Parent Highest Level of

Schooling, Employment Status, and Marital

Status

Variable	Frequency
Schooling	($n = 127$)
11th Grade	1
12th Grade or GED	10
Trade School	4
Some College	24
B.S.	34
M.S.	28
M.D., PhD	26
Employment	($n = 127$)
Full – Time	66
Part – Time	23
Homemaker	22
Not Employed	3
Other	13

Table 3 (continued)

Variable	Frequency
Marital Status	($n = 126$)
Single	13
Married	97
Separated	4
Divorced	11
Widowed	1

($n = 127$) were employed full-time, and 77% ($n = 126$) were married. Table 4 lists child

grade in school and percentage of time lived in the study parent's household. Out of 127

children approximately 39% were in second grade, 27% were in third grade, 35% were in

fourth grade, and 88% lived in the study parent's household 100% of the time. Lastly,

the median estimated gross family income (to the nearest thousand) was $60, 000 ($SD =$

38,949).

Relationship Between Parent-Child Characteristics

Research question one sought to determine the relationship between parent and

child BMI (kg/m^2), parent and child PAL (kcal/day), and parent eating behavior and their

child's eating patterns.

Parent BMI versus Child BMI

Pearson correlations were calculated to determine the relationship between parent

and child BMI for each parent group (healthy/unhealthy eating behavior, high/low BMI,

and high/low PAL). Of the six total correlations only three were significant. For parents

in the unhealthy eating behavior group, the high PAL group, and low PAL group, parent

BMI correlates $r = .529, .527$, and $.517$ ($p < .01$) respectively to child BMI (see Table 5).

Therefore, for the unhealthy eating behavior and high/low PAL parent groupings as

parent BMI increased, child BMI increased. All other correlations (healthy eating

behavior and high/low BMI) were not significant.

A chi square goodness of fit test was performed to evaluate the relationship

between parent high/low BMI groups and the child's actual weight status (normal weight

or overweight) based on the 2000 CDC growth charts for children. As a result, a

Table 4

Frequency Table of Child Grade in

School and Percentage of Time

Lived in Study Parent's Household

(N = 127)

Variable	Frequency
Grade	
Second	49
Third	34
Fourth	44
Time	
25%	0
50%	2
75%	13
100%	112

Table 5

Pearson Correlations (r) for Parent and Child BMI (kg/m^2) and Parent and Child

PAL (kcal/day) by Parent Eating Behavior, BMI, and PAL Groups

Correlation	Eating Behavior Groups		BMI Groups		PAL Groups	
	Healthy	Unhealthy	High	Low	High	Low
BMI	0.179	0.529**	0.285	0.070	0.527**	0.517**
	($n = 28$)	($n = 26$)	($n = 32$)	($n = 35$)	($n = 29$)	($n = 30$)
PAL	0.040	0.115	-0.095	0.208	0.016	0.428**
	($n = 27$)	($n = 24$)	($n = 32$)	($n = 34$)	($n = 30$)	($n = 30$)

significant association was observed between parent high/low BMI groups (X^2 (1) = 12.23, $p < .01$) and the child's BMI classification as overweight or normal weight. As illustrated in Table 6, a higher percentage of normal weight children (70%) had parents in the low BMI group, whereas a higher percentage of overweight children (79%) had parents in the high BMI group. Furthermore, the chi-square cell containing overweight children with high BMI parents had an observed count that was significantly different from the expected count at the .05 level (Sheskin, 2000).

Parent PAL versus Child PAL

Pearson correlations were performed to determine the relationship between parent and child PAL for each parent group (healthy/unhealthy eating behavior, high/low BMI, and high/low PAL). Of the six correlations only one was significant. Parent PAL and child PAL correlated $r = .428$ ($p < .01$) for only the parent low PAL group; as parent PAL increased, child PAL increased (see Table 5). All other correlations (healthy/unhealthy eating behavior, high/low BMI, and high PAL) were not significant.

Parent Eating Behavior versus Child Eating Pattern

Chi square goodness of fit tests were used to evaluate the relationships between parent healthy/unhealthy eating behavior groups, parent high/low BMI groups, and parent high/low PAL groups and their children's eating patterns. As illustrated in Table 7, significant associations were found between parent eating behavior groups and child fruit (X^2 (1) = 12.28, $p < .01$), vegetable (X^2 (1) = 10.48, $p < .01$), protein (X^2 (1) = 8.06, $p < .01$), and sweets (X^2 (1) = 4.38, $p < .05$) consumption. Follow-up analyses showed that children with parents in the healthy eating behavior group were more likely to eat fruits (74%) and vegetables (77%) daily or more than once daily, conversely children with

Table 6

Summary Percentages of Parent BMI Group

and the Child's CDC Growth Chart

Classification as Normal Weight or Overweight

Parent BMI Group	Child CDC Growth Chart Classification	
	Normal Weight	Overweight
	(*n* = 37)	(*n* = 19)
Low BMI	70%	21%
High BMI	30%	79%

Note. 21% of overweight children (*n* = 4) have low

BMI parents (BMI < 22), and 79% of overweight

children (*n* = 15) have high BMI parents (BMI ≥ 26).

Table 7

Chi-Square Goodness of Fit Tests for Parent Eating Behavior,

BMI, and PAL Groups and Child Eating Pattern by Food Group

Food Group	df	Eating Behavior	df	BMI	df	PAL
		(*n* = 59)		(*n* = 71)		(*n* = 61)
Fruit	1	12.28**	2	1.96	2	3.54
Vegetables	1	10.48**	2	0.45	1	0.02
Dairy	1	0.76	1	0.29	1	0.29
Protein	1	8.06**	1	1.35	1	0.29
Carbohydrates	1	0.98	1	0.67	1	2.82
Sweets	1	4.38*	2	1.47	2	1.70
Snacks	2	0.09	2	10.55**	1	0.42

Note. *p< .05. **p < .01.

parents in the unhealthy eating behavior group were more likely to eat fruits (71%) occasionally or almost daily and vegetables (64%) never, rarely, occasionally, or almost daily (see Table 8). As displayed in Table 8, 86% of children with parents in the healthy eating behavior group ate protein daily or more than once daily, whereas 54% of children with parents in the unhealthy eating behavior group ate protein daily or more than once daily and 46% ate protein never, rarely, occasionally or almost daily. On the other hand, 25% of children with parents in the unhealthy eating behavior group ate sweets daily or more than once daily, whereas 52% of children with parents in the healthy eating behavior group ate sweets daily or more than once daily and only 48% ate sweets occasionally or almost daily (see Table 8).

Table 7 illustrates a significant association between parent high/low BMI groups and child snack (X^2 (2) = 10.55, $p < .01$) consumption. Follow-up analyses shown in Table 9 indicate that 40% of children with parents in the low BMI group ate snack food never or rarely compared with 17% of children with parents in the high BMI group. Likewise, only 3% of children with parents in the low BMI group ate snack food daily or more than once daily in contrast to 28% of children with parents in the high BMI group. However, both the parent low and high BMI groups had approximately equal percentages of children who ate snack food occasionally or almost daily, 57% and 56% respectively. All other relationships were not significant.

Summary of the Relationship Between Parent-Child Characteristics

A relationship was found between parent and child BMI for only the unhealthy eating behavior and high/low PAL parent groupings, such that as parent BMI increased, child BMI increased. However, for all other parent groupings (healthy eating behavior

Table 8

Summary Percentages of Child Fruit, Vegetable, Protein, and Sweets

Consumption at Meals by Parent Healthy/Unhealthy Eating Behavior Groups

	Parent Eating Behavior Group	
Variable	Healthy	Unhealthy
Fruit Consumption	($n = 31$)	($n = 28$)
Occasionally or Almost Daily	26%	71%
Daily or More Than Once Daily	74%	29%
Vegetable Consumption	($n = 31$)	($n = 28$)
Never, Rarely, Occasionally, or Almost Daily	23%	64%
Daily or More Than Once Daily	77%	36%
Protein Consumption	($n = 31$)	($n = 28$)
Never, Rarely, Occasionally, or Almost Daily	13%	46%
Daily or More Than Once Daily	87%	54%
Sweets Consumption	($n = 31$)	($n = 28$)
Occasionally or Almost Daily	48%	75%
Daily or More Than Once Daily	52%	25%

Note. 26% of children ($n = 8$) with parents in the healthy eating behavior group ate fruit occasionally or almost daily at meals and 74% ($n = 23$) ate fruit daily or more than once daily at meals.

Table 9

Summary Percentages of Child Snack Food Consumption by

Parent High/Low BMI Groups

	Parent BMI Group	
Snack Food Consumption	Low BMI	High BMI
	($\underline{n}$ = 35)	($\underline{n}$ = 36)
Never or Rarely	40%	17%
Occasionally or Almost Daily	57%	56%
Daily or More Than Once Daily	3%	28%

Note. 40% of children (n = 14) with parents in the low BMI group ate snack food never or rarely at meals compared to 17% (n = 6) of children with parents in the high BMI group.

and high/low BMI) no relationship was found between parent and child BMI. In addition, the relationship between parent and child BMI was further illustrated via the finding that a higher percentage of normal weight children (70%) had parents in the low BMI group, whereas a higher percentage of overweight children (79%) had parents in the high BMI group. Next, parent PAL and child PAL were related for only the parent low PAL group; as parent PAL increased, child PAL increased. Yet, for all other parent groupings (healthy/unhealthy eating behavior, high/low BMI, and high PAL) no relationship was found between parent and child PAL. Furthermore, children with parents in the healthy eating behavior group were more likely to eat fruits, vegetables, protein, and sweets on a daily or more than once daily basis at meals than children with parents in the unhealthy eating behavior group. Lastly, children with parents in the low BMI group ate snack food on a less frequent basis at meals than those with parents in the high BMI group.

Relationship Between Parent Attitude and Child Characteristics

Research question two evaluated the relationship between parental attitude toward their child's eating behavior and the actual eating behavior of their child, parental attitude toward their child's physical activity and the child's total energy expenditure (kcal/day), and parental attitude toward their child's weight status and their child's actual BMI (kg/m^2).

Parent Attitude versus Child Eating Behavior

An independent t-test was performed to assess parental attitude toward their child's eating behavior between children in the healthy eating behavior group and those in the unhealthy eating behavior group. The creation of child healthy and unhealthy

eating behavior groups determined the child's actual eating behavior. For this analysis the independent variable was child eating behavior group (2 levels – healthy/unhealthy) and the dependent variable was parent attitude score. Results revealed significant differences (t (71) = -3.7, $p < .01$) in parental attitude toward their child's eating behavior between children in the healthy eating behavior group (M = 40.68, SD = 3.89) and those in the unhealthy eating behavior group (M = 36.39, SD = 5.68) (See Table 10). Parents of children classified as unhealthy eaters had a more "negative" attitude toward their child's eating behaviors than parents of children classified as healthy eaters.

Parent Attitude versus Child PAL

A Pearson correlation was calculated to determine the relationship between parent attitude toward their child's physical activity and the child's total energy expenditure (kcal/day). Results indicated that parent attitude did not correlate to the child's total energy expenditure (r = -.106, p = .26).

Parent Attitude versus Child BMI

An independent t-test was used to evaluate the relationship between parental attitude toward their child's weight status and their child's actual BMI. The independent variable was parental attitude toward their child's weight status (2 levels – normal weight/overweight) and the dependent variable was the child's BMI (kg/m^2). A significant difference (t (17.1) = -6.52, $p < .01$) was found between parental attitude toward their child's weight status as normal weight (M = 16.61, SD = 2.1) or overweight (M = 24.15, SD = 4.69) and the child's actual BMI (see Table 11). Children whose parents perceived them as normal weight had a lower average BMI than children whose parents perceived them as overweight.

Table 10

Summary Statistics of Parent Attitude Scores for Parent Attitude

Toward Their Own and Their Child's Eating Behavior by Parent

and Child Healthy/Unhealthy Eating Behavior Groups

	Child			Parent	
Statistic	Healthy	Unhealthy		Healthy	Unhealthy
M	40.68	36.39		36.97	31.89
SD	3.89	5.68		5.01	6.96
n	37	36		31	28
SEM	0.64	0.95		0.90	1.31
t		-3.77			-3.24
p		0.000			0.002

Note. Lower scores indicate a more negative attitude and higher

scores indicate a more positive attitude toward eating behavior.

The lowest possible score was 10 and the highest was 50.

Table 11

Summary Statistics of Parent and Child BMI (kg/m^2) Grouped by Parent

Attitude Toward Their Own and Their Child's Weight Status as Normal

Weight or Overweight

Statistic	Child		Parent	
	Normal Weight	Overweight	Normal Weight	Overweight
M	16.61	24.15	21.98	27.72
SD	2.1	4.69	2.03	5.06
n	103	17	68	52
SEM	0.21	1.14	0.25	0.70
t	-6.52		-7.72	
p	0.00		0.00	

Note. Children whose parents perceived them as normal weight had a

mean BMI of 16.61; parents who perceived themselves as normal

weight had a mean BMI of 21.98.

Parent Attitude versus Child BMI Classification

A chi square goodness of fit test was performed to evaluate the relationship between parental attitude toward their child's weight status and the child's actual weight status (normal weight or overweight) based on the 2000 CDC growth charts for children age 2 through 20 years, which take the child's age and gender into consideration when determining BMI classifications. Consequently, a significant association was observed between parental attitude toward their child's weight status (X^2 (1)= 39.67, $p < .01$) and the child's BMI classification as overweight or normal weight. As illustrated in Table 12, the majority of parents correctly perceived their normal weight children as normal weight. However, parents misclassified approximately one-half of the overweight children as normal weight (see Table 12). In addition, chi square cells that contained overweight children who were perceived as overweight, and normal weight children perceived as overweight had observed counts that were significantly different from expected counts at the .01 level. Furthermore, the cell containing overweight children that were perceived as normal weight had an observed count that was significantly different from the expected count at the .05 level.

Summary of the Relationship Between Parent Attitude and Child Characteristics

Parents of children classified as unhealthy eaters had a more "negative" attitude toward their child's eating behaviors than parents of children classified as healthy eaters. On the other hand, results indicated that parent attitude toward their child's physical activity had no relationship with the child's total energy expenditure. Furthermore, children whose parents perceived them as normal weight had a lower average BMI than children whose parents perceived them as overweight. Lastly, when children were

Table 12

Summary Percentages of Parent Attitude Toward Their Child's

Weight Status and the Child's CDC Growth Chart Classification

as Normal Weight or Overweight

	Child CDC Growth Chart Classification	
Parent Attitude	Normal Weight	Overweight
	$(n = 72)$	$(n = 31)$
Normal Weight	99%	48%
Overweight	1%	52%

Note. 48% of children ($n = 15$) classified as overweight according to the 2000 CDC Growth Charts for children were perceived as normal weight by their parents, and 52% of children ($n = 16$) classified as overweight were perceived as overweight by their parents.

classified into normal weight and overweight groupings based on the 2000 CDC growth charts, the majority of parents correctly perceived their normal weight children as normal weight, however parents misclassified approximately one-half of the overweight children as normal weight.

<u>Relationship Between Parent Attitude and Characteristics</u>

Research question three sought to determine the relationship between parental attitude toward their own eating behavior, physical activity, and weight status and their actual eating behavior, total energy expenditure (kcal/ day), and BMI (kg/m^2).

<u>Parent Attitude versus Parent Eating Behavior</u>

An independent t-test was used to assess parental attitude toward their own eating behavior between parents classified as healthy eaters and those classified as unhealthy eaters. The independent variable was parent eating behavior group (2 levels – healthy/unhealthy) and the dependent variable was parent attitude score. Results revealed significant differences (t = -3.24 (57), p < .01) in parental attitude towards their own eating behavior between parents in the healthy eating behavior group (M = 36.97, SD = 5.01) and those in the unhealthy eating behavior group (M = 31.89, SD = 6.96) (See Table 10). Parents classified as unhealthy eaters had a more "negative" attitude toward their eating behaviors than parents classified as healthy eaters.

<u>Parent Attitude versus Parent PAL</u>

A significant correlation was found (r = .21, p < .05) between parent attitude towards their own physical activity and their total energy expenditure (kcal/day). Therefore, as parent attitude toward their physical activity "became more positive", total

energy expenditure (kcal/day) increased. Likewise when parent attitude became "more negative" toward their physical activity, total energy expenditure (kcal/day) decreased.

Parent Attitude versus Parent BMI

An independent t-test was used to evaluate the relationship between parental attitude toward their own weight status and their actual BMI. A significant difference (t (63.5) = -7.72, $p < .01$) was found between parental attitude toward their own weight status as normal weight ($M = 21.98$, $SD = 2.03$) or overweight ($M = 27.72$, $SD = 5.06$) and their actual BMI (see Table 11). Parents who perceived themselves as normal weight had a lower average BMI than parents who perceived themselves as overweight.

Parent Attitude versus Parent BMI Group

Finally, a chi square goodness of fit test was used to evaluate the relationship between parent attitudes toward their own weight status versus parent BMI groups (high/low). As shown in Table 13, a significant association was found between a parent attitude toward his/her own weight status (normal weight or overweight) and parent BMI group (X^2 (1) = 59.22, $p < .01$). The low BMI group was more likely to perceive themselves as normal weight and the high BMI group was more likely to perceive themselves as overweight. All cells within this chi-square have observed and expected counts that are significantly different at the .01 level.

Summary of the Relationship Between Parent Attitude and Characteristics

Parents classified as unhealthy eaters had a more "negative" attitude toward their eating behaviors than parents classified as healthy eaters. In addition, as parent attitude toward their physical activity "became more positive", total energy expenditure (kcal/day) increased. Furthermore, parents who perceived themselves as normal

Table 13

Summary Percentages of Parent Attitude Toward Their

Own Weight Status and Parent High/Low BMI Groups

	Parent BMI Group	
Parent Attitude	Low BMI	High BMI
	($n = 35$)	($n = 32$)
Normal Weight	97%	3%
Overweight	3%	97%

Note. 3% of high BMI parents (BMI $\geq$ 26, $n = 1$)

perceived themselves as normal weight, and 97%

($n = 31$) perceived themselves as overweight.

weight had a lower average BMI than parents who perceived themselves as overweight. Finally, parents in the low BMI group were more likely to perceive themselves as normal weight and those in the high BMI group were more likely to perceive themselves as overweight.

<center>Relationship Between Parental Control and Child Characteristics</center>

Research question four assessed the relationship between parental control of their child's eating behavior (restriction, pressure, and monitoring) and the child's BMI (kg/m^2) and eating behavior group (healthy/unhealthy), respectively. In addition, the relationship between parental control of their child's physical activity (regulation of their child's sedentary activity, encouragement for their child to be physically active, and participation in physical activity with their child) and the child's total energy expenditure (kcal/day) and BMI (kg/m^2) was evaluated.

<u>Parental Control versus Child Eating Behavior and BMI</u>.

Pearson and point-biserial correlations were used to determine the relationship between parental control of their child's eating (restriction, pressure, and monitoring) and the child's BMI and eating behavior group, respectively. As a result, parent pressure to eat correlated significantly $(r = -.419, p < .01)$ with child BMI. Suggesting that as parent pressure to eat increased, child BMI decreased and vice versa. However, it is unclear if or what the cause and effect relationship is between parental pressure to eat and child BMI. All five other correlations were not significant.

<u>Parental Control versus Child PAL and BMI</u>

Pearson correlations were used to evaluate the relationship between parental control of their child's physical activity (regulation of their child's sedentary activity,

encouragement for their child to be physically active, and participation in physical activity with their child) and the child's total energy expenditure and BMI. As a result, a significant relationship was found between parent activity with their child and the child's BMI ($r = -.312$, $p < .01$) indicating that as parent participation in physical activity with their child increased, child BMI decreased and vice versa. All five other correlations were not significant.

Summary of the Relationship Between Parental Control and Child Characteristics

Of the six correlations used in the determination of the relationship between parental control of their child's eating (restriction, pressure, and monitoring) and the child's BMI and eating behavior group, only parent pressure to eat correlated with child BMI. As parent pressure to eat increased, child BMI decreased. Similarly, of the six correlations used to evaluate the relationship between parental control of their child's physical activity (regulation of their child's sedentary activity, encouragement for their child to be physically active, and participation in physical activity with their child) and the child's total energy expenditure and BMI, only parent activity with their child correlated with the child's BMI. As parent participation in physical activity with their child increased, child BMI decreased.

Relationship Between Child Eating Behavior Group and Child PAL and BMI

Research question five evaluated the relationship between the child's eating behavior and physical activity level with BMI. A Point-biserial correlation was calculated for eating behavior groups versus BMI, and a Pearson correlation was calculated for physical activity level (kcal/day) versus BMI. Child eating behavior groups (healthy/ unhealthy) did not correlate ($r_{pb} = -0.06$, $p = 0.65$) with the child's BMI.

On the other hand, child physical activity level did correlate ($r = 0.68, p < .01$) to child BMI. The results indicate that as the child's physical activity level increased, the child's BMI increased and vice versa.

Summary of the Relationship Between Child Eating Behavior Group and Child PAL and BMI

Child eating behavior groups (healthy/ unhealthy) had no relationship with the child's BMI. However, child physical activity level did have a relationship with child BMI; as the child's physical activity level increased, the child's BMI increased.

Summary

For the unhealthy eating behavior and high/low PAL parent groupings a significant relationship was found between parent and child BMI, such that as parent BMI increased, child BMI increased. However for all other parent groups (healthy eating behavior and high/low BMI) no significant relationships were identified. The relationship between parent and child BMI was further illustrated with a significant association between parent high/low BMI groups and the child's BMI classification as overweight or normal weight based on the 2000 CDC growth charts for children. A higher percentage of normal weight children (70%) had parents in the low BMI group, whereas a higher percentage of overweight children (79%) had parents in the high BMI group. Next, a significant relationship was found between parent and child PAL for only the parent low PAL group; as parent PAL increased, child PAL increased. Thus, no significant relationships were observed between parent and child PAL for all other parent groups (healthy/unhealthy eating behavior, high/low BMI, and high PAL). Then, significant associations were found between parent eating behavior groups

(healthy/unhealthy) and their child's fruit, vegetable, protein, and sweets consumption. Children with parents classified as healthy eaters were more likely to eat fruits, vegetables, protein, and sweets on a daily or more than once daily basis at meals than children with parents classified as unhealthy eaters. However, no significant associations were found between parent eating behavior groups (healthy/unhealthy) and child dairy, carbohydrate, and snack food consumption. Furthermore, a significant association was found between parent BMI groups (high/low) and child snack consumption despite no significant association between parent BMI groups and child fruit, vegetable, dairy, protein, carbohydrates, and sweets consumption. Children with parents in the low BMI group ate snacks on a less frequent basis at meals than those with parents in the high BMI group. Finally, no significant associations were found between parent PAL groups (high/low) and their children's eating patterns (fruit, vegetable, dairy, protein, carbohydrate, sweets, and snacks consumption).

Significant differences were found for parental attitude towards their child's eating behavior between children in the healthy eating behavior group and those in the unhealthy eating behavior group. Parents of children classified as unhealthy eaters had a more "negative" attitude toward their child's eating behaviors than parents of children classified as healthy eaters. Conversely, no significant relationship was found between parent attitude toward their child's physical activity and the child's total energy expenditure (kcal/day). Furthermore, a significant difference was found between parental attitude toward their child's weight status as normal weight or overweight and the child's actual BMI. Children whose parents perceived them as normal weight had a lower average BMI than children whose parents perceived them as overweight. These results

were further illustrated when a significant association was observed between parental attitude toward their child's weight status and the child's BMI classification as overweight or normal weight based on the 2000 CDC growth charts for children. The majority of parents correctly perceived their normal weight children as normal weight, however parents misclassified approximately one-half of the overweight children as normal weight.

Significant differences were found in parental attitude towards their own eating behavior between parents in the healthy eating behavior group and those in the unhealthy eating behavior group. Parents classified as unhealthy eaters had a more "negative" attitude toward their eating behaviors than parents classified as healthy eaters. In addition, a significant relationship was found between parent attitude towards their own physical activity and their total energy expenditure (kcal/day). As parent attitude toward their physical activity "became more positive", total energy expenditure (kcal/day) increased. Similarly, a significant difference was found between parental attitude toward their own weight status as normal weight or overweight and their actual BMI. Parents who perceived themselves as normal weight had a lower average BMI than parents who perceived themselves as overweight. This result was further illustrated when a significant association was found between parent attitude toward their own weight status as normal weight or overweight and parent BMI groups (high/low). Parents in the low BMI group were more likely to perceive themselves as normal weight and those in the high BMI group were more likely to perceive themselves as overweight.

Despite a significant relationship between parent pressure to eat and child BMI; as parent pressure to eat increased, child BMI decreased; no significant relationships were

found between the other parental control of child eating behavior variables (restriction and monitoring) and child BMI. In addition, there was no significant relationship between parental control of their child's eating (restriction, pressure, and monitoring) and the child's eating behavior group (healthy/unhealthy). Furthermore, despite a significant relationship between parent activity with their child and the child's BMI; as parent participation in physical activity with their child increased, child BMI decreased; all other physical activity parental control variables (regulation of their child's sedentary activities and encouragement for their child to be physically active) had no significant relationship on the child's total energy expenditure and BMI.

Finally, a significant relationship was not found between child eating behavior groups (healthy/ unhealthy) and child BMI. On the other hand, a significant relationship was found between child physical activity level and child BMI; as the child's physical activity level increased, the child's BMI increased.

Chapter 5

DISCUSSION

Introduction

The purpose of this study was to evaluate the contribution of parental factors related to eating behavior and physical activity level on the development of childhood obesity. Five research questions, each with several sub-questions, were analyzed for this study. Research question one assessed the relationship between parent and child BMI (kg/m^2) and PAL (kcal/day), and parent eating behavior and their child's eating patterns. Research question two evaluated the relationship between parental attitude toward their child's eating behavior, physical activity, and BMI and their child's actual eating behavior, total energy expenditure (kcal/day), and BMI (kg/m^2). Research question three investigated the relationship between parental attitude toward their own eating behavior, physical activity, and weight status and their actual eating behavior, total energy expenditure (kcal/ day), and BMI (kg/m^2). Research question four assessed the relationship between parental control of their child's eating behavior (restriction, pressure, and monitoring) and the child's BMI (kg/m^2) and eating behavior group (healthy/unhealthy). Furthermore, the relationship between parental control of their child's physical activity (regulation of their child's sedentary activity, encouragement for their child to be physically active, and participation in physical activity with their child) and the child's total energy expenditure (kcal/day) and BMI (kg/m^2) was evaluated in research question four. Lastly, research question five investigated the relationship between the child's eating behavior and physical activity level with BMI.

<u>Relationship Between Parent-Child Characteristics</u>

<u>Parent BMI versus Child BMI</u>

It appeared as though the relationship between parent and child BMI varied depending on the parents eating behavior, BMI, and PAL classification. For parents classified as practicing unhealthy eating behaviors, the results indicated that parent BMI had a significant relationship with child BMI ($r = .529, p < .01$). In addition, for the parent's classified as having high and low PAL's, results suggested that as parent BMI increased, child BMI also increased ($r = .527$ and $.517$ respectively, $p < .01$). Therefore, for parents who practiced unhealthy eating behaviors and for those classified as having high and low PAL's, these data suggested that there is a direct relationship between parent and child BMI. Interestingly, these data indicated that the relationship between parent and child BMI was not significant for parents who practiced healthy eating behaviors and those classified as having high and low BMI's.

Based on further investigation of the relationship between parent and child BMI, it appeared that overweight parents were more likely to have overweight children and normal weight parents were more likely to have normal weight children. Children were classified as normal weight if their BMI was $\leq 75^{th}$ percentile and overweight if their BMI was $\geq 85^{th}$ percentile according to the 2000 CDC growth charts. Of the 37 normal weight children 70% had normal weight (low BMI group = BMI < 22) parents, and 30% had overweight (high BMI group = BMI ≥ 26) parents. Interestingly, of the 19 overweight children, 21% had normal weight (low BMI group) parents, and 79% had overweight (high BMI group) parents. This evidence supports the belief that parent and child weight status as determined by BMI are related. In addition, this emphasizes the

concern that overweight parents will have overweight children who may become overweight adults. The results of this particular analysis and therefore the conclusions do not distinguish between genetic and environmental factors, but literature suggests a combination of the two is likely (Hill & Melanson, 1999).

Despite the fact that there is available data within the literature indicating that the genetic contribution to variability in body fatness lies somewhere between 25 and 70%, with monozygous twin studies suggesting 50-70% and family studies suggesting 25-50%, it is clear that environmental factors also affect body fatness (Hill & Melanson, 1999). Although these genetic and environmental factors regarding body fatness have been documented, studies comparing parent and child body weight related variables, including results from the current study, have revealed that the relationship is not perfectly correlated. For example, Johnson & Birch (1994) found that father, but not mother, BMI was marginally correlated to children's weight and weight/height. However, further investigation determined that it was the girls' weight and weight/height that was significantly correlated to the fathers' BMI, not the boys' weight and weight/height. Furthermore, Klesges et al. (1986) found that parent relative weight, both mother and father, was significantly, yet weakly correlated to the child's relative weight.

Although perfect relationships between parent and child weight related variables have not been found in the literature, studies including the current study have found several significant relationships suggesting that obese children frequently have obese parents (Bar-Or et al., 1998; Johnson & Birch,1994; Klesges et al., 1986, Whitaker et al., 1997). Literature has suggested that about 30% of the time, obese children have two obese parents, with a range in frequency of about 5 to 45%. Despite the fact that the

child's risk of obesity is higher if they have obese parents, it has also been estimated that about 25-35% of obese children have normal weight parents. A study by the USDA illustrated this relationship with findings that 35% of overweight children had overweight parents and 20% of overweight children had normal weight parents (Variyam, 2001). Overall, in comparison to the general population prevalence of the overweight/obese condition, the level of risk for a first-degree relative of an overweight to severely obese person is 2 to 3 (Bar-Or et al., 1998).

The variation of study findings, in past literature and the current study, regarding the relationship between parent and child body weight related variables may be explained by the results of Whitaker et al. (1997), which estimated that parental obesity more than doubles the risk of adult obesity among both obese and non-obese children under 10 years of age. The Whitaker et al. (1997) study suggested that although children of obese parents may not be obese during childhood their likelihood of becoming obese as adults is doubled; indicating that parent and child weight related variables may not correlate throughout the child's entire lifespan despite the influence of similar genetic and environmental factors within families. This is consistent with the suggestion that the heritability level of body fatness increases from birth to puberty and reaches its maximum at biological maturity (Bar-Or et al., 1998).

Parent PAL versus Child PAL

The relationship between parent and child PAL varied based on the parent eating behavior, BMI, and PAL classification. For parents classified as having a low PAL, the results indicated that parent PAL had a significant relationship with child PAL, with child PAL increasing as parent PAL increased ($r = .428, p < .01$). However, these data

suggested that the relationship between parent and child PAL was not significant for parents classified as healthy or unhealthy eaters, for those with high or low BMI's, or for those with high PAL's.

Support for the overall lack of relationship found in this study between parent and child PAL can be found in the literature. In Sallis et al.'s (2000) review of 29 studies on parental influence on child physical activity, 38% revealed a positive correlation. However, based on the overall inconsistency of results in the reviewed studies the relationships were viewed to be indeterminate (Sallis et al., 2000). On the other hand, several studies found evidence of familial aggregation in physical activity suggesting that parent physical activity influences child physical activity (Anderssen & Wold, 1992; Freedson & Evenson, 1991; Moore et al., 1991; Perusse et al., 1989; Sallis et al., 1988). For example, Freedson & Evenson (1991) and Moore et al. (1991) both used the Caltrac accelerometer to measure parent and child physical activity. Freedson & Evenson found that children of active and less active parents showed similar physical activity patterns to their parents, and that as the number of physically active parents increased, child physical activity levels increased. Similarly, Moore et al. (1991) found that children of active parents were almost six times as likely to be active than children of inactive parents. The overall inconsistency in study results may be due to differences in samples and the measurement of physical activity, and the complexity and wide range of potential factors determining child physical activity (Sallis et al., 2000).

Parent Eating Behavior versus Child Eating Pattern

It appeared as though children of parents classified as having healthy eating behaviors ate more fruit ($X^2(1) = 12.28$, $p < .01$), vegetables ($X^2(1) = 10.48$, $p < .01$), and

protein (X^2 (1) = 8.06, $p < .01$) at recommended levels (daily or more than once daily) based on the food guide pyramid than children of parents classified as having unhealthy eating behaviors. Furthermore, child sweets (X^2 (1) = 4.38, $p < .05$) consumption appeared to be higher than recommended independent of parent eating behavior groups (healthy/unhealthy) as neither group had children who ate sweets never or rarely (see Table 8). Lastly, the fact that no significant associations were found between parent eating behavior groups (healthy/unhealthy) and child dairy, carbohydrate, and snacks consumption, suggested that child consumption of dairy, carbohydrates, and snacks were similar independent of parent healthy/unhealthy eating behaviors.

Parents classified as healthy eaters typically ate fruits, vegetables, dairy, protein, and carbohydrates at meals daily or more than once daily. On the other hand, parents classified as unhealthy eaters typically ate fruits and vegetables never to almost daily; dairy and protein occasionally to more than once daily; and carbohydrates almost daily to more than once daily at meals. Since sweets and snack foods were not included in the criteria for healthy/unhealthy eating behavior groups the relationship between parent and child intakes were not evaluated for these food types. Nonetheless, the findings of this study suggested that children were to some extent modeling the healthy/unhealthy eating behaviors of their parent, specifically in regard to fruit, vegetable, and protein consumption. However, as a whole these data are limited in that they do not give specific information regarding serving sizes, caloric intake, and actual foods eaten as food choices within each food type can vary greatly in caloric and nutrient density.

Despite the fact that past studies have used different methodologies in the determination of parent and child nutrient intakes, similar to the current study, they have

found many significant relationships. For example, Oliveria et al. (1992) identified correlations between parent and child total energy, protein, carbohydrate, total fat, saturated fatty acid, monounsaturated and polyunsaturated fatty acid, and calcium via the analysis of parent and child diet records. Furthermore, although much of the literature over the past several years has focused on the relationship between parental obesity and the child's preference for high fat foods and actual fat intake (Eck et al., 1992; Fisher & Birch, 1995; and Nguyen et al., 1996), it is reasonable to believe that the significant relationships that have been observed are at least in part due to the obese parent modeling eating behaviors including a high fat intake which are then passed along to their children.

Furthermore, although the results from the current study did not specifically illustrate the relationship between parent and child eating behaviors, they suggested that overweight parents (high BMI group) had children who ate snack food more frequently at meals than children of normal weight parents (low BMI group) (X^2 (2) = 10.55, $p < .01$). Children of normal weight parents were significantly less likely than expected to eat snack food at meals on a daily or more than once daily basis (3%), and children of overweight parents were significantly more likely than expected to eat snack food at meals on a daily or more than once daily basis (28%) (see Table 9).

Overall, the current study appeared to be relatively consistent with past literature. Although the literature did not address this question specifically, it did consistently show that children of obese parents or parents with high BMI's, had a stronger preference for high fat foods and higher fat intakes (Eck et al., 1992; Fisher & Birch, 1995; and Nguyen et al., 1996). The current study is limited in that it did not allow for identification of specific snack items eaten at meals and thus fat content of the actual snacks eaten can not

be determined, however the survey instrument listed examples of snack foods as potato chips, Doritos, and cheese puffs, which are typically high in fat and carbohydrates.

Relationship Between Parent Attitude and Child Characteristics

Parent Attitude versus Child Eating Behavior

It appeared as though parents recognized to some level their child's "healthy" or "unhealthy" eating behaviors. Parents of healthy eaters generally had a more positive attitude ($M = 40.68$, $SD = 3.89$) toward their child's eating behaviors compared to parents of unhealthy eaters ($M = 36.39$, $SD = 5.68$).

The current study evaluated parental attitude toward their child's healthy or unhealthy eating behaviors via several questions regarding the child's consumption of too many sweets, high fat foods, and favorite foods; eating too many and too few times per day; eating too much and too little food per day; and the parents overall satisfaction level and perception of the child's eating behaviors as healthy or unhealthy (see Appendix F, questions 51-60). Five answers were possible ranging from "never" to "always", and each statement had a number associated with the response ranging from one to five to reflect the positive and negative attitudes of the statement. The answers to these questions were summed for each parent and correlated to the child's classification as having "healthy" or "unhealthy" eating behaviors. The lowest possible "negative" score for the ten questions was 10, and the highest possible "positive" score was 50. Although the results suggested a significant relationship, these data are limited in that the methodology of determining parental attitudes toward the child's eating behavior has not been tested for reliability and validity, and the classification of child healthy/unhealthy eating behavior groups was made based on types of food eaten and the frequency in

which those foods were eaten at meals rather than on total caloric intake, specific foods eaten, and percentages of calories from carbohydrates, protein, and fats. Nonetheless, the results suggested that parents of children classified as having healthy eating behaviors had a more positive attitude towards their child's eating behaviors than parents of children classified as having unhealthy eating behaviors, indicating that they identified to some degree with healthy versus unhealthy eating behaviors.

Overall, it appeared as though little research has been done in the area of parental attitude toward their child's eating behaviors. A study by Burroughs & Terry (1992) indicated that the majority of parents were satisfied with their child's rate and frequency of eating, types of food eaten, and amount of food eaten independent of differences in child weight for height percentiles. It is important to note that Burroughs & Terry (1992) collected information from one parent via questionnaire and the child's actual eating behavior was not assessed. Thus, it is difficult to draw conclusions from this study about how parent attitude toward eating may or may not influence actual child food consumption and weight status.

Parent Attitude versus Child PAL

Results suggested that parents might not have adequately assessed their child's physical activity level as it relates to health. Overall, it appeared as though parent attitude toward the child's physical activity was independent of the child's actual energy expenditure (kcal/day), based on the result that parent attitude toward their child's physical activity did not correlate to child estimated total energy expenditure (kcal/day) (r = -.106, p = .26).

The current study assessed parental attitude toward their child's physical activity via the following two questions: 1) "In general, do you think your child is getting enough physical activity to stay healthy?;" and 2) "Overall, are you satisfied with your child's physical activity level?" Five multiple-choice answers were possible, ranging from "always (5)" to "never (1)". The sums of these responses were then correlated with the child's estimated total energy expenditure per day (kcal/day). This method of assessing parental attitude might not have revealed significant results as it has not been tested for validity or reliability. In addition, child total energy expenditure (kcal/day) was estimated based on parent self-report of the child's time spent in sleep, moderate, hard, and very hard activities rather than being measured directly. Furthermore, it appears as though past researchers have not evaluated the relationship between parental attitudes, as they relate to parental perception of healthy levels of child physical activity and satisfaction with their child's level of physical activity, and child actual energy expenditure. For example, when Anderssen & Wold (1992) studied the relationship between the child's perceptions of the value/importance placed on physical activity by significant others (parents and best friend) and the child's physical activity level, they found a weak, but positive relationship. This indicated that the perceived value that significant others placed on physical activity influenced the child's level of physical activity. However, it is logical to believe that the value/importance of physical activity as it is perceived by the child, could be different then the parent's perception of healthy levels of child physical activity and satisfaction with their child's level of physical activity.

Parent Attitude versus Child BMI

Results suggested that parents fairly accurately assessed their child as normal weight or overweight. Children whose parents perceived them as normal weight had a significantly lower average BMI ($M = 16.61$, $SD = 2.1$) than children whose parents perceived them as overweight ($M = 24.15$, $SD = 4.69$). Based on the United States CDC 2000 growth charts a BMI of 16.61 is never considered overweight and a BMI of 24.15 is always considered overweight for boys and girls between the ages of 6 and 11 years. However, it is important to note that when the standard deviations in this study were carefully reviewed for child BMI, the BMI range for children perceived as normal weight varied from 14.5 to 18.7 and for those perceived as overweight were 19.5 to 28.9. According to the 2000 CDC growth charts, for our sample of children ranging from 7 to 11 years, BMI's as high as 16.6-19.4 are considered normal weight and as low as 17.4-20.8 are considered overweight in several age and gender categories. The overlap between the 2000 CDC growth chart normal weight and overweight ranges is due to the differences in what is considered normal weight versus overweight for children of different ages and gender. While parent ability to classify their child as normal weight or overweight was generally good, it became apparent that parents might not have done such an accurate job of classifying their child's weight status as their was considerable variability in individual responses. Therefore, further investigation is needed to determine the accuracy of parent ability to assess level of fatness in their child.

Parent Attitude versus Child BMI Classification

Although most parents correctly classified their children as normal weight or overweight, the majority of misclassifications included parents perceiving their

overweight child as normal weight. Results revealed a significant association between parent attitude toward/perception of their child's weight status (normal weight or overweight) and the child's actual classification as normal weight ($\leq 75^{th}$ percentile) or overweight ($\geq 85^{th}$ percentile) based on the 2000 CDC growth charts. This analysis determined that 87 of 103 parents correctly classified their child as overweight ($n = 16$) or normal weight ($n = 71$). Of the 72 children actually classified as normal weight based on the 2000 CDC growth charts, only one was misclassified by their parent as overweight. On the other hand, of the 31 children actually classified as overweight based on the 2000 CDC growth charts, 15 were misclassified by their parent as normal weight. Thus, 48% of children who were overweight were perceived as normal weight by their parents. These results support the concern that not all parents identify their children as overweight when they actually are overweight, which could contribute to the rise in overweight children and the resultant negative health consequences (Friedman & Brownell, 1995; Jain et al., 2001; Myers & Vargas, 2000; Smith, 2000; Tucker, 2000). Furthermore, the results of this study indicated that 31 out of 103 children were overweight, for a 30% prevalence rate of overweight children. Therefore, the sample population appeared to have a higher prevalence rate of overweight children compared to the estimated 20% for the United States population ("Anonymous", 1999; Hill and Trowbridge, 1998).

Definitions used in the current study for normal weight ($\leq 75^{th}$ percentile) and overweight ($\geq 85^{th}$ percentile) are based on the 2000 CDC growth charts and seemed to be consistent with the literature. The clinical standards for defining overweight and obesity in children are not clearly established and accepted by the scientific community

as a whole. However the National Center for Health Statistics (NCHS) growth charts, which include the 1977 NCHS growth charts and the 2000 Center for Disease Control (CDC) growth charts, are widely and consistently used amongst the medical and scientific community. The 2000 Center for Disease Control (CDC) growth charts, which are referenced throughout the current study, represent a revised and improved version of the 1977 NCHS growth charts. The 1977 NCHS and 2000 CDC growth charts were devised mostly from the National Health and Examination Survey (NHANES), which has been collecting height, weight, and other health information from the United States population since 1960. The growth charts have been used as a clinical tool by pediatricians, nurses, and parents to track the growth of infants, children, and adolescents since 1977. Although the growth charts are not intended to be used as a lone diagnostic instrument, they are used to evaluate the growth of a child and contribute to an overall clinical impression of the child. According to the 2000 CDC growth chart, children with a BMI-for-age < 5th percentile are underweight, ≥ 85th percentile are at risk for overweight, and ≥ 95th percentile are overweight (http://www.cdc.gov/growthcharts). Despite several inconsistencies among the literature in the definitions of overweight and obesity in children, most studies to date have defined child overweight and/or obesity as a BMI-for-age ≥ 85th and/or ≥ 95th percentile based on either the 1997 NCHS or the 2000 CDC growth charts (Bellizzi & Dietz, 1999; Crespo et. al, 2001; Dwyer et al., 2001; Jain et. al, 2001; Mackenzie, 2000; Maynard et al., 2001; Myers & Vargas, 2000; Whitaker et al., 1997; Wilkins et al., 1998).

In addition, the current study findings appeared to be consistent with the literature. Dr. Barbara Dennison, a pediatrician and research scientist at Bassett

Healthcare Research Institute in Cooperstown, NY found that parents often responded in disbelief and denial when confronted with their child's obesity. Only 3% of parents of children with BMI's between the 85th and 95th percentiles perceived their child as even "slightly overweight", and none said their child was overweight. In addition, for children with BMI's above the 95th percentile, only 3% of parents perceived their child as overweight, and 25% called them "slightly overweight"(Smith, 2000; Tucker, 2000). Furthermore, Myers & Vargas (2000) found that of 200 children with weight for height percentiles above the 95th percentile, based on the National Center for Health Statistics (NCHS) 1977 growth charts, 35.5% of these children's parents did not think their child was obese. In fact, only 47% of parents agreed that their child was overweight, 7% perceived their child as "slightly overweight", and an alarming 45% thought their child's weight was "fine". Moreover, Jain et al. (2001) found that of 15 mothers with children defined as overweight based on a weight for height in the 90th percentile according to the 2000 CDC growth charts, only 10 perceived their child as either a little or very overweight. However, it is interesting to note that during focus group discussion the mothers revealed that they did not truly believe their children were overweight, and thus were unconcerned. Instead they used terms such as thick, solid, strong, and big-boned to describe their children's increased size. The mothers in the Jain et al. (2001) study did not accept or find it meaningful to use pediatric growth charts to define their children as overweight, instead they considered their children to be at a healthy weight if their activity and social functioning were unimpaired. Overall, mother's held the opinion that it was unlikely they could affect their child's biological predisposition to be overweight. In summary, although these studies are clearly in support of the disconnect between

parent perception and child overweight that has also been observed in the current study, it is important to note that the studies described above were all based on preschool children aged 1 to 5 years in contrast to the current study which included children from 7 to 11 years.

Relationship Between Parent Attitude and Characteristics

Parent Attitude versus Parent Eating Behavior

The results suggested that parents recognized to some level their own "healthy" or "unhealthy" eating behaviors. Parents who were healthy eaters generally had a more positive attitude ($M = 36.97$, $SD = 5.01$) toward their eating behaviors than unhealthy eaters ($M = 31.89$, $SD = 6.96$).

The current study evaluated parental attitude toward their own healthy or unhealthy eating behaviors via the same questions and methodology that was used to evaluate the relationship between parent attitude and child healthy/unhealthy eating behaviors (Appendix F, questions 23-32). Therefore, the findings of this analysis have the same limitations as previously discussed for the relationship between parent attitude and child healthy/unhealthy eating behaviors, and should be interpreted with caution. Furthermore, there appears to be no research to date, other than the present study, evaluating the relationship between parent attitude towards their healthy or unhealthy eating behaviors. However, based on the present study, parents seemed to be appropriately identifying to some degree with their healthy or unhealthy eating behaviors.

Parent Attitude versus Parent PAL

Parents appeared to be making some association between higher energy expenditure (kcal/day) and increased health, and lower energy expenditure (kcal/day) and

decreased health. In addition, this might suggest that parents with higher energy expenditure (kcal/day) were more satisfied with their level of physical activity than parents with lower energy expenditure (kcal/day). The results determined that as parent attitude toward their physical activity was "more positive", total energy expenditure (kcal/day) increased ($r = .21, p < .05$). Likewise when parent attitude was "more negative" toward their physical activity, total energy expenditure (kcal/day) decreased.

The current study assessed parental attitude toward their physical activity level via the same questions and methodology described for evaluation of the relationship between parent attitude and child physical activity level. Therefore, although the results revealed a significant relationship between parental attitude and their actual energy expenditure they must be interpreted carefully as the method of assessing parental attitude toward physical activity has not been tested for validity or reliability. In addition, parent total energy expenditure (kcal/day) was estimated based on parent self-report of time spent in sleep, moderate, hard, and very hard activities rather than being measured directly. In conclusion, it appears as though past researchers have not evaluated the relationship between parental attitudes, as they relate to parental perception of healthy levels of physical activity and satisfaction with their level of physical activity, and actual energy expenditure. Nonetheless, based on the results of the current study, parents seemed to be appropriately associating energy expenditure and health, and appeared to be more satisfied with higher rather than lower energy expenditure.

Parent Attitude versus Parent BMI

Parents seemed to do a reasonably good job of classifying themselves as normal weight or overweight, however according to the results it appeared as though some

normal weight individuals classified themselves as overweight. Parents who perceived themselves as normal weight had a significantly lower average BMI ($M = 21.98$, $SD = 2.03$) than parents who perceived themselves as overweight ($M = 27.72$, $SD = 5.06$). After closely examining the standard deviations, BMI's for parents who perceived themselves as normal weight ranged from 20 to 24, and BMI's for parents who perceived themselves as overweight ranged from 22.7 to 32.7. According to the American College of Sports Medicine (ACSM), a BMI of 18.5-24.9 is considered normal weight and a BMI of 25-29.9 is considered overweight for adults (Franklin, 2000).

Parent Attitude versus Parent BMI Group

Parents appeared to have a strong ability to accurately assess their weight status as a significant association was also found between parent attitude toward their own weight status (normal weight or overweight) and parent BMI groups (high/low). The majority of parents classified as having low BMI's (BMI $\leq$ 22) perceived themselves as normal weight and the majority of parents classified as having high BMI's (BMI $\geq$ 26) perceived themselves as overweight. Only one normal weight parent classified their weight status as overweight, and one overweight parent classified their weight status as normal weight. Overall, 65 out of 67 parents correctly classified themselves as normal weight or overweight according to ACSM standards for overweight (BMI between 25.0 and 29.9) and obese (BMI $\geq$ 30) adults (Franklin, 2000).

Overall, although the literature to date is not plentiful, it supports the results of the current study, which found that survey respondents were primarily mothers who correctly perceived themselves as normal weight or overweight. Jain et al. (2001) found that all 12 mothers who had BMI's greater than or equal to 30 correctly perceived themselves as

overweight. In addition, a study by the USDA, Economic Research Service (2002), indicated that 61.6 percent of men and 48.8 percent of women surveyed were overweight or obese. When asked about their perception of their weight status 40.8 percent of men and 59.3 percent of women believed they were overweight. Therefore, results revealed that women were more likely to correctly perceive themselves as overweight then men. In fact, women were not only more likely to correctly assess their weight status as overweight (90.2%) or obese (77.1%), they were also more likely to believe that they were overweight when they were actually either healthy weight or underweight (23.9%) (Kuchler & Variyam, 2002).

Furthermore, the USDA study also indicated that parental perception of their own weight status had an important influence on the weight status of their children. Of parents who correctly classified themselves as overweight, 32% of their children were overweight. However, among parents who did not perceive themselves as overweight but who were overweight according to ACSM standards, 42% of their children were overweight (Variyam, 2001). Indicating that parental misconception of their own weight status may increase the likelihood of having overweight children.

Relationship Between Parental Control and Child Characteristics

Parental Control versus Child Eating Behavior and BMI

The results suggested that of the three variables used to assess parental control of eating behavior (pressure, restriction, and monitoring), only pressure had a significant relationship with child BMI ($r = -.419$, $p = < .01$), and none correlated significantly with the child's eating behavior classification (healthy/unhealthy). This indicated that as parent pressure to eat increased, child BMI decreased and vice versa. This seemed

logical, as it would be expected that parents would pressure low BMI children more than high BMI children to eat, if in fact there is a relationship between the amount of food a child eats and their BMI. On the other hand, the results of this study could be due to parental pressure to eat causing decreased food consumption in the child, thus a lower BMI. Therefore, the influence that parental pressure to eat had on child BMI is unclear.

In agreement with the results of this study, Birch et al. (2000) found that parent pressure to eat was negatively related to the child's BMI and that parental monitoring of their child's eating was not related to the child's BMI. However, unlike the current study, Birch et al. (2000) did find that parental restriction of the child's eating was positively related to the child's BMI. In regards to parental pressure to eat, Burroughs and Terry (1992) also found that the child's weight for height was inversely related to parental encouragement to eat quickly, eat more, and clean the plate. Despite the negative relationship between parental pressure to eat and child BMI demonstrated in the studies previously discussed, much of the literature has found that parental control of eating led to decreased ability to regulate energy intake and increased body weight related variables in children (Birch et al., 1987; Johnson & Birch, 1994; & Klesges et al. 1983, 1986). In the case of Johnson & Birch (1994) this opposing result might be explained by the fact that the parental control variables studied were not separated specifically into categories for pressure or restriction. On the other hand, Klesges et al. (1983, 1986) specifically evaluated parental encouragement to eat and found positive relationships between parental encouragement and the child's relative weight and time spent eating. In conclusion, different methodologies may explain the differences in study results. For example, the current study and Birch et al. (2000) measured parental

control, specifically parental pressure/encouragement to eat via self-report (questionnaire), whereas Klesges et al. (1983, 1987) used direct observation of parent and child behaviors.

The lack of significant findings in this study regarding the relationship between the child's healthy/unhealthy eating behaviors and the child's BMI and parental control variables has not been specifically investigated in the literature. However, the literature suggested that there is a positive relationship between children who demonstrate stronger preferences and higher total intake of high fat foods and the child's level of adiposity (Fisher & Birch, 1995). The current study did not specifically obtain information about the child's dietary composition and total caloric intake, instead it merely investigated the types of food eaten at meals (fruits, vegetables, dairy, protein, carbohydrates, sweets, and snacks) and the whether those foods were eaten "never", "rarely", "occasionally", "almost daily", "daily" and "more than once daily." This methodology and its lack of reliability and validity testing may explain the absence of significance in the comparison of child eating behaviors (healthy/unhealthy) and the child's BMI and parental control of eating.

Parental Control versus Child PAL and BMI

Of the three variables used to assess parental control of physical activity (regulation of sedentary behavior, encouragement to be active, and engaging in physical activity with the child) only the parent's participation in physical activity with the child had a significant relationship with the child's BMI ($r = -.312, p < .01$), and none had a significant relationship with the child's total energy expenditure. Therefore, the results suggested that as parent activity with their child increased, child BMI decreased and vice

versa. This result was encouraging as it appeared as though when parents exercised with their child the child had a lower BMI, which supports the idea that parents should participate in physical activities with their child.

This finding regarding parental participation in their child's physical activities is both supported and contradicted by previous studies. Although it is reasonable to assume that the frequency with which parents engage in physical activities with their children communicates something to the child about the parent's value of exercise (Ross & Pate, 1987), there is very little literature that supports the notion that parent participation increases child participation and decreases child BMI. One study in support of this assumption is the National Children and Youth Fitness Study (NCYFS II). The NCYFS II was launched to investigate the physical fitness and physical activity habits of children ages six to nine, and found that parents of leaner children were more active and exercised more frequently with their children (Ross & Pate, 1987). On the other hand, a review of 29 studies reported a positive association between child physical activity and parent participation in child physical activity in about half of the studies. However, based on the overall inconsistency of results, the relationships were viewed to be indeterminate (Sallis et al., 2000). According to the 2000 CDC growth charts it is reasonable to believe that the current study resulted in significance due to the fact that low BMI children are likely to be younger and that parent's may spend more time participating in physical activity with younger children than with older children. This possible explanation is even more likely due to the fact that parent participation in child physical activity had no significant relationship with child total energy expenditure (kcal/day).

The overall lack of relationship between the three variables used to assess parental control of physical activity (regulation of sedentary behavior, encouragement to be active, and engaging in physical activity with the child) and the child's total energy expenditure and BMI that was found in this study is consistent with much of the literature. Klesges et al. (1986) found that parental encouragement to be active was related positively to only extreme levels of child activity and negatively to child relative weight, but not to minimal or moderate activity levels. In addition, in Sallis et al.'s (2000) review of studies looking mainly at parental influence, no association was found between parental encouragement to be physically active and the child's physical activity. Lastly, the relationship between parent regulation of sedentary behavior and the child's BMI and total energy expenditure has not been studied specifically. However, there is research suggesting that interventions targeted at decreasing sedentary activities have a significant effect on the child's relative BMI and energy expenditure (Robinson, 1999).

<u>Relationship Between Child Eating Behavior Group and Child PAL and BMI</u>

Based on the results, it appeared as though the child's eating behavior whether healthy or unhealthy, did not have a relationship with the child's BMI. This is contrary to the idea that unhealthy eating would result in higher BMI's and healthy eating would result in lower BMI's. Due to the nature of the survey instrument, healthy and unhealthy eating behaviors were not determined via total daily caloric intake and thus did not lend to the calculation of the percentage of calories from fats, carbohydrates, protein, etc., which may have affected this outcome. Instead only types of foods eaten at meals (fruits, vegetables, dairy, protein, carbohydrate) and the estimated frequency with which those types of foods were eaten was evaluated and used in the criteria for determination of

child eating behavior groups (healthy/unhealthy). Children classified as healthy eaters

typically ate fruits, vegetables, dairy, protein, and carbohydrates at meals daily or more

than once daily. On the other hand, children classified as unhealthy eaters typically ate

fruits and vegetables never to almost daily; dairy and protein occasionally to more than

once daily; and carbohydrates almost daily to more than once daily at meals.

The lack of significant findings between eating behavior and BMI from the

current study is supported by the results of several past studies. In general, energy intake

is considered to be an important variable in weight control, however many studies have

failed to find a significant relationship between total energy intake and adiposity in

children (Nguyen et al., 1996). Furthermore, dietary data from the United States has

suggested that the increase in obesity prevalence occurred despite an overall decrease in

fat consumption and little change in total caloric intake (Bar-Or et al., 1998). These

unexpected findings might be explained by the important interaction of energy intake and

expenditure, as they both play a role in weight regulation. In addition, controlled

experimental investigations have concluded that there is a tendency to underreport dietary

intake and overreport physical activity (Jebb & Moore, 1999), which may also explain

the inconclusive relationship between diet and adiposity, which has been documented in

the literature.

Furthermore, the current study results indicated that as the child's physical

activity level increased, the child's BMI increased and vice versa (r = .68, p < .01). This

finding was also unexpected, and suggests that children with higher physical activity

levels had higher BMI's rather than lower BMI's. Figure 1 shows the distribution of the

relationship between child BMI and PAL, and clearly illustrates that the relationship

violated the assumption of homoscedasticity. Homoscedasticity exists when the relationship between two variables is of equal strength across the whole range of both variables (Sheskin, 2000). Violation of this assumption was evidenced by the variability in the range of child PAL's based on BMI and the variability in the correlations for each age group (7-10 years). Specifically, for children with normal BMI's there was a small range of PAL's, whereas the range of PAL's for children with overweight BMI's was large. Furthermore, the unexpected relationship between child BMI and PAL that was found in this study may also have resulted from the indirect measurement of energy expenditure that was used for this study. This measure was based on parent self-report of their child's time spent in sleep, light, moderate, hard, and very hard activities, and was used to estimate the child's total energy expenditure. In addition, although muscle mass is quite variable in children and is probably not very predictive of caloric expenditure, children with high PAL's may have had high BMI's due to increased muscle mass. In conclusion, the results of this study suggest that further investigation and more accurate measurements of child physical activity level and body composition are needed to determine the relationship between these variables.

Despite findings such as Ross & Pate (1987), which suggested that leaner children were more physically active, much of the literature has failed to find negative associations between physical activity level and adiposity. For example, cross-sectional data of physical activity levels in 5-year old children revealed no relationship between physical activity level and percent body fat. In addition, significance was not found between lean and obese children for total or activity energy expenditure (Bar-Or et al., 1998). Lastly, results from Sallis et al.'s (2000) review of 54 studies confirm the
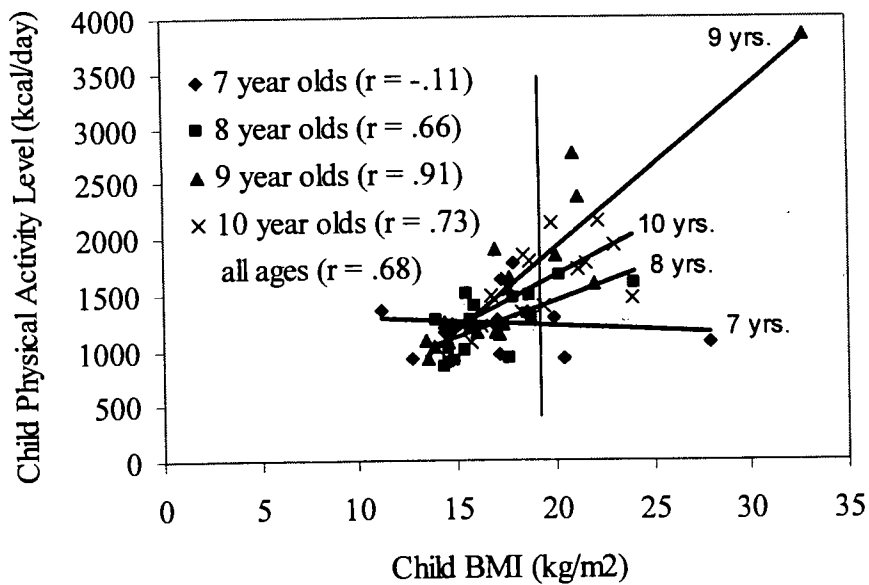
Figure 1. Scatterplot of the relationship between child physical activity level and BMI.

Vertical line represents BMI cut point for overweight children ages 7 to 10 years (BMI ≥

19). Diagonal lines represent least square regression lines for the relationship between

child physical activity level and BMI for children ages 7 to 10 years.

inconsistent relationship between physical activity level and body-weight related variables in children. Despite the high frequency in which these variables were studied (31 of the 54 studies), findings of negative associations with physical activity were inconsistent, and therefore considered to be indeterminate.

Summary

There are several significant findings of this study. First, the relationship between parent and child BMI varied based on the parents eating behavior, BMI, and PAL classification. Specifically, parents classified as unhealthy eaters and those with high or low PAL's, had BMI's that correlated positively with their child's BMI, such that the child's BMI was high if the parent's BMI was high. Based on further investigation of parent and child BMI's, there was a higher likelihood that overweight parents would have overweight children (79%) and normal weight parents would have normal weight children (70%). Likewise, parent and child PAL varied based on the parents eating behavior, BMI, and PAL classification. Specifically, parent's classified as having low PAL's had PAL's that correlated positively with their child's PAL, such that the child's PAL was high if the parent's PAL was high.

With regard to food choices, parents who were healthy eaters were more likely to have children who ate more fruit, vegetables, and protein at recommended levels based on the food guide pyramid compared to parents who were unhealthy eaters. Overweight parents had children who ate snack food more frequently at meals than children of normal weight parents. However, consumption of sweets by children was higher than recommended independent of parent eating behaviors. Furthermore, consumption of dairy, carbohydrates, and snacks were also independent of parents' eating behaviors.

Finally, these findings suggested that children are to some extent modeling the healthy/unhealthy eating behaviors of their parent.

Parent attitude toward their own and their child's eating behaviors revealed that parents were more negatively disposed toward their own and their child's eating behaviors when they were classified as "unhealthy". Likewise, parents had a "more positive" attitude when their own and their child's eating behaviors were classified as "healthy". Thus, parents appeared to distinguish between healthy and unhealthy eating behaviors, both in themselves and their children.

In contrast, parent attitude toward their child's physical activity level was independent of the child's actual energy expenditure. Therefore, parents may not be very good at associating their child's physical activity level to health benefits. On the other hand, parents appeared to acknowledge the association between their own higher energy expenditure and increased health benefits, and lower energy expenditure and decreased health benefits. This was evidenced in parents with high physical activity levels who also had positive attitudes towards physical activity. The converse was also observed.

Parents' appraisal of their child's weight status was fairly realistic. Children whose parents perceived them as normal weight had a significantly lower average BMI than children whose parents perceived them as overweight. However, of those parents who misclassified their child's weight status, 48% incorrectly classified their overweight child as normal weight. On the other hand, parents were quite accurate at categorizing their own weight status, such that only two of 67 parents misclassified their weight status.

Parent's who attempted to influence their child's eating behaviors through food restriction or monitoring of food consumption were relatively unsuccessful in influencing

their child's BMI and healthy/unhealthy eating behaviors. On the other hand, children whose parents pressured them to eat had lower BMI's, which could be due to a) parents pressuring low BMI children to eat because they believed the children were too "thin" or did not eat enough, or b) parent pressure to eat causing the children to consume less food, thus resulting in low BMI's. Therefore, it is unclear if parental pressure to eat was an effective strategy for influencing child BMI.

With regard to physical activity, parents who attempted to control their child's physical activity level were successful in moderating the child's BMI if they engaged in physical activity with their child. Parents' that participated in physically active pursuits with their children had children with lower BMI's. However, simply encouraging activity or regulating sedentary activity did not alter the child's BMI. In addition, engaging in physical activity with the child, encouraging the child to be physically active, and regulating sedentary activity had no affect on the child's total energy expenditure.

Chapter 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study evaluated the contribution of parental factors related to eating behavior and physical activity level on the development of childhood obesity. Specifically, this research was conducted to further investigate the influence of parental attitudes on factors contributing to childhood obesity, as literature in this area is limited. The survey instrument was designed to assess parent and child eating behavior and physical activity, parental control of child eating behavior and physical activity, and parental attitudes toward their own and their child's weight status, eating behavior, and physical activity. Parents ($N = 127$) completed the 92 question survey for themselves and the target children participating in the study. Target children were between the ages of 7 and 11, and were second, third, or fourth graders from one of five elementary schools in Tompkins County in the state of New York. One hundred and twenty-seven of the 947 surveys distributed, 13%, were returned to the researcher and used in the data analysis.

Collectively, the relationship between direct measures of parent and child BMI and parent and child PAL was insignificant. However, when children were split into normal weight and overweight groups based on their percentile ranking of BMI for age and gender, there was a higher likelihood that overweight parents had overweight children (79%) and normal weight parents had normal weight children (70%).

Children of parents classified as having healthy eating behaviors ate more fruit, vegetables, and protein daily or more than once daily then children of parents classified as having unhealthy eating behaviors. In addition, children ate sweets at higher than

recommended levels independent of their parent's eating behavior classification as healthy or unhealthy. Likewise, child consumption of dairy, carbohydrates, and snack foods were found to be similar independent of parent eating behaviors. Furthermore, overweight parents had children who ate snack food more frequently at meals than children of normal weight parents. These findings suggested that children are to some extent modeling the healthy/unhealthy eating behaviors of their parent. However, child eating behaviors, whether "healthy" or "unhealthy" were not related to the child's BMI.

Parents had a "more negative" attitude toward their own and their child's eating behaviors when they were classified as "unhealthy", and had a "more positive" attitude towards their own and their child's eating behavior when they were classified as "healthy". Similarly, as parent attitude toward their physical activity was "more positive", total energy expenditure (kcal/day) was higher and vice versa. This suggested that parents may recognize the quality of their own and their child's eating behaviors and their own physical activity level. However, the relationship between parental attitude toward their child's physical activity and the child's actual energy expenditure (kcal/day) was not significant. Thus it appeared that parents had little sense of their child's physical activity level.

Overall, parents accurately assessed their own and their child's weight status as normal weight or overweight. Similarly, when parents were split into low BMI (BMI $\leq$ 22) and high BMI (BMI $\geq$ 26) groups, 65 out of 67 parents accurately assessed their weight status as normal weight or overweight; one normal weight parent classified their weight status as overweight and one overweight parent classified their weight status as normal weight. On the other hand, although most parents correctly classified their

children as normal weight or overweight, the majority of misclassifications included parents who perceived their overweight child as normal weight. Only one of the 72 normal weight children was misclassified as overweight, however 15 of the 31 overweight children were misclassified as normal weight. Thus, parents seemed to do a better job of classifying their own weight status than their child's.

Of the three variables used to assess parental control of eating (pressure, restriction, and monitoring) only pressure had a significant negative relationship with child BMI, and none correlated significantly with the child's eating behavior classification as healthy or unhealthy. Similarly, of the three variables used to assess parental control of physical activity (regulation of sedentary behavior, encouragement to be active, and engaging in physical activity with the child) only the parent's participation in physical activity with the child had a significant negative relationship with the child's BMI, and none had a correlated significantly with the child's total energy expenditure. This suggested that when parent pressure to eat and participation in physical activities were high, child BMI was low.

Concluding Remarks

This study revealed a disconnect between parent attitude toward their child's weight and physical activity level and the child's actual weight status and energy expenditure (kcal/day). Fifteen of the 31 (48%) overweight children were perceived as normal weight by their parents. This result supports the concern that not all parents perceive their child as overweight when they actually are overweight. In addition, parents did not appear to acknowledge or consider the association between their child's physical activity level and health benefits, as evidenced by the lack of relationship

between parent attitude toward their child's physical activity and the child's estimated energy expenditure (kcal/day). These data suggest that further research is needed to determine if parents have an adequate understanding of what constitutes a healthy body composition and physical activity level for their child. It may be beneficial to educate parents about healthy body composition and physical activity level for their child, in addition to the potential consequences of not maintaining their child's body composition and physical activity at healthy levels. Furthermore, future studies should seek to identify why parents of overweight children are not recognizing their child's overweight status, and whether or not they are concerned about this status. If they do find that parents of overweight children are unconcerned about their child's weight it would also be valuable to identify why they are unconcerned. Hopefully, gaining insight into parent attitudes and beliefs will assist professionals in determining how to educate parents and alter their views in a way that would promote a healthy body composition and physical activity level in their child.

Despite the disconnect between parent attitudes and their child's weight status and physical activity level, parents did appear to distinguish between their child's healthy or unhealthy eating behaviors. Parents of children who were healthy eaters had a "more positive" attitude toward their child's eating behaviors than parents of children who were unhealthy eaters. For parents of unhealthy eaters, this suggested that although they recognized that their child's eating behaviors were inadequate, their child continued to be an unhealthy eater. Therefore, future research needs to identify why parents allow their children to eat an unhealthy diet despite their apparent understanding of what constitutes a healthy diet. Furthermore, it may be advantageous to assess parent knowledge of child

nutrition and to educate them appropriately, making sure to identify the potential consequences of an unhealthy diet.

Based on the finding that 79% of overweight children had overweight parents and 70% of normal weight children had normal weight parents, this study suggested that parent modeling of weight influenced their child's weight. Parents need to be informed of this relationship, in addition to the negative health and social effects of being overweight, as they are likely to be modeling behaviors and attitudes that promote obesity and passing them along to their children.

This study also suggested that children are modeling some of the healthy and unhealthy eating behaviors of their parents. Children of parents who were healthy eaters ate more fruits, vegetables, and protein at recommended levels based on the food guide pyramid than children of parents who were unhealthy eaters. Thus, children whose parents were unhealthy eaters appeared to consume more of their daily calories in the form of dairy, protein, and carbohydrates, all of which tend to consist of more fat than fruits and vegetables. In addition, all children ate sweets at higher levels than recommended by the food guide pyramid, which suggested that parents were either unaware or unconcerned with the recommendations regarding sweets consumption. It appeared as though overweight parents were modeling the consumption of high fat foods, as evidenced by their children who consumed more snack foods such as potato chips, Doritos, and cheese puffs than children of normal weight parents. Lastly, the negative relationship that was found between parental pressure to eat and child BMI warrants further investigation because it is unclear if or what the cause and effect relationship was between these two variables.

Overall, parents need to be made aware of the significant effect that their eating behaviors may have on those of their children. It may be valuable to educate parents about proper nutrition for themselves and their child. Parents should also be educated about the possible side effects of pressuring their children to eat. Past studies indicate that increased pressure can damage the child's ability to regulate energy intake based on internal feelings of hunger or satiety, resulting in over consumption of food and increased body fatness (Birch et al., 1987; Birch & Fisher, 1995; Gable & Lutz, 2000; Johnson & Birch, 1994).

Although this study found that parent physical activity level did not appear to influence child physical activity level, results did indicate that parent participation in physical activity with their child resulted in a lower child BMI. Thus, children had higher BMI's if their parent did not participate in physical activities with them. This finding suggested that parents who currently did not exercise with their child should start, as parent participation in physical activity with their child promoted a healthy body composition in the child.

<u>Recommendations</u>

Further study on the factors contributing to childhood obesity would benefit from direct measurement of height and weight to obtain a more accurate representation of BMI. In addition, it would be useful for professionals in the field to standardize the percentile classification of child BMI as underweight, normal weight, overweight, and obese for comparison in future research. Using percentile cut points for BMI on the 2000 CDC growth charts accounts for differences due to age and gender during growth and maturation, and seems to be a reasonable means of standardization. Finally, although

research suggests that BMI is both a valid and reliable measure of body fatness in children, there is also support for using BMI values in combination with triceps and/or subscapular skinfold thicknesses because there are national reference data for these measures, and they are a more direct measure of body fatness than BMI (Bellizzi & Dietz, 1999; Dwyer et al., 2000).

Subjects often overestimate physical activity via self-report, thus using an accelerometer alone or in combination with self-report may prove a more accurate method of estimating total energy expenditure (Jebb & Moore, 1999; Sallis & Saelens, 2000). Although there is not a strong consensus that objective measures, such as accelerometers, are true criterion measures of physical activity, it is believed that they offer better information about the absolute amount of physical activity than self-report (Patterson, 2000; Sallis & Saelens, 2000). In turn, when used in combination with objective measures, self-report instruments can provide information about the context and type of physical activities (Sallis & Saelens, 2000). Likewise, subjects often under-report dietary intake via dietary logs. However, dietary logs have an advantage over the method of assessing eating behaviors that was used in the current study as they have the ability to offer information regarding caloric intake, when foods are eaten, and the actual nutrient composition of the food eaten (ex., percentage of calories from carbohydrates, protein, and fat) (Jebb & Moore, 1999). Although time consuming, it may also be advantageous to have informational sessions for subjects that specifically detail the importance of and how to accurately report physical activity and dietary intake. Overall, consensus on physical activity and eating behavior measurement tools and improvement

of the existing tools are needed to produce useful results that can be compared between studies.

Due to the lack of consensus on physical activity measurement tools and the difficulty of assessing physical activity in both adults and children, it may be advantageous to assess time spent in sedentary activities rather than attempting to obtain information about energy expenditure. Time spent in sedentary activities such as watching TV, playing video games, and computer use could then be related to body fatness in parents and children. In support of this suggestion, past studies have shown significant relationships between body fatness and sedentary activities, and have also reported a reduction in body fatness in children with a decrease in sedentary activities (Andersen et. al 1998; Robinson, 1999; Ross & Pate, 1987).

Lastly, not only do professionals need to educate parents on healthy body composition, eating behaviors, and physical activity levels for themselves and their children, more research is needed on parental attitudes toward factors associated with obesity, including weight status, eating behaviors, and physical activity. This research should simultaneously evaluate actual parent and child weight status, eating behavior, and physical activity level to be most useful. Once themes are identified between parental attitudes and actual parent and child characteristics, researchers should seek to identify ways to alter parental attitudes and behaviors that promote the achievement of healthy body composition, eating behaviors, and physical activity levels in parents and their children.

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Informed Consent Form

How Does Parental Eating Behavior and Physical Activity Level Influence Child Eating Behavior and Physical Activity Level?

1. Purpose of the Study:

The purpose of the study is to evaluate the relationship between parental eating behavior and physical activity level and child eating behavior and physical activity level.

2. Benefits of the Study:

To gain understanding about how eating behavior and physical activity level of the parents may or may not influence the eating behavior and physical activity level of their child.

3. Participation Requires:

You will complete a survey regarding eating behaviors and physical activity levels for you and your child, and return the survey to the researcher in the pre-addressed stamped envelope. Survey completion requires approximately 45 minutes.

4. Risks of Participation:

Completion of the survey may result in slight discomfort as a result of answering personal questions about yourself and your child.

5. If you would like more information about this study at any time before, during, or after completion of the survey, you may contact the project director, Jennifer Miner, at jminer1@ic3.ithaca.edu or 274-1301.

6. Withdrawal from the Study:

Your participation in the study is voluntary. You may choose not to answer any or all of the questions in the survey.

7. Confidentiality:

All data collected in this study will be coded to insure your confidentiality. In addition, your name will not appear in any reports from this study.

APPENDIX A (continued)

I have read the above and understand its contents. I agree to participate in this study. I acknowledge that I am 18 years of age or older.

_____

Print or Type Name

_____   _____

Signature   **Date**

May I contact you if I need clarification on your survey responses? Yes / No (circle one)

If yes, your phone number is _____

APPENDIX B

Dear Principal:

I am a graduate student in the Department of Exercise and Sport Sciences at Ithaca College working on my Master's thesis. The purpose of my study is to evaluate the contribution of parental factors related to eating behaviors and physical activity level, which influence the development of obesity in their child. I was inspired to do this project due to the increasing obesity levels in adults and children in the United States and research indicating that parental factors such as adiposity, physical activity level, eating behaviors, parental control, and parental attitudes and beliefs all affect the obesity risk of the child. In addition, I was alarmed that pediatricians are now finding children and adolescents who are already beginning to experience medical effects of their overweight condition, such as high blood pressure, high cholesterol, and type II diabetes. We also know that childhood and adolescent obesity may have significant negative psychosocial effects such as social isolation and discrimination, low self-esteem, negative self image, depression, and possibly delayed psychosocial development.

The growing incidence of obesity and its close association with chronic disease and adverse health outcomes presents an enormous challenge to our health care system, and has become a serious public health concern. Therefore, I decided to conduct this study to learn more about the family behavioral and environmental etiologies of obesity. I hope to uncover new information that may contribute to the prevention and treatment of childhood obesity focusing on parent education.

APPENDIX B (continued)

Attached is a final draft of the survey designed to collect information about parent and child characteristics related to eating behaviors and physical activity level. With the help of Tompkins County elementary schools, I intend to have the primary caretakers of children in 2nd, 3rd, and 4th grade classes complete the survey for themselves and the study child. This would require sending the surveys home via "backpack mail" to all parents/guardians of the elementary school's 2nd, 3rd, and 4th grade students, so the survey could be filled out at the parent's/guardian's convenience. Completion of the survey requires about 45 minutes, and if the parent/guardian has more than one child between 6 and 11 years old, they will be instructed to consider only one child as they respond to the questions in the survey. A pre-addressed stamped envelope will be included with the survey. Those who complete the survey will be entered into a raffle for a $100 gift certificate to Wegman's supermarket in appreciation of their time and effort. I assure you that all data collected will remain confidential, and that subject names will not be used in any reports from this study.

I've enclosed the survey, informed consent, and letter that will be sent to the parents for your review. You will notice that in these documents I identified the purpose of the study as an evaluation of the relationship between parent eating behavior and physical activity level and child eating behavior and physical activity level. This was done to prevent influencing the responses of the parent, and for the same reason, the word "obesity" was intentionally omitted from the title and purpose as well.

APPENDIX B (continued)

I would greatly appreciate your help in obtaining potential subjects for my research project, and would be happy to share the results of my study with you in the future. I will contact you next week to see if you are willing to distribute the surveys to parents via "backpack mail", of your 2nd, 3rd, and 4th graders. If so, please let me know how many surveys to prepare, and I will then deliver them to your school. If you would like to contact me before that time, please call (607) 274-1301 or e-mail me at jminer1@ic3.ithaca.edu. You may also contact my thesis advisor, Dr. Betsy Keller at keller@ithaca.edu or (607) 274-1683. Thank you for your time and consideration.

Sincerely,

Jennifer L. Miner
Graduate Student
Department of Exercise and Sport Sciences

Dear Parent/Guardian:

I am a graduate student in the Department of Exercise and Sport Sciences at Ithaca College working on my Master's thesis. The purpose of my study is to evaluate the relationship between parental eating behavior and physical activity level and child eating behavior and physical activity level. I received permission to distribute this survey from the principal of your child's elementary school, and I would be very appreciative if you would take the time to respond to the enclosed survey.

We are hoping to gain a better understanding about what affects a child's patterns of eating and physical activity. Completion of the survey requires about 45 minutes. If you have more than one child between 6 and 11 years old, please consider only one child as you respond to the questions in the survey.

Thank you for helping me with my research project. **In appreciation for your time and effort, your name will be entered into a raffle for a $100 gift certificate to Wegman's supermarket.**

Sincerely,

Jennifer Miner
Graduate Student
Department of Exercise and Sport Sciences

Complete and return this survey by *Friday, June 29th* and be entered into a raffle for a

$100 Gift Certificate

to Wegman's Supermarket!!
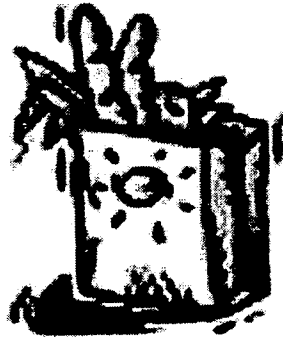
If you're interested please fill out your name, address, and phone number below, so we can get in touch with you if you're the lucky winner! Be sure to return this form with your completed survey.

_____
Name

_____
Street Address

_____
City, State, Zip Code

_____
Phone Number

How Does Parental Eating Behavior and Physical Activity Level Influence Child Eating Behavior and Physical Activity Level?

Guidelines for Completion of the Survey

The following survey contains statements and questions about eating behaviors and physical activity levels for you and your child, and should be completed by the parent who spends the most time with the child. If you have more than one child between the ages of 6 and 11 years, please answer the survey for only one child. If you have more than one child between 6 and 11 years and one child has orthopedic limitations, type I (juvenile) diabetes, type II (adult-onset) diabetes, or other physical or metabolic disorders which may alter or restrict the child's eating behaviors and physical activity level, then please consider the child who <u>does not</u> have any of these conditions. However, if all of your children between 6 and 11 years have one or more of these conditions, then please select one child to consider for completion of the survey, and complete the following item(s) for that child.

1) Does the child you are considering in your responses to this survey have any of the following conditions which may alter or restrict their eating behavior and/or physical activity level? Yes____ No____

    If yes, please circle all that apply.

    a) Orthopedic limitations (e.g. ankle, knee, or hip pain when walking or running)
    b) Type I (juvenile) diabetes
    c) Type II (adult-onset) diabetes
    d) Other physical or metabolic disorders _____

    If you circled b or c above please answer question 2.

2) _____ If your child has Type I or Type II diabetes, at what age was s/he diagnosed? (Enter age on line)

It is very important that you consider only yourself and one child as you respond to the survey. In addition, please fill out the survey as accurately and realistically as possible. Should you have any questions about completion of the survey please contact the project director, Jennifer Miner, at jminer1@ic3.ithaca.edu or (607) 274-1301.

Thank you, in advance, for your time and thoughtfulness.

Directions: This survey should be completed by the parent/guardian who spends the most time with the study child.

PARENTS: Items 1-10 require information about you.

1) Gender: Male _____ Female _____

2) Age: Years _____ Months _____

3) Race:
  a) African-American
  b) Native-American
  c) White-American
  d) Asian
  e) Hispanic
  f) Other _____

4) Last grade completed:
  a) Grade 11 or below
  b) Grade 12 or GED
  c) Post high school trade school
  d) Some college
  e) Bachelor's degree
  f) M.S. or equivalent
  g) M.D., PhD., or equivalent

5) Employment status:
  a) Employed full-time
  b) Employed part-time
  c) Home-maker, full-time
  d) Not employed
  e) Other, explain_____

6) Estimated gross family income (to the nearest thousand): _____

7) Marital status (with your child's other biological parent):
  a) Single
  b) Married
  c) Separated
  d) Divorced
  e) Widowed

APPENDIX F (continued)

8) Does your child live in two households? If so, what percent of the time does your child reside with you? If your child lives in one household, skip question 8.
        a) 25%
        b) 50%
        c) 75%

PARENTS: _Your_ Physical Characteristics

9) Weight (pounds) _____ (Don't estimate, please measure)

10) Height (feet/inches) _____ (Don't estimate, please measure standing with feet together)

PARENTS: Items 11-16 require information about _your child._

11) Gender: Male _____ Female _____

12) Age: Years _____ Months_____

13) Race:
        a) African-American
        b) Native-American
        c) White-American
        d) Asian
        e) Hispanic
        f) Other _____

14) Grade in school:
        a) 2nd
        b) 3rd
        c) 4th

PARENTS: _Your Child's_ Physical Characteristics

15) Weight (pounds): _____ (Don't estimate, please measure)

16) Height (feet/inches): _____ (Don't estimate, please measure standing with feet together)

APPENDIX F (continued)

PARENTS: Questions about *Your* Eating Behaviors

For questions 17-22, please think about your own typical eating patterns over the course of an average week as you determine your response. For example, consider the number of meals/snacks that you typically eat each week from vending machines, restaurants/drive thru fast food places, as well as home-prepared meals.

17) In a typical week I eat the following meals: (Circle the number which best corresponds to your diet)

Never	Rarely	Occasionally	Almost Daily	Daily	
1	2	3	4	5	a) Breakfast
1	2	3	4	5	b) Lunch
1	2	3	4	5	c) Dinner
1	2	3	4	5	d) Snack(s)

18) In a typical week I eat meals from the following food groups: (Circle the number which best corresponds to your diet)

Never	Rarely	Occasionally	Almost Daily	Daily	More Than Once Daily	
1	2	3	4	5	6	a) Fruit
1	2	3	4	5	6	b) Vegetables
1	2	3	4	5	6	c) Dairy (milk, cheese, yogurt)
1	2	3	4	5	6	d) Eggs, Beans, Nuts, Meat, Poultry
1	2	3	4	5	6	e) Bread, Rice, Pasta, Bagels
1	2	3	4	5	6	f) Sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)
1	2	3	4	5	6	g) Snack food (potato chips, Doritos, cheese puffs)
1	2	3	4	5	6	h) Diet drinks or bars (eg. "Slimfast")

19) _____ How many snacks do you typically eat **per day**? (Enter a number on the line)

20) On a **typical day**, what do you eat for snack(s) and how often do you eat those types of snacks? (Circle the number which best corresponds to those that apply)

Never	Rarely	Occasionally	Almost Daily	Daily	More Than Once Daily	
1	2	3	4	5	6	a) Fruit
1	2	3	4	5	6	b) Vegetables
1	2	3	4	5	6	c) Dairy (milk, cheese, yogurt)
1	2	3	4	5	6	d) Eggs, Beans, Nuts, Meat, Poultry
1	2	3	4	5	6	e) Bread, Rice, Pasta, Bagels
1	2	3	4	5	6	f) Sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)
1	2	3	4	5	6	g) Snack food (potato chips, Doritos, cheese puffs)
1	2	3	4	5	6	h) Diet drinks or bars (eg. "Slimfast")

21) Please indicate your opinion for question 21 using the rating scale below. (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	21) How often do you eat when you are not hungry?

If your answer is "never" please skip to question 23.

APPENDIX F (continued)

22) Why do you eat if you are not hungry? (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	a) Emotions (stress,depression, anger, upset, anxiety, boredom, etc.
1	2	3	4	5	b) Others are eating (parties, holidays, etc.)
1	2	3	4	5	c) It's time to eat (lunch hour,etc.)
1	2	3	4	5	d) A particular food looks/tastes good
1	2	3	4	5	e) To prevent hunger later on
1	2	3	4	5	f) Other (explain) _____

23-32) Please indicate your opinion for questions 23-32 using the rating scale below. (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	23) Do you think you eat too many *sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)*?
1	2	3	4	5	24) Do you think you eat too many high fat foods?
1	2	3	4	5	25) Do you think you eat too many junk foods?
1	2	3	4	5	26) Do you think you eat too many of your favorite foods?
1	2	3	4	5	27) Do you feel that you eat too many times per day?
1	2	3	4	5	28) Do you feel that you eat too few times per day?
1	2	3	4	5	29) In general, do you think that you eat too much food per day?
1	2	3	4	5	30) In general, do you think that you do not eat enough food per day?
1	2	3	4	5	31) On the whole, do you think that your eating behaviors are healthy?
1	2	3	4	5	32) On the whole, are you satisfied with your eating behaviors?

APPENDIX F (continued)

PARENTS: *Questions about Your Child's Eating Behaviors*

For questions 33 – 60, please think about your child's typical eating patterns over the course of an average week as you determine your response. For example, consider the number of meals/snacks that your child typically eats each week from vending machines, restaurants/drive thru fast food places, as well as home-prepared meals.

33) In a typical week my child eats the following meals: (Circle the number which best corresponds to your child's diet)

Never	Rarely	Occasionally	Almost Daily	Daily	
1	2	3	4	5	a) Breakfast
1	2	3	4	5	b) Lunch
1	2	3	4	5	c) Dinner
1	2	3	4	5	d) Snack(s)

34) In a typical week my child eats meals from the following food groups: (Circle the number which best corresponds to your child's diet)

Never	Rarely	Occasionally	Almost Daily	Daily	More Than Once Daily	
1	2	3	4	5	6	a) Fruit
1	2	3	4	5	6	b) Vegetables
1	2	3	4	5	6	c) Dairy (milk, cheese, yogurt)
1	2	3	4	5	6	d) Eggs, Beans, Nuts, Meat, Poultry
1	2	3	4	5	6	e) Bread, Rice, Pasta, Bagels
1	2	3	4	5	6	f) Sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)
1	2	3	4	5	6	g) Snack food (potato chips, Doritos, cheese puffs)
1	2	3	4	5	6	h) Diet drinks or bars (eg. "Slimfast")

35) _____How many snacks does your child typically eat **per day**? (Enter a number on the line)

36) On a **typical day**, what does your child eat for snack(s) and how often does your child eat those types of snacks? (Circle the number which best corresponds to those that apply)

Never	Rarely	Occasionally	Almost Daily	Daily	More Than Once Daily	
1	2	3	4	5	6	a) Fruit
1	2	3	4	5	6	b) Vegetables
1	2	3	4	5	6	c) Dairy (milk, cheese, yogurt)
1	2	3	4	5	6	d) Eggs, Beans, Nuts, Meat, Poultry
1	2	3	4	5	6	e) Bread, Rice, Pasta, Bagels
1	2	3	4	5	6	f) Sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)
1	2	3	4	5	6	g) Snack food (potato chips, Doritos, cheese puffs)
1	2	3	4	5	6	h) Diet drinks or bars (eg. "Slimfast")

APPENDIX F (continued)

37-47) Please indicate whether you agree or disagree with statements 37-47 using the rating scale below. (Circle the number which best corresponds to your opinion)

Disagree	Slightly disagree	Neutral	Slightly agree	Agree	
1	2	3	4	5	37) I have to be sure that my child does not eat too many sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks).
1	2	3	4	5	38) I have to be sure that my child does not eat too many high fat foods.
1	2	3	4	5	39) I have to be sure that my child does not eat too much of his/her favorite foods.
1	2	3	4	5	40) I intentionally keep some foods out of my child's reach.
1	2	3	4	5	41) I offer sweets (candy, cookies, ice cream, pastries, soda or other sweetened drinks) to my child as a reward for good behavior.
1	2	3	4	5	42) If I did not guide or regulate my child's eating, (s)he would eat too many junk foods.
1	2	3	4	5	43) If I did not regulate my child's eating, (s)he would eat too much of his/her favorite foods.
1	2	3	4	5	44) My child should always eat all of the food on his/her plate.
1	2	3	4	5	45) I have to be especially careful that my child eats enough.
1	2	3	4	5	46) If my child says "I'm not hungry," I try to get him/her to eat anyway.
1	2	3	4	5	47) If I did not guide or regulate my child's eating (s)he would eat much less than (s)he should.

48-50) Please indicate your opinion for questions 48-50 using the rating scale below. (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	48) How much do you keep track of the *sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)* your child eats?
1	2	3	4	5	49) How much do you keep track of the *snack food (potato chips, Doritos, cheese puff* that your child eats?
1	2	3	4	5	50) How much do you keep track of the *high fat* foods that your child eats?

APPENDIX F (continued)

51-60) Please indicate your opinion for questions 51-60 using the rating scale below. (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	51) Do you think your child eats too many *sweets (candy, cookies, ice cream, pastries, soda or other sweetened or artificially sweetened drinks)* ?
1	2	3	4	5	52) Do you think your child eats too many high fat foods?
1	2	3	4	5	53) Do you think your child eats too many junk foods?
1	2	3	4	5	54) Do you think your child eats too many of his/her favorite foods?
1	2	3	4	5	55) Do you feel that your child eats too many times per day?
1	2	3	4	5	56) Do you feel that your child eats too few times per day?
1	2	3	4	5	57) In general, do you think that your child eats too much food per day?
1	2	3	4	5	58) In general, do you think that your child does not eat enough food per day?
1	2	3	4	5	59) On the whole, do you think that your child's eating behaviors are healthy?
1	2	3	4	5	60) On the whole, are you satisfied with your child's eating behaviors?

PARENTS: Questions about *Your* Physical Activity Level

Now we would like to know about your own physical activity level during the past 7 days.

61) Do you have any physical limitations/disabilities that influence your level of physical activity? If yes, please describe: _____

Please answer questions 62 and 63 about your own sleeping habits.

62) On average, how many hours did you sleep each night during the last 5 weekday nights (Sunday – Thursday)? (Write the amount of time to the nearest 15 minutes in the box)

63) On average, how many hours did you sleep last Friday and Saturday nights? (Write the amount of time to the nearest 15 minutes in the box)

Please answer questions 64-70 about your own physical activity during the past 7 days: that is the last 5 weekdays and last weekend, Saturday and Sunday. Do not include light activities, such as slow walking, light housework, or non-strenuous sports such as bowling, archery, or softball. Please look at the list on the following page, which shows some examples of what we consider moderate, hard, and very hard activities. People engage in many other types of activities, so if your activity is not listed please try to fit it in the category which seems appropriate based on the examples given.

64) First, consider moderate activities. How many total hours (sum the hours for each of the 5 days) did you spend during the last 5 weekdays doing these activities or others like them. (Write the amount of time to the nearest half-hour in the box)

65) Last Saturday and Sunday, how many total hours did you spend in these moderate activities or others like them. (Write the amount of time to the nearest half-hour in the box)

66) Now, consider hard activities. How many total hours did you spend during the last 5 weekdays doing these hard activities or others like them? (Write the amount of time to the nearest half-hour in the box)

67) Last Saturday and Sunday, how many total hours did you spend in these hard activities or others like them. (Write the amount of time to the nearest half-hour in the box)

APPENDIX F (continued)

☐ 68) Now, consider very hard activities. How many total hours did you spend during the last 5 weekdays doing these very hard activities or others like them? (Write the amount of time to the nearest half-hour in the box)

☐ 69) Last Saturday and Sunday, how many total hours did you spend in these very hard activities or others like them. (Write the amount of time to the nearest half-hour in the box)

☐ 70) Compared to your physical activity over the past 3 months, was last week's physical activity more, less, or about the same? (Write more = 1, less = 2, or same = 3 in the box)

APPENDIX F (continued)

Moderate Activities

Occupational Tasks
Delivering mail or patrolling on foot
House painting
Truck driving (making deliveries – lifting and carrying light objects)

Household Activities
Raking lawn
Sweeping and mopping
Mowing the lawn with a power mower
Cleaning windows

Sports Activities (actual playing time):
Volleyball
Ping pong
Brisk walking for pleasure or to work (3 mph or 20 min/mile)
Golf-walking and pulling or carrying clubs
Calisthenic exercises

Hard Activities

Occupational Tasks
Heavy carpentry
Construction work-doing physical labor

Household Tasks
Scrubbing floors

Sports Activities (consider only actual playing time):
Doubles tennis
Disco, Square, or Folk dancing

Very Hard Activities

Occupational Tasks
Very hard physical labor-digging or chapping with heavy tools
Carrying heavy loads, such as bricks or lumbar

Sports Activities (consider only actual playing time):
Jogging or swimming
Singles tennis
Racquetball
Soccer

APPENDIX F (continued)

For questions 71-74 please think about your own typical physical activity level as you determine your response.

71-72) Please answer questions 71-72 about your own TV, video game, and computer use. (Circle the number which best corresponds to the number of hours you spend in each activity)

None	1 Hour or Less	2 Hours	3 Hours	4 Hours	5 Hours	6 Hours or More	
1	2	3	4	5	6	7	71) During non-work hours on a typical weekday (Monday - Friday), how ma hours on average, do you watch TV, play video games, and use the computer?
1	2	3	4	5	6	7	72) During non-work hours on a typical Saturday - Sunday, how many hours average, do you watch TV, play video games, and use the computer?

73-74) Please indicate your opinion for questions 73-74 using the rating scale below. (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	73) In general, do you think you get enough physical activity to stay healthy?
1	2	3	4	5	74) Overall, are you satisfied with your physical activity level?

APPENDIX F (continued)

PARENTS: Questions about _Your Child's_ Physical Activity Level

Now we would like to know about your child's physical activity level during the past 7 days.

Please answer questions 75 and 76 about your child's sleeping habits.

75) On average, how many hours did your child sleep each night during the last 5 weekday nights (Sunday – Thursday)? (Write the amount of time to the nearest 15 minutes in the box)

76) On average, how many hours did your child sleep last Friday and Saturday nights? (Write the amount of time to the nearest 15 minutes in the box)

Please answer questions 77-83 about your child's physical activity during the past 7 days: that is the last 5 weekdays and last weekend, Saturday and Sunday. Do not include light activities, such as slow walking and light indoor play activities, or non-strenuous sports such as softball. Please look at the list on the following page, which shows some examples of what we consider moderate, hard, and very hard activities. Children engage in many other types of activities, so if your child's activity is not listed please try to place it in the category which seems appropriate based on the examples given.

77) First, consider your child's moderate activities. How many total hours (sum the hours for each of the 5 days) did your child spend during the last 5 weekdays doing these activities or others like them. (Write the amount of time to the nearest half-hour in the box)

78) Last Saturday and Sunday, how many total hours did your child spend in these moderate activities or others like them. (Write the amount of time to the nearest half-hour in the box)

79) Now consider your child's hard activities. How many total hours did your child spend during the last 5 weekdays doing these hard activities or others like them? (Write the amount of time to the nearest half-hour in the box)

80) Last Saturday and Sunday, how many total hours did your child spend in these hard activities or others like them. (Write the amount of time to the nearest half-hour in the box)

81) Now consider your child's very hard activities. How many total hours did your child spend during the last 5 weekdays doing these very hard activities or others like them? (Write the amount of time to the nearest half-hour in the box)

APPENDIX F (continued)

[ ] 82) Last Saturday and Sunday, how many <u>total</u> hours did your child spend in these very hard activities or others like them. (Write the amount of time to the nearest half-hour in the box)

[ ] 83) Compared to your child's physical activity over the past 3 months, was last week's physical activity more, less, or about the same? (Write more = 1, less = 2, or same = 3 in the box)

APPENDIX F (continued)

Moderate Activities

Play/Sport Activities (estimate only actual playing time):
Play ground apparatus
Dodgeball
Hopscotch
T-ball/tetherball
Hide and go seek
Skateboarding/scooter
Gymnastics
Volleyball
Hiking/exploring
Leisurely swimming/pool activities
Leisurely biking
Shooting hoops

Hard Activities

Play/Sport Activities (estimate only actual playing time):
Kickball
Roller-blading/ice skating
Ballet/modern dancing
Tag
Sledding
Light biking

Very Hard Activities

Play/Sport Activities (estimate only actual playing time):
Jogging
Moderate to vigorous swimming
Moderate to vigorous biking
Jump roping
Soccer
Ice/Field hockey

APPENDIX F (continued)

For questions 84-90 please think about your child's typical physical activity level as you determine your response.

84-85) Please answer questions 84-85 about your child's TV, video game, and computer use. (Circle the number which best corresponds to the number of hours your child spends in each activity)

None	1 Hour or Less	2 Hours	3 Hours	4 Hours	5 Hours	6 Hours or More	
1	2	3	4	5	6	7	84) During non-school hours on a typical weekday (Monday - Friday), how many hours on average, does your child watch TV, play video games, a use the computer?
1	2	3	4	5	6	7	85) During non-school hours on a typical Saturday - Sunday how many hour on average, does your child watch TV, play video games, and use the computer?

86-90) Please indicate your opinion for questions 86-90 using the rating scale below. (Circle the number which best corresponds to your opinion)

Never	Rarely	Sometimes	Mostly	Always	
1	2	3	4	5	86) Do you regulate the amount of time your child watches TV, plays video games, or uses the computer?
1	2	3	4	5	87) Do you encourage your child to be physically active?
1	2	3	4	5	88) Do you engage in physical activities such as hiking, biking, or swimming with your child?
1	2	3	4	5	89) In general, do you think your child is getting enough physical activity to stay healthy?
1	2	3	4	5	90) Overall, are you satisfied with your child's physical activity level?

APPENDIX F (continued)

PARENTS: Questions about the Current Weight of You and Your Child

91-92) Please indicate your opinion for questions 91-92 using the rating scale below. (Circle the number which best corresponds to your opinion)

Markedly Underweight	Underweight	Normal Weight	Overweight	Markedly Overweight	
1	2	3	4	5	91) How would you classify your current weight?
1	2	3	4	5	92) How would you classify your child's current weight?

Thank you for your time and effort in completing this survey!

Codebook Raw Scores

Id   ID number for questionnaire

q1-conditions   Child medical conditions that may alter or restrict
                                         eating behavior or physical activity level
                                         1 = Yes
                                         0 = No

q1a-ortho   Orthopedic limitations (e.g. ankle, knee, or hip pain
                                         when walking or running)
                                         1 = Yes
                                         0 = No

q1b-typeI   Type I (juvenile) diabetes
                                         1 = Yes
                                         0 = No

q1c-typeII   Type II (adult-onset) diabetes
                                         1 = Yes
                                         0 = No

q1d-other text   Other physical or metabolic disorders text

q2-year diagnosed   Age in years that child was diagnosed with Type I
                                         or II diabetes

p1-gender   Parent gender
                                         1 = Male
                                         2 = Female

p2a-pyears   Parent age in years

p2b-pmonths   Parent number of months past current year age (e.g.
                                         25 years and 2 months)

p3-prace   Parent race
                                         1 = African American
                                         2 = Native American
                                         3 = White American
                                         4 = Asian
                                         5 = Hispanic
                                         6 = Other

APPENDIX G (continued)

p3a-prace other	Parent race other text

p4-pgrade   Parent last grade completed
1 = Grade 11 or below
2 = Grade 12 or GED
3 = Post high school trade school
4 = Some college
5 = Bachelor's degree
6 = M.S. or equivalent
7 = M.D., PhD., or equivalent

p5-employment   Parent employment status
1 = Employed full-time
2 = Employed part-time
3 = Home-maker, full-time
4 = Not employed
5 = Other

p5a-employment other   Parent other employment status

p6-income   Estimated gross family income (to the nearest thousand)

p7-marital status   Marital status with child's other biological parent
1 = Single
2 = Married
3 = Separated
4 = Divorced
5 = Widowed

p8-live in household   Percent of time child resides in study parent's household
1 = 25%
2 = 50%
3 = 75%
4 = 100%

p9-pweight (lbs.)   Parent weight in pounds

p10-pheight (in.)   Parent height in inches

c11-cgender   Child gender
1 = Male
2 = Female

APPENDIX G (continued)

c12a-cyears   Child age in years

c12b-cmonths   Child number of months past current year age (e.g. 8 years and 2 months)

c13-crace   Child race
                                1 = African American
                                2 = Native American
                                3 = White American
                                4 = Asian
                                5 = Hispanic
                                6 = Other

p13a-crace other   Child race other text

p14-grade   Child grade in school
                                1 = 2nd grade
                                2 = 3rd grade
                                3 = 4th grade

p15-cweight (lbs.)   Child weight in pounds

p16-cheight (in.)   Child height in inches

p17a-pbreakfast   Parent breakfast frequency in typical week
                                1 = Never
                                2 = Rarely
                                3 = Occasionally
                                4 = Almost daily
                                5 = Daily

p17b-plunch   Parent lunch frequency in typical week
                                1 = Never
                                2 = Rarely
                                3 = Occasionally
                                4 = Almost daily
                                5 = Daily

p17c-pdinner   Parent dinner frequency in typical week
                                1 = Never
                                2 = Rarely
                                3 = Occasionally
                                4 = Almost daily
                                5 = Daily

APPENDIX G (continued)

p17d-psnacks

Parent snack frequency in typical week
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily

p18a-pmeals fruit

Parent typical consumption of fruit at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p18b-pmeals veggies

Parent typical consumption of vegetables at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p18c-pmeals dairy

Parent typical consumption of dairy at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p18d-pmeals protein

Parent typical consumption of protein at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

APPENDIX G (continued)

p18e-pmeals carbos

Parent typical consumption of carbohydrates at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p18f-pmeals sweets

Parent typical consumption of sweets at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p18g-pmeals snacks

Parent typical consumption of snack food at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p18h-pmeals diet food

Parent typical consumption of diet food at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p19-psnacks eat

Parent number of snacks eaten per day

p20a-psnacks fruit

Parent typical consumption of fruit for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

APPENDIX G (continued)

p20b-pmeals veggies

Parent typical consumption of vegetables for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p20c-psnacks dairy

Parent typical consumption of dairy for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p20d-psnacks protein

Parent typical consumption of protein for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p20e-psnacks carbos

Parent typical consumption of carbohydrates for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p20f-psnacks sweets

Parent typical consumption of sweets for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

APPENDIX G (continued)

p20g-psnacks snacks

Parent typical consumption of snack food for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p20h-psnacks diet food

Parent typical consumption of diet food for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p21- peat not hungry

Frequency parent eats when not hungry
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p22a-penh emotions

Parent eats when not hungry due to emotions
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p22b-penh others eating

Parent eats when not hungry due to others eating
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p22c-penh time to eat

Parent eats when not hungry because it's time to eat
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

p22d-penh looks/taste

Parent eats when not hungry because food looks/tastes good
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p22e-penh prevent hunger

Parent eats when not hungry to prevent hunger later on
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p22f-penh other

Parent eats when not hungry due to other reasons
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p22g-penh other text

Parent eats when not hungry due to other reasons text

p23-ptoo many sweets

Parent thinks they eat too many sweets
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p24-ptoo many high fat

Parent thinks they eat too many high fat foods
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

p25-ptoo many junk

Parent thinks they eat too many junk foods
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p26-ptoo many favorites

Parent thinks they eat too many of their favorite foods
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p27-ptoo many times

Parent thinks they eat too many times per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p28-ptoo few times

Parent thinks they eat too few times per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p29-ptoo much food

Parent thinks they eat too much food per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p30-penough food

Parent thinks they do not eat enough food per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

p31-pebehaviors healthy

Parent thinks their eating behaviors are healthy
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p32-pebehaviors satisfied

Parent is satisfied with their eating behaviors
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c33a-cbreakfast

Child breakfast frequency in typical week
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily

c33b-clunch

Child lunch frequency in typical week
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily

c33c-cdinner

Child dinner frequency in typical week
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily

c33d-csnacks

Child snack frequency in typical week
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily

APPENDIX G (continued)

c34a-cmeals fruit   Child typical consumption of fruit at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c34b-cmeals veggies   Child typical consumption of vegetables at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c34c-cmeals dairy   Child typical consumption of dairy at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c34d-cmeals protein   Child typical consumption of protein at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c34e-cmeals carbos   Child typical consumption of carbohydrates at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

APPENDIX G (continued)

c34f-pmeals sweets   Child typical consumption of sweets at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c34g-pmeals snacks   Child typical consumption of snack food at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c34h-pmeals diet food   Child typical consumption of diet food at meals
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

p35-csnacks eat   Child number of snacks eaten per day

c36a-csnacks fruit   Child typical consumption of fruit for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c36b-cmeals veggies   Child typical consumption of vegetables for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

APPENDIX G (continued)

c36c-csnacks dairy

Child typical consumption of dairy for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c36d-csnacks protein

Child typical consumption of protein for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c36e-csnacks carbos

Child typical consumption of carbohydrates for
snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c36f-csnacks sweets

Child typical consumption of sweets for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

c36g-csnacks snacks

Child typical consumption of snack food for snacks
1 = Never
2 = Rarely
3 = Occasionally
4 = Almost daily
5 = Daily
6 = More than once daily

APPENDIX G (continued)

c36h-psnacks diet food   Child typical consumption of diet food for snacks
                                              1 = Never
                                              2 = Rarely
                                              3 = Occasionally
                                              4 = Almost daily
                                              5 = Daily
                                              6 = More than once daily

c37-restriction37   Parent restricts child sweets consumption
                                              1 = Disagree
                                              2 = Slightly disagree
                                              3 = Neutral
                                              4 = Slightly agree
                                              5 = Agree

c38-restriction38   Parent restricts child high fat food consumption
                                              1 = Disagree
                                              2 = Slightly disagree
                                              3 = Neutral
                                              4 = Slightly agree
                                              5 = Agree

c39-restriction39   Parent restricts child favorite food consumption
                                              1 = Disagree
                                              2 = Slightly disagree
                                              3 = Neutral
                                              4 = Slightly agree
                                              5 = Agree

c40-restriction40   Parent keeps some foods out of child's reach
                                              1 = Disagree
                                              2 = Slightly disagree
                                              3 = Neutral
                                              4 = Slightly agree
                                              5 = Agree

c41-restriction41   Parent offers sweets as a reward for good behavior
                                              1 = Disagree
                                              2 = Slightly disagree
                                              3 = Neutral
                                              4 = Slightly agree
                                              5 = Agree

APPENDIX G (continued)

c42-restriction42

Child would eat too many junk foods if parent did
not guide or regulate
1 = Disagree
2 = Slightly disagree
3 = Neutral
4 = Slightly agree
5 = Agree

c43-restriction43

Child would eat too many of their favorite foods if
parent did not guide or regulate
1 = Disagree
2 = Slightly disagree
3 = Neutral
4 = Slightly agree
5 = Agree

c44-pressure44

Child should always eat all food on their plate
1 = Disagree
2 = Slightly disagree
3 = Neutral
4 = Slightly agree
5 = Agree

c45-pressure45

Parent has to be especially careful that child eats
enough
1 = Disagree
2 = Slightly disagree
3 = Neutral
4 = Slightly agree
5 = Agree

c46-pressure46

If child says their not hungry, parent tries to get
them to eat anyway
1 = Disagree
2 = Slightly disagree
3 = Neutral
4 = Slightly agree
5 = Agree

APPENDIX G (continued)

c47-pressure47

Child would eat much less than should if parent did
not guide or regulate
1 = Disagree
2 = Slightly disagree
3 = Neutral
4 = Slightly agree
5 = Agree

c48-monitoring48

Parent keeps track of child sweets consumption
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c49-monitoring49

Parent keeps track of child snack food consumption
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c50-monitoring50

Parent keeps track of child high fat food
consumption
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c51-ctoo many sweets

Parent thinks child eats too many sweets
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c52-ctoo many high fat

Parent thinks child eats too many high fat foods
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

c53-ctoo many junk

Parent thinks child eats too many junk foods
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c54-ctoo many favorites

Parent thinks child eats too many of their favorite foods
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c55-ctoo many times

Parent thinks child eats too many times per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c56-ctoo few times

Parent thinks child eats too few times per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c57-ctoo much food

Parent thinks child eats too much food per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c58-cenough food

Parent thinks child does not eat enough food per day
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

c59-cebehaviors healthy

Parent thinks child's eating behaviors are healthy
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c60-cebehaviors satisfied

Parent is satisfied with child's eating behaviors
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p61-pphysical limitations

Parent has physical limitations/disabilities that influence their level of physical activity
1 = Yes
2 = No

p61a-limitations text

Parent physical limitations/disabilities text

p62-psleep weekday

Parent hours (to the nearest 15 minutes) slept each night during the last 5 weekday nights (Sunday – Thursday)

p63-psleep weekend

Parent hours (to the nearest 15 minutes) slept last Friday and Saturday night

p64-pmod act weekday

Parent total hours spent in moderate activities (to the nearest half hour) during the last 5 weekdays

p65-pmod act weekend

Parent total hours spent in moderate activities (to the nearest half hour) last Saturday and Sunday

p66-phard act weekday

Parent total hours spent in hard activities (to the nearest half hour) during the last 5 weekdays

p67-phard act weekend

Parent total hours spent in hard activities (to the nearest half hour) last Saturday and Sunday

p68-pvery hard act weekday

Parent total hours spent in very hard activities (to the nearest half hour) during the last 5 weekdays

APPENDIX G (continued)

p69-pvery hard act weekend

Parent total hours spent in very hard activities (to the nearest half hour) last Saturday and Sunday

p70-pact comparison

Compared to parent physical activity over the past 3 months, was last weeks physical activity more, less, or the same.
1 = more
2 = less
3 = same

p71-ptvweekday

Parent average number of non-work hours spent watching TV, playing video games, and using the computer on a typical weekday (Monday – Friday)
1 = None
2 = 1 Hour or less
3 = 2 Hours
4 = 3 Hours
5 = 4 Hours
6 = 5 Hours
7 = 6 Hours or more

p72-ptvweekend

Parent average number of non-work hours spent watching TV, playing video games, and using the computer on a typical Saturday-Sunday
1 = None
2 = 1 Hour or less
3 = 2 Hours
4 = 3 Hours
5 = 4 Hours
6 = 5 Hours
7 = 6 Hours or more

p73-penough pa

Parent thinks they get enough physical activity to stay healthy
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

p74-psatsified pa

Parent is satisfied with their physical activity level
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c75-csleep weekday

Child hours (to the nearest 15 minutes) slept each night during the last 5 weekday nights (Sunday – Thursday)

c76-csleep weekend

Child hours (to the nearest 15 minutes) slept last Friday and Saturday night

c77-cmod act weekday

Child total hours spent in moderate activities (to the nearest half hour) during the last 5 weekdays

c78-cmod act weekend

Child total hours spent in moderate activities (to the nearest half hour) last Saturday and Sunday

c79-chard act weekday

Child total hours spent in hard activities (to the nearest half hour) during the last 5 weekdays

c80-chard act weekend

Child total hours spent in hard activities (to the nearest half hour) last Saturday and Sunday

c81-cvery hard act weekday

Child total hours spent in very hard activities (to the nearest half hour) during the last 5 weekdays

c82-cvery hard act weekend

Child total hours spent in very hard activities (to the nearest half hour) last Saturday and Sunday

c83-cact comparison

Compared to child physical activity over the past 3 months, was last weeks physical activity more, less, or the same.
1 = more
2 = less
3 = same

APPENDIX G (continued)

c84-ctvweekday

Child average number of non-school hours spent watching TV, playing video games, and using the computer on a typical weekday (Monday – Friday)
1 = None
2 = 1 Hour or less
3 = 2 Hours
4 = 3 Hours
5 = 4 Hours
6 = 5 Hours
7 = 6 Hours or more

c85-ctvweekend

Child average number of non-school hours spent watching TV, playing video games, and using the computer on a typical Saturday-Sunday
1 = None
2 = 1 Hour or less
3 = 2 Hours
4 = 3 Hours
5 = 4 Hours
6 = 5 Hours
7 = 6 Hours or more

c86-cregulate sedentary act

Parent regulates the amount of time child watches TV, plays video games, or uses the computer
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c87-cencourage pa

Parent encourages child to be physically active
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c88-cact w/ child

Parent engages in physical activity with child
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

APPENDIX G (continued)

c89-cenough pa

Parent thinks child gets enough physical activity to stay healthy
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

c90-csatsified pa

Parent is satisfied with their child's physical activity level
1 = Never
2 = Rarely
3 = Sometimes
4 = Mostly
5 = Always

p91-pclassify current weight

Parent classification of their own weight
1 = Markedly underweight
2 = Underweight
3 = Normal weight
4 = Overweight
5 = Markedly overweight

c92-cclassify current weight

Parent classification of their child's weight
1 = Markedly underweight
2 = Underweight
3 = Normal weight
4 = Overweight
5 = Markedly overweight

APPENDIX G (continued)

Codebook Transformed Scores

pBMI

Parent BMI (kg/m^2)
Computational Formula: (p9 (lbs.)/2.2) / (p10 (in.) * $.0254)^2$

cBMI

Child BMI (kg/m^2)
Computational Formula: (c15 (lbs.)/2.2) / (c16 (in.) * $.0254)^2$

cdc

Child BMI status as normal weight or overweight based on the 2000 CDC growth charts
1 = Normal weight
2 = Overweight
Computational Formula:
Normal weight females (1) - age $6 \leq 16.4$; age $7 \leq 16.7$; age $8 \leq 17.3$; age $9 \leq 17.9$; age $10 \leq 18.7$; and age $11 \leq 19.4$
Normal weight males (1) - age $6 \leq 16.3$; age $7 \leq 16.6$; age $8 \leq 17.0$; age $9 \leq 17.5$; age $10 \leq 18.2$; and age $11 \leq 18.9$
Overweight females (2) - age $6 \geq 17.1$; age $7 \geq 17.6$; age $8 \geq 18.3$; age $9 \geq 19.1$; age $10 \geq 20$; and age $11 \geq 20.8$
Overweight males (2) - age $6 \geq 17.0$; age $7 \geq 17.4$; age $8 \geq 17.9$; age $9 \geq 18.6$; age $10 \geq 19.4$; and age $11 \geq 20.2$

p23T-ptoo many sweets

Parent thinks they eat too many sweets
Computational Formula:
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

p24T-ptoo many high fat

Parent thinks they eat too many high fat foods
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

APPENDIX G (continued)

p25T-ptoo many junk

Parent thinks they eat too many junk foods
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

p26T-ptoo many favorites

Parent thinks they eat too many of their favorite foods
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

p27T-ptoo many times

Parent thinks they eat too many times per day
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

p28T-ptoo few times

Parent thinks they eat too few times per day
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

p29T-ptoo much food

Parent thinks they eat too much food per day
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

p30T-penough food

Parent thinks they do not eat enough food per day
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

APPENDIX G (continued)

c51T-ctoo many sweets

Parent thinks child eats too many sweets
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

c52T-ctoo many high fat

Parent thinks child eats too many high fat foods
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

c53T-ctoo many junk

Parent thinks child eats too many junk foods
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

c54T-ctoo many favorites

Parent thinks child eats too many of their favorite foods
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

c55T-ctoo many times

Parent thinks child eats too many times per day
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

c56T-ctoo few times

Parent thinks child eats too few times per day
1 = Always
2 = Mostly
3 = Sometimes
4 = Rarely
5 = Never

APPENDIX G (continued)

c57T-ctoo much food	Parent thinks child eats too much food per day 1 = Always 2 = Mostly 3 = Sometimes 4 = Rarely 5 = Never
c58T-cenough food	Parent thinks child does not eat enough food per day 1 = Always 2 = Mostly 3 = Sometimes 4 = Rarely 5 = Never
psumattitudeeb	Parent attitude toward their own eating behavior Computational Formula: (p23T + p24T + p25T +p26T + p27T + p28T + p29T + p30T + p31 + p32)
csumattitudeeb	Parent attitude toward their child's eating behavior Computational Formula: (c51T + c52T + c53T + c54T + c55T + c56T + c57T + c58T + c59 + c60)
psleep7	Parent average hours spent in sleep per day Computational Formula: ((p62 * 5) + (p63 * 2))/ 7
psleep kcal	Parent estimated energy expenditure (kcal) per day spent in sleep Computational Formula: (psleep7 * 1 MET)
pmod7	Parent average hours spent in moderate activities per day Computational Formula: (p64 + p65)/ 7
pmod kcal	Parent estimated energy expenditure (kcal) per day spent in moderate activities Computational Formula: (pmod7 * 4 MET)
phard7	Parent average hours spent in hard activities per day Computational Formula: (p66 + p67)/ 7
phard kcal	Parent estimated energy expenditure (kcal) per day spent in hard activities Computational Formula: (phard7 * 6 MET)

APPENDIX G (continued)

pvhard7 Parent average hours spent in very hard activities per day
Computational Formula: (p68 + p69)/ 7

pvhard kcal Parent estimated energy expenditure (kcal) per day spent in very hard activities
Computational Formula: (pvhard7 * 10 MET)

plight7 Parent average hours spent in light activities per day
Computational Formula: (24 – pmod7 – phard7 – pvhard7 – psleep7)

plight kcal Parent estimated energy expenditure (kcal) per day spent in light activities
Computational Formula: (plight7 * 1.5 MET)

pact kcal Parent total kcal/kg/day
Computational Formula: (psleep kcal + plight kcal + pmod kcal + phard kcal + pvhard kcal)

ptotal kcal Parent total kcal/day
Computational Formula: ((ptotal kcal * (p9 (lbs.)/2.2))

csleep7 Child average hours spent in sleep per day
Computational Formula: ((c75 * 5) + (c76 * 2))/ 7

csleep kcal Child estimated energy expenditure (kcal) per day spent in sleep
Computational Formula: (csleep7 * 1 MET)

cmod7 Child average hours spent in moderate activities per day
Computational Formula: (c77 + c78)/ 7

cmod kcal Child estimated energy expenditure (kcal) per day spent in moderate activities
Computational Formula: (cmod7 * 4 MET)

chard7 Child average hours spent in hard activities per day
Computational Formula: (c79 + p80)/ 7

APPENDIX G (continued)

chard kcal

Child estimated energy expenditure (kcal) per day spent in hard activities
Computational Formula: (chard7 * 6 MET)

cvhard7

Child average hours spent in very hard activities per day
Computational Formula: (c81 + c82)/ 7

cvhard kcal

Child estimated energy expenditure (kcal) per day spent in very hard activities
Computational Formula: (cvhard7 * 10 MET)

clight7

Child average hours spent in light activities per day
Computational Formula: (24 – cmod7 – chard7 – cvhard7 – csleep7)

clight kcal

Child estimated energy expenditure (kcal) per day spent in light activities
Computational Formula: (clight7 * 1.5 MET)

cact kcal

Child total kcal/kg/day
Computational Formula: (csleep kcal + clight kcal + cmod kcal + chard kcal + cvhard kcal)

ctotal kcal

Child total kcal/day
Computational Formula: ((ptotal kcal * (c15 (lbs.)/2.2))

c34a1-cfruit chi-square

Child fruit consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

c34b1-cveggies chi-square

Child vegetable consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

APPENDIX G (continued)

c34c1-cdairy chi-square

Child dairy consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

c34d1-cprotein chi-square

Child protein consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

c34e1-ccarbos chi-square

Child carbohydrate consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

c34f1-csweets chi-square

Child sweets consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

c34g1-csnacks chi-square

Child snacks consumption 1st groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally and almost daily
Group 3 = daily and more than once daily

c34a2-cfruit chi-square

Child fruit consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

c34b2-cveggies chi-square

Child vegetable consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

APPENDIX G (continued)

c34c2-cdairy chi-square

Child dairy consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

c34d2-cprotein chi-square

Child protein consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

c34e2-ccarbos chi-square

Child carbohydrate consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

c34f2-csweets chi-square

Child sweets consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

c34g2-csnacks chi-square

Child snacks consumption 2nd groupings for the determination of child eating patterns
Group 1 = never, rarely, occasionally, and almost daily
Group 2 = daily and more than once daily

c34a3-cfruit chi-square

Child snacks consumption 3rd groupings for the determination of child eating patterns
Group 1 = never and rarely
Group 2 = occasionally, almost daily, daily, and more than once daily

psumattitudepal

Parent attitude toward their own physical activity level
Computational Formula: (p73 + p74)

APPENDIX G (continued)

csumattitudepal Child attitude toward their own physical activity level
Computational Formula: (p89 + p90)

pweightstatusattitude Parent attitude toward their own weight status split into normal weight and overweight groupings
1 = Normal weight
2 = Overweight
Computational Formula:
Normal weight (1) - includes markedly underweight, underweight, and normal weight responses to p91
Overweight (2) - includes overweight and markedly overweight responses to p91

cweightstatusattitude Parent attitude toward their child's weight status split into normal weight and overweight groupings
1 = Normal weight
2 = Overweight
Computational Formula:
Normal weight (1) - includes markedly underweight, underweight, and normal weight responses to c92
Overweight (2) - includes overweight and markedly overweight responses to c92

restrictionmean Mean of parental restriction of child eating behavior variables
Computational Formula: (c37 + c38 + c39 + c40 + c41 + c42 + c43)/7

pressuremean Mean of pressure parents place on their child to eat variables
Computational Formula: (c44 + c45 + c46 + c47)/4

monitoringmean Mean of parental monitoring of child eating behavior variables
Computational Formula: (c48 + c49 + c50)/3

APPENDIX G (continued)

pebgroup

Parent unhealthy and healthy eating behavior groups based on consumption of fruit, vegetables, dairy products, protein, and carbohydrates
Computational Formula:
1 = Unhealthy eating behaviors
2 = Healthy eating behaviors
Unhealthy eating behaviors (1) - p18a (fruit) & p18b (veggies) = never, rarely, occasionally, or almost daily; p18c (dairy) & p18d (protein) = occasionally, almost daily, daily, or more than once daily; p18e (carbos) = almost daily, daily, or more than once daily at meals
Healthy eating behaviors (2) - p18a (fruit) & p18b (veggies) & p18c (dairy) & p18d (protein) & p18e (carbos) = daily or more than once daily

cebgroup

Child unhealthy and healthy eating behavior groups based on consumption of fruit, vegetables, dairy products, protein, and carbohydrates
Computational Formula:
1 = Unhealthy eating behaviors
2 = Healthy eating behaviors
Unhealthy eating behaviors (1) – c34a (fruit) & c34b (veggies) = never, rarely, occasionally, or almost daily; c34c (dairy) & c34d (protein) = occasionally, almost daily, daily, or more than once daily; c34e (carbos) = almost daily, daily, or more than once daily at meals
Healthy eating behaviors (2) - c34a (fruit) & c34b (veggies) & c34c (dairy) & c34d (protein) & c34e (carbos) = daily or more than once daily

pbmigroup

Parent low and high BMI (kgs./m^2) groups
1 = Low BMI
2 = High BMI
Computational Formula:
Low BMI < 22; High BMI ≥ 26

cbmigroup

Child low and high BMI (kgs./m^2) groups
1 = Low BMI
2 = High BMI
Computational Formula:
Low BMI < 16; High BMI ≥ 18

APPENDIX G (continued)

ppalgroup   Parent high and low physical activity levels
                        (kcal/day)
                        1 = High PAL
                        2 = Low PAL
                        Computational Formula:
                        High PAL ≥ 3106
                        Low PAL < 2233

cpalgroup   Child low and high physical activity levels
                        (kcal/day)
                        1 = Low PAL
                        2 = High PAL
                        Computational Formula:
                        Low PAL < 1090
                        High PAL ≥ 1544

Appendix H

Raw Data

id	q1-conditions	q1a-ortho	q1b-type I	q1c-type II	q1d-other text	q2-year diagnosed	p1-pgender	p2a-pyears	p2b-pmonths	p3-prace	p3a-prace other	p4-pgrade	p5-employment	p5a-employment other
1	2	.	.	.			2	48	4	3		6	1	
2	2	.	.	.			2	44	5	3		5	2	
3	2	.	.	.			2	48	5	1		4	1	
4	2	.	.	.			2	49	11	3		4	2	
5	2	.	.	.	.		2	47	6	3		6	3	
6	2	.	.	.			2	31	2	3		2	1	
7	2	.	.	.			2	37	7	3		6	2	
8	2	.	.	.			2	45	2	3		6	1	
9	2	.	.	.			2	45	6	3		6	1	
10	2	.	.	.			1	47	1	3		4	1	
11	2	.	.	.			2	37	7	3		5	1	
12	2	.	.	.			1	35	10	4		7	1	
13	2	.	.	.			2	35	5	4		5	3	
14	2	.	.	.			2	39	0	3		5	2	
15	2	.	.	.			2	40	10	3		5	3	
16	2	.	.	.		.	2	33	5	5		1	4	
17	2	.	.	.			1	41	5	3		5	5	self emplo
18	2	.	.	.			2	46	8	3		5	1	
19	2	.	.	.			2	34	6	3		6	1	
20	2	.	.	.			2	41	11	3		5	2	
21	1	.	.	.	Meds for 1		2	43	9	3		4	3	
22	2	.	.	.			1	44	2	3		7	1	
23	2	.	.	.			2	46	0	3		5	1	
24	2	.	.	.			2	39	10	3		4	3	
25	2	.	.	.			2	45	0	3		7	1	
26	2	.	.	.			1	40	0	4		7	1	
27	2	.	.	.			2	34	0	3		7	1	
28	2	.	.	.			2	42	6	3		6	1	
29	2	.	.	.			2	43	10	3		6	2	
30	2	.	.	.			2	38	6	3		5	3	
31	.	.	.	.			2	57	6	3		2	1	
32	2	.	.	.			2	59	0	3		6	3	
33	.	.	.	.			2	42	8	3		5	2	
34	2	.	.	.			2	47	2	3		7	2	
35	2	.	.	.			2	30	10	3		4	1	
36	2	.	.	.			1	44	4	3		7	1	
37	2	.	.	.		.	2	32	6	3		5	5	homemak
38	2	.	.	.			2	40	4	3		5	2	
39	2	.	.	.		.	2	44	1	3		6	3	
40	2	.	.	.			1	46	6	3		7	1	
41	2	.	.	.			2	36	0	3		4	2	
42	2	.	.	.			2	31	0	5		4	3	
43	2	.	.	.			2	37	3	3		3	2	
44	.	.	.	.			2	35	8	3		2	1	
45	2	.	.	.			2	30	0	6	Pacific Isl	4	1	
46	2	.	.	.			2	38	4	3		5	1	
47	2	.	.	.			2	37	10	3		6	1	
48	2	.	.	.			2	29	8	3		2	1	
49	2	.	.	.			2	39	4	3		5	1	
50	2	.	.	.			2	33	6	3		6	1	
51	2	.	.	.			2	41	9	3		4	2	
52	2	.	.	.			2	43	5	3		5	3	
53	2	.	.	.			2	36	3	3		5	5	pregnant
54	2	.	.	.			2	37	0	6	Kuwati	6	5	work in Ku
55	2	.	.	.			2	41	3	3		4	1	
56	1	.	.	.	lactose int	.	2	29	7	1		5	1	
57	2	.	.	.			2	37	11	3		2	1	
58	2	.	.	.			2	44	3	3		5	1	
59	2	.	.	.			1	44	0	3		4	1	
60	2	.	.	.			2	41	8	3		4	1	
61	2	.	.	.			2	46	9	.		6	1	
62	2	.	.	.			2	45	2	3		7	1	
63	2	.	.	.			2	29	0	6	Puerto Ric	4	1	
64	2	.	.	.			2	38	4	3		2	3	
65	2	.	.	.			2	34	2	3		4	1	
66	2	.	.	.			2	40	11	3		6	1	
67	.	.	.	.			2	43	0	3		5	1	
68	2	.	.	.			1	49	7	3		7	1	
69	2	.	.	.			2	32	8	3		6	5	graduate s
70	2	.	.	.			2	42	3	3		7	5	student
71	2	.	.	.			2	49	4	3		6	5	self emplo
72	2	.	.	.			2	49	9	3		5	1	
73	2	.	.	.			2	43	9	3		5	3	
74	2	.	.	.			2	76	2	3		3	3	
75	2	.	.	.			2	29	8	3		2	2	
76	2	.	.	.			2	49	4	3		6	1	
77	2	.	.	.			2	41	1	6	Native/Wh	4	1	
78	2	.	.	.			2	43	4	3		4	1	
79	2	.	.	.			2	40	2	3		7	5	substitute
80	2	.	.	.			2	36	0	3		4	2	
81	2	.	.	.			2	49	3	3		7	1	

id	q1-conditions	q1a-ortho	q1b-type I	q1c-type II	q1d-other text	q2-year diagnosed	p1-pgender	p2a-pyears	p2b-pmonths	p3-prace	p3a-prace other	p4-pgrade	p5-employment	p5a-employment other
82	2						2	37	2	3		5	2	
83	2						2	32	6	3		4	3	
84	1				ventricular		2	43	0	3		5	4	
85							2	30	7	5		5	3	
86	2						2	45	2	3		4	1	
87	2						2	42	8	3		6	2	
88	2						2	33	2	3		4	3	
89	2						2	48	2	3		7	2	
90	2						2	35	10	3		5	1	
91	2						1	46	0	3		7	1	
92	2						1	41	0	3		5	1	
93	2						1	43	1	3		3	1	
94	2						2	42	4	6	White Nor	7	5	student
95	2						2	42	7	3		6	1	
96	2						2	26	7	3		4	1	
97	2						2	41	0	3		6	1	
98	2						2	26	4	3		3	3	daycare p
99	2						2	33	4	3		4	1	
100	2						2	35	2	3		2	3	
101							2	42	4	3		5	3	
102	2						2	37	10	3		5	5	homemake
103							2	37	3	4		5	3	
104	2						2	38	8	6	Brazilian/\	7	1	
105	2						2	32	5	3		2	5	disabled
106	1				asthma		2	43	8	3		7	1	
107	2						1	35	3	3		6	3	
108	2						2	48	3	6	Hispanic/\	7	2	
109	2						2	39	5	6	Asian/Eur	6	2	
110	2						2	42	4	3		4	1	
111	2						2	49	2	3		7	2	
112	2						2	50	4	3		7	1	
113	2						2	54	0	4		7	1	
114	2						2	54	5	3		5	5	contract c
115	2						2	36	8	4		6	4	
116							2	44	5	4		5	2	
117	2						1	46	0	4		7	1	
118	2						2	31	0	3		2	2	
119	2						2	35	2	3		6	1	
120	2						2	41	1	3		6	2	
121	2						2	34	7	3		6	1	
122	2						2	48	9	3		5	5	self emplo
123	2						2	46	6	3		7	1	
124	2						1	40	10	4		7	1	
125	2						2	37	8	3		5	3	
126	2						1	37	0	4		7	1	
127	2						2	39	3	6	White Nor	6	1	

id	p6-income	p7-marital status	p8-live in household	p9-pweight (lbs.)	p10-pheight (in.)	c11-cgender	c12a-cyears	c12b-months	c13-crace	c13a-craceother	c14-grade	c15-cweight(lbs.)	c16-cheight(in.)	p17a-pbreakfast
1	85000	2	4	138	67	2	9	10	3		3	68	54	5
2	180000	2	4	165	65	2	7	7	6	Mayan Ind	1	55	46	5
3	30000	1	3	122	66	1	10	7	1		3	68.5	55.5	1
4	60000	2	4	175	65	2	9	11	3		3	86	52.5	2
5	175000	2	4	125	67	1	8	5	3		1	55	51	5
6	15000	1	3	167	63	1	10	11	3		3	76	54	1
7	90000	2	4	143	64	1	9	5	3		2	77	54	5
8	120000	2	4	133	62	2	10	0	3		3	62	51.5	5
9	60000	2	4	160	61	1	10	6	3		3	75	58.75	5
10	100000	2	4	176	68	2	10	9	3		3	70	51	2
11	70000	2	4	185	64	1	9	3	3		2	73	54	5
12	37000	2	4	165	67	1	9	1	4		2	65	54	1
13	32000	2	4	126	63	2	8	1	4		1	56.5	48.5	5
14	30000	4	4	124	62	1	9	4	3		2	73	52	5
15	70000	2	4	123	66	2	8	9	3		2	59	51.5	5
16	18000	1	4	180	67	2	9	7	5		2	82	62	2
17	35000	4	2	205	75	1	10	0	3		3	74	56	5
18	75000	5	4	122	63.25	1	10	2	3		3	60	54	5
19	40000	1	3	123	62	1	9	0	3		2	67	52	2
20		2	4	125	62	2	8	11	3		2	64	50	5
21	150000	2	4	160	68	1	9	2	3		2	61	55	5
22	50000	2	4	205	76	2	7	11	3		1	65	53.5	5
23	50000	2	4	122	60	1	9	10	3		3	72	49	5
24	22000	4	4	220	63	2	9	10	3		3	185	63	2
25		2	4	175	69	1	9	4	3		2	53	51	2
26		2	4	160	70	1	7	9	4		1	70	42	5
27	80000	4	4	140	68	2	10	1	3		3	98	59	5
28	100000	2	4	170	65	1	9	10	3		3	52	52	5
29	55000	2	4	154	70	1	9	7	3		2	74	58	1
30	80000	2	4	122	67	2	10	4	3		3	80	59	5
31	60000	2	3	195	63	1	9	6	3		3			5
32			4	150	66	2	10	1	6	African An	3	110	60	5
33	35000	2	4	145	68	1	10	6	3		3	72	55	3
34	85000	2	4	146	64	2	8	8	3		2	65	52	3
35	60000	2	4	250	59	2	7	7	3		1	56	44	4
36	145000	2	4	220	76	2	9	8	3		3	73	56	5
37	34000	2	4	142	68	2	9	11	3		3	66	58	2
38	100000	2	4	128	64	1	10	3	3		3	82	57.25	5
39	100000	2	4	145	69.75	1	10	2	3		3	121	62	5
40	115000	2	4	163	69	2	10	5	3		3	65	53.5	4
41	23000	2	4	165	68	2	8	8	3		2	60	50	5
42	14000	1	4	210	64	2	10	2	5		3	60	42	1
43	75000	2	4	163	64	1	10	3	3		3	110	58	5
44	70000	2	4	145	67	1	10	1	3		3	81	57	5
45	70000	2	3	135	64	1	8	9	3		2	72	52	2
46	52000	3	4	125	64	2	8	0	3		1	56	52	5
47	100000	2	4	156	68	2	7	6	3		1	74	57	1
48		4	4	168	61.75	1	8	3	3		1	93		2
49		2	4	140	66	1	10	1	3		3	83	56	3
50	125000	2	4	163	69	2	10	0	3		3	73	57	5
51	100000	2	4	165	67	2	8	6	3		1	75	58	5
52	60000	2	4	154	67	1	9	0	3		2	73.5	55	5
53	100000	2	4	147	66	2	7	11	3		1	66	52	2
54	60000	2	4	147	62	1	9	10	6		3	86	55	5
55	50000	2	4	220	70	1	9	1	3		2	74	55.5	4
56	33000	1	4	167	64	2	8	2	1		1	124	50	4
57	65000	2	4	122	65	1	11	5	3		3	85	57	4
58	62000	2	4	162	66	1	9	11	3		3	66	56	5
59	80000	2	4	225	68	2	7	6	3		1	78	52.5	3
60	40000	2	4	124	66	2	9	2	3		2	68	52.5	3
61		2	4	135	64.25	2	9	1			2	68	53	5
62	70000	2	4	113	63	1	8	6	3		1	52	43	5
63	40000	4	3	143	66.5	1	9	2	3		1	69	53	5
64	51000	2	4	124	64	2	7	7	3		1	58	49	5
65	21000	1	4	156	63.5	1	7	10	3		1	51	56	4
66	85000	2	4	135	68	1	8	5	3		1	70	52.5	5
67	60000	2	4	150	65	2			3		1	65	50	5
68	130000	2	4	136	66	1	7	11	3		1	47	51	5
69	18000	1	4	95	60	2	10	0	3		3	72	55	4
70	50000	2	4	120	64	2	7	11	3		1	50	48	2
71	50000	2	4	152	69	2	9	2	3		2	82	57	5
72	61000	2	4	145	62	2	8	2	6	Bi-Racial	1	78	52.5	5
73	50000	2	4	156	65	1	8	11	3		2	100	59	3
74	30000	2	4	130	64	1	11	6	5		3	117	56.5	5
75	12000	3	4		66	1	8	3	3		1	60	51	3
76	42000	4	2	134	64	2	10	6	5		3	120	58	5
77	28000	4	3	225	65	2	8	5	6	Native & V	1	55	48	4
78	25000	2	4	115	69	2	8	3	3		1	58	52	5
79	67000	2	4	125	64.5	1	8	0	3		2	56	52	4
80	23000	2	4	165	68	1	7	8	3		1	52	49	5
81	75000	2	4	133	69	2	10	5	3		3	60	56	5

id	p6-income	p7-marital status	p8-live in household	p9-pweight (lbs.)	p10-pheight (in.)	c11-cgender	c12a-cyears	c12b-months	c13-crace	c13a-craceother	c14-grade	c15-cweight(lbs.)	c16-cheight(in.)	p17a-pbreakfast
82	31000	2	4	148	62	1	8	5	3		1	62	49.5	3
83	17000	2	4	173	65.5	1	8	1	3		1	101	52	1
84	0	2	4	143	64.5	2	7	10	3		1	40	50.25	2
85	36000	2	4	150	65	1	8	5	5		1	62	52	5
86	65000	2	4	146	68	1	8	10	3		2	107	53	2
87	100000	2	4	125	64.5	2	8	8	3		1	60	49	5
88	65000	2	4	159	68	1	8	4	3		1	.		2
89	.	2	4	128	66	2	9	5	3		2	85	53.75	5
90	30000	4	4	135	64	2	8	0	3		1	58	48.5	3
91	100000	2	4	182	72	1	9	7	3		2	70	55	5
92	81000	2	4	180	71.75	1	8	3	3		1	58	52.5	4
93	48000	2	4	181	69	1	8	5	3		1	59	53	2
94	30000	2	4	163	65.75	1	10	0	6	White Nor	3	57	.	5
95	75000	2	4	142	66	1	8	9	3		1	60	55	5
96	35000	1	4	137	66	2	7	10	3		1	70	52.5	3
97	45000	2	4	140	66	2	10	3	3		3	70	52	5
98	62000	1	4	112	62	1	7	9	3		1	56	48	4
99	80000	4	3	135	62	1	10	0	3		3	94	56	5
100	17000	2	4	169	68	1	8	2	3		1	67	52	2
101	90000	2	4	158	63	1	8	2	3		1	57.5	52.5	2
102	90000	2	4	130	66.75	2	8	3	3		1	47	49	4
103	22000	2	4	154	61.42	2	10	2	4		3	69	50	4
104	.	2	4	145	70	1	8	1	6	Brazilian/\	1	66	54	5
105	45000	2	3	185	64	2	8	6	3		1	105	55.5	5
106	50000	3	4	176	68	1	10	4	6		3	74	57.75	5
107	250000	2	4	195	71	1	8	2	3		1	74.5	53	4
108	19000	1	4	125	61.5	1	8	8	6	Hispanic/\	1	45	47	4
109	45000	2	4	136	67	1	9	2	4	Asian	2	60	56	5
110	64000	2	4	170	66	2	9	1	3		2	.	.	5
111	150000	2	4	102	60	2	9	3	3		2	60	51	5
112	85000	1	4	182	66	2	8	5	1		1	72	54	4
113	.	2	4	152	65	2	8	0	6	White Am	1	66	55	5
114	.	2	4	123	65.5	1	8	11	3		2	63	53.5	5
115	53000	2	4	135	63	2	9	2	4		2	64	51.5	5
116	.	2	4	122	62.99	1	9	8	4		3	59.4	53	5
117	.	2	4	160	68	1	10	0	4		3	65	54	5
118	40000	4	3	124	69	2	9	2	3		2	70	54	5
119	60000	2	4	114	63	1	9	2	3		2	57	50	5
120	40000	3	3	145	67	2	9	5	3		2	90	55	3
121	90000	2	4	115	64.75	1	7	11	3		1	53	51	5
122	40000	1	3	126	67	1	9	11	3		3	70	57.25	3
123	70000	2	3	130	61.5	1	8	9	3		2	61	52	5
124	30000	2	4	163	68.5	2	9	8	4		3	.	.	5
125	40000	2	4	135	69	1	8	10	3		2	77	54	5
126	60000	2	4	130	68.9	2	10	0	4		3	67	57	5
127	95000	2	4	190	64	2	8	1	6	White Nor	1	78	52	5

id	p17b-plunch	p17c-dinner	p17d-psnacks	p18a-pmeals fruit	p18b-pmeals veggies	p18c-pmeals dairy	p18d-pmeals protein	p18e-pmeals carbos	p18f-pmeals sweets	p18g-pmeals snacks	p18h-pmeals diet food	p19-psnacks eat	p20a-psnacks fruit	p20b-psnacks veggies
1	5	5	4	6	6	4	4	5	3	2	2	1	4	4
2	5	5	5	6	6	6	6	6	6	6	6	2	3	2
3	2	5	2	3	4	2	5	5	2	2	1	1.5	2	3
4	2	3	4	3	4	4	3	4	2	2	1	2	3	3
5	5	5	2	6	5	5	5	6	4	4	1	0	2	1
6	5	4	1	3	4	4	5	5	3	1	2	0	3	1
7	5	5	4	6	5	3	5	6	4	3	2	2	4	2
8	5	4	4	3	4	4	4	6	2	5	5	1	2	3
9	5	5	5	3	4	4	5	5	5	5	2	1	3	3
10	4	5	2	3	4	6	5	6	5	4	2	2	3	3
11	5	5	5	6	5	6	4	5	4	3	5	2	6	4
12	3	4	4	5	5	5	3	5	4	3	3	1	5	1
13	5	5	4	5	6	4	5	6	3	3	1	1	4	2
14	5	5	5	3	6	2	6	6	4	2	4	2	3	2
15	5	5	5	5	5	5	4	4	1	1	4	3	6	6
16	3	5	4	4	3	4	5	5	3	2	1	1	4	3
17	5	5	4	4	6	3	6	6	5	2	1	1	3	3
18	5	5	5	4	5	5	5	5	6	5	5	4	3	4
19	5	5	3	3	4	5	5	4	5	1	1	2	3	2
20	5	5	3	6	6	6	4	6	3	2	1	1	3	3
21	5	5	5	6	6	5	4	6	3	1	6	2	6	1
22	5	5	5	3	4	5	6	5	6	4	3	2	2	2
23	5	5	4	6	6	5	6	6	4	3	1	2	5	3
24	4	5	4	4	4	4	4	5	4	3	2	1.5	2	3
25	5	5	5	4	6	6	6	6	3	3	1	2	3	2
26	5	5	3	4	6	2	3	6	2	3	1	1	3	1
27	4	5	2	5	5	5	4	5	3	1	1	0	5	5
28	5	5	2	6	6	6	5	5	3	2	2	2	1	5
29	5	5	5	5	5	6	5	6	4	3	1	2	3	2
30	5	5	5	4	4	6	3	6	4	2	1	2	4	1
31	5	5	5	5	5	5	5	5	5	4	3	1	5	5
32	4	5	4	6	5	5	5	5	3	2	1	2	5	3
33	5	5	2	3	4	6	4	5	2	2	1	1	3	2
34	4	5	2	4	5	4	5	5	2	2	2	1	2	3
35	5	5	4	5	3	6	4	5	3	3	2	1	3	1
36	5	5	5	6	5	4	6	6	4	5	1	3	5	2
37	3	5	4	2	2	6	3	4	2	4	1	2	1	1
38	5	5	4	4	5	6	5	6	4	3	1	1	4	2
39	5	5	5	5	6	6	3	6	5	2	3	2	4	1
40	2	5	3	3	4	4	3	4	3	3	1	1	3	3
41	5	5	4	5	5	3	5	5	3	3	1	2	5	3
42	3	5	3	4	5	5	6	6	3	3	1	1	4	5
43	5	5	5	4	6	5	5	6	4	5	2	2	4	4
44	5	5	4	2	4	5	2	3	4	3	1	1	1	1
45	5	4	3	3	6	4	5	3	5	3	1	1	3	3
46	5	5	5	4	4	4	5	6	5	3	2	3	3	2
47	4	5	5	3	3	5	5	5	6	3	1	5	1	1
48	4	4	4	3	3	5	4	3	5	3	1	1	2	2
49	5	5	5	6	5	5	5	5	3	2	1	3	6	3
50	5	5	5	6	6	5	5	6	5	3	1	2	4	5
51	5	5	5	6	6	2	5	5	3	2	1	2	5	5
52	5	5	5	4	6	4	6	6	5	3	2	1	3	5
53	5	5	2	5	5	6	6	4	2	1	1	1.5	5	4
54	5	3	3	5	6	6	6	6	3	2	4	2	5	5
55	5	3	3	4	6	5	6	5	2	2	1	1	3	3
56	3	5	5	4	5	3	5	5	6	3	2	2	3	4
57	4	5	5	6	6	6	3	5	4	4	3	2	5	3
58	5	5	4	5	5	5	5	5	5	4	3	2	6	3
59	5	5	5	4	5	4	5	5	3	3	1	1	3	2
60	5	5	3	5	4	4	6	5	6	3	3	1	2	3
61	5	5	3	5	5	5	4	5	3	3	1	0.5	5	3
62	5	5	2	4	4	6	5	5	3	3	1	2.5	3	1
63	4	5	4	5	5	6	6	6	3	2	1	2	4	3
64	5	5	5	5	4	5	6	5	5	3	1	2	2	2
65	5	5	5	6	6	6	6	3	3	2	6	2	6	6
66	5	5	5	6	5	6	5	5	4	3	1	1	4	2
67	5	5	4	4	3	5	5	5	3	1	1	1	4	3
68	5	5	5	6	6	1	3	3	1	2	1	2	6	6
69	4	5	5	6	6	6	4	6	3	3	1	3	5	4
70	4	5	2	4	5	6	3	6	2	2	1	2	3	3
71	5	4	5	6	6	6	3	6	5	1	1	3	6	2
72	4	5	4	5	5	6	5	6	4	3	2	1	5	3
73	5	5	5	3	5	5	5	5	5	3	3	2	1	1
74	5	5	3	5	5	3	5	3	5	3	2	1	5	5
75	5	5	3	3	3	3	5	5	4	3	3	2	3	2
76	5	5	5	6	6	6	6	6	4	3	1	2	4	1
77	4	4	4	4	4	4	4	4	4	3	2	1.5	3	2
78	5	5	5	5	5	6	6	5	6	5	2	1	3	3
79	5	5	5	5	6	4	4	6	3	2	1	2	3	2
80	5	5	5	5	5	3	5	5	3	3	1	2	5	3
81	5	5	5	6	5	5	5	5	3	2	1	2	5	2

id	p17b-plunch	p17c-dinner	p17d-psnacks	p18a-pmeals fruit	p18b-pmeals veggies	p18c-pmeals dairy	p18d-pmeals protein	p18e-pmeals carbos	p18f-pmeals sweets	p18g-pmeals snacks	p18h-pmeals diet food	p19-psnacks eat	p20a-psnacks fruit	p20b-psnacks veggies
82	4	5	5	6	6	5	5	6	5	3	1	2	5	4
83	5	5	5	3	5	4	5	3	5	5	3	3	1	5
84	3	5	3	3	5	5	5	6	2	2	1	0	2	2
85	5	5	1	5	5	5	3	5	2	1	1	1	3	1
86	4	5	5	4	4	2	5	3	5	3	1	2	4	2
87	5	5	4	5	5	6	5	6	3	2	2	1	5	1
88	5	5	5	3	4	6	5	6	5	4	1	1	1	1
89	5	5	4	6	6	5	6	6	2	1	1	2	4	1
90	4	5	3	5	6	4	5	5	3	2	2	1	4	4
91	5	5	5	5	5	5	4	5	4	3	1	1	1	1
92	4	4	2	4	3	6	4	6	3	2	1	2.5	4	2
93	4	5	5	3	4	3	4	4	4	3	1	2	3	2
94	5	5	5	5	5	5	5	5	4			2	5	5
95	5	5	4	6	6	6	6	6	6	4	2	1	5	3
96	5	5	2	3	4	6	5	6	2	3	1	1	1	1
97	5	5	5	4	4	4	5	5	3	2	2	2	3	2
98	5	5	5	6	6	6	6	6	4	2	1	2	5	3
99	5	5	3	4	6	3	5	5	3	3	3	1	1	3
100	3	5	4	3	4	5	4	4	6	3	1	2	2	3
101	5	5	3	3	3	4	5	5	2	2	2	0.5	3	2
102	4	5	5	5	5	5	5	5	5	3	3	2	3	3
103	5	5	2	5	5	1	4	6	3	2	1	1	4	3
104	5	5	3	4	5	5	4	6	4	2	3	0.5	3	1
105	5	5	5	3	5	2	5	5	5	4	1	2	3	1
106	5	5	1	6	6	5	6	6	3	1	1	0	1	1
107	5	5	5	6	6	6	6	6	4	4	1	3	4	3
108	2	5	5	6	5	6	5	6	4	4	1	1	1	1
109	4	5	5	5	5	5	5	5	3	2	1	1	3	1
110	4	5	4	5	6	6	6	5	3	3	4	2	1	1
111	5	5	5	6	5	6	3	6	4	1	1	1.5	4	2
112	4	5	4	6	5	3	4	6	6	2	2	3.5	6	3
113	4	5	4	1	6	1	5	6	4	3	1	1	1	2
114	4	4	4	6	5	4	5	6	4	1	1	2	6	4
115	5	5	3	4	6	5	6	5	3	2	1	1	3	2
116	5	5	2	5	5	5	3	5	2	2	1	1	5	1
117	5	5	2	5	5	2	5	5	2	3	1	1	5	5
118	5	5	5	6	6	6	6	6	3	3	1	3	5	4
119	5	5	4	5	5	6	4	6	4	2	1	1	3	2
120	4	5	2	6	6	2	4	5	2	2	1	1	5	3
121	4	5	5	6	6	5	4	4	4	3	1	2	5	5
122	5	5	4	4	6	4	5	5	3	2	2	0.5	1	1
123	5	5	5	5	6	1	6	5	3	3	1	2	5	3
124	5	5	2	3	6	3	4	6	3	3	2	0.3	3	1
125	5	5	4	5	6	6	6	6	3	2	1	1	4	4
126	5	5	2	3	5	5	3	5	3	2	2	0	3	3
127	5	5	5	3	4	6	4	6	5	3	5	2	3	2

id	p20c-psnacks dairy	p20d-psnacks protein	p20e-psnacks carbos	p20f-psnacks sweets	p20g-psnacks snacks	p20h-psnacks dietfood	p21-peat not hungry	p22a-penh emotions	p22b-penh others eating	p22c-penh time to eat	p22d-penh looks/taste	p22e-penh prevent hunger	p22f-penh other	p22g-penh other text
1	2	2	2	2	2	2	3	2	3	2	3	2	1	
2	3	3	3	3	3	4	3	3	2	3	4	2	1	
3	2	4	4	1	2	1	2	1	3	2	3	3	1	
4	3	2	3	2	2	1	2	3	3	3	3	2	1	
5	1	2	1	1	1	1	2	1	3	4	1	1	3	when cook
6	1	1	1	1	1	1	1							
7	2	2	3	4	3	2	3	4	3	3	3	2	1	
8	2	1	2	2	4	1	2	4	3	3	2	3	1	
9	3	3	3	4	4	1	4	3	3	5	5	1	1	
10	4	2	4	4	4	2	3	4	4	2	4	2	1	
11	5	4	4	4	3	5	4	5	2	4	3	1	1	
12	2	1	2	3	3	3	1							
13	3	2	3	3	3	1	4	3	3	5	4	5	1	
14	1	5	4	2	2	3	3	3	3	3	4	4	4	when alrea
15	3	3	4	4	3	2	2	1	5	3	5	2	1	
16	5	5	5	3	1	1	1							
17	3	2	3	3	2	1	3	3	3	3	1	3	1	
18	3	3	4	6	3	5	3	5	4	3	5	2	1	
19	4	2	2	4	1	1	1							
20	2	3	1	3	2	1	3	3	3	4	3	1	1	
21	3	1	4	3	1	5	4	4	3	4	2	1	1	
22	2	4	2	4	4	2	4	3	3	4	4	3	1	
23	3	3	3	3	3	1	3	1	1	1	4	1	1	
24	1	4	6	4	3	2	3	3	3	4	4	3	1	
25	3	3	3	4	5	1	3	4	3	2	4	1	1	
26	2	1	3	3	3	1	2	1	3	1	4	1	1	
27	2	2	2	2	1	1	3	4	1	1	2	1	1	
28	1	3	1	1	1	1	3	4	1	1	1	1	1	
29	2	1	3	4	2	1	3	1	3	4	4	1	1	
30	3	1	4	1	1	1	3	4	2	3	4	2	1	
31	1	1	4	3	3	3	3	4	3	3	3	2	1	
32	5	3	3	3	2	1	2	4	2	4	2	2	3	tasting re
33	3	3	3	2	2	1	2	2	3	3	3	3	1	
34	3	3	4	2	2	2	2	1	3	3	3	2	1	
35	3	3	1	3	3	1	2	1	1	1	4	1	1	
36	2	2	2	4	5	1	2	2	3	2	3	3	1	
37	1	1	1	1	4	1	1							
38	3	2	4	3	3	1	2	2	3	3	3	3	1	
39	4	3	5	3	2	3	3	3	3	4	3	2	1	
40	2	1	2	2	2	1	2	1	2	2	2	1	2	for planne
41	2	3	4	2	2	1	1							
42	2	1	1	2	2	1	2	1	1	4	1	1	1	
43	4	1	1	3	5	1	3	3	3	4	2	2	1	
44	1	1	1	4	1	1	4	2	1	5	1	3	1	
45	4	4	3	4	3	1	3	2	3	1	2	1	1	
46	3	3	3	5	3	1	4	3	5	4	3	2	1	
47	4	4	1	6	3	1	1							
48	3	3	1	5	2	1	3	4	2	2	1	1	1	
49	4	1	5	3	2	1	2	3	3	1	1	1	1	
50	1	3	3	2	2	1	3	3	3	3	3	2	1	
51	2	5	3	2	1	3	5	3	3	3	3	1	3	
52	5	4	2	3	2	2	4	4	3	3	3	2	1	
53	5	4	1	1	1	1	2	3	3	3	3	2	3	combat na
54	2	3	2	2	2	3	4	5	1	4	4	2	1	
55	3	3	3	2	2	1	3	1	3	3	3	1	1	
56	3	3	3	6	3	2	3	3	3	4	4	3	1	
57	3	3	5	4	4	3	2	1	5	3	3	4	1	
58	3	4	4	4	3	3	3	3	3	3	3	3	1	
59	3	3	3	2	2	1	3	2	3	4	3	4	3	extended
60	4	3	4	5	5	1	1							
61	3	2	3	3	2	1	4	4	3	3	2	1	1	
62	3	3	1	3	3	1	2	1	1	3	1	1	1	
63	4	3	5	2	2	1	2	1	1	4	4	3	1	
64	3	2	3	4	3	1	2	2	4	3	2	1	1	
65	2	1	1	2	2	1	2	3	1	1	1	1	1	
66	4	3	1	4	3	1	2	1	4	3	1	3	1	
67	3	1	1	2	1	1	3	1	2	3	3	3	1	
68	1	1	1	2	1	1	1	1	1	1	1	1	1	
69	6	1	5	2	2	1	1							
70	4	2	4	3	1	1	2	1	1	1	5	1	1	
71	2	5	5	4	1	1	3	5	2	1	3	1	1	
72	3	2	1	3	2	1	3	3	3	2	4	2	1	
73	1	1	1	5	5	1	3	4	1	1	3	1	1	
74	5	2	4	2	1	1	1							
75	3	2	2	2	3	2	2	3	2	3	2	1	1	
76	1	4	4	1	1	1	3	1	3	3	3	3	1	
77	2	2	3	4	3	1	4	3	2	1	4	2	1	
78	3	2	5	5	2	1	3	2	3	3	3	3	1	
79	3	1	3	4	2	1	3	3	1	3	4	1	1	
80	2	3	4	2	2	1	1							
81	2	3	4	2	1	1	2	1	4	2	2	3	1	

id	p20c-psnacks dairy	p20d-psnacks protein	p20e-psnacks carbos	p20f-psnacks sweets	p20g-psnacks snacks	p20h-psnacks dietfood	p21-peat not hungry	p22a-penh emotions	p22b-penh others eating	p22c-penh time to eat	p22d-penh looks/taste	p22e-penh prevent hunger	p22f-penh other	p22g-penh other text
82	3	3	5	3	2	1	3	4	3	1	3	1	1	
83	1	5	1	5	5	1	3	3	1	3	4	3	1	
84	3	3	2	2	2	2	1							
85	1	1	1	1	1	1	1							
86	1	2	2	5	4	1	2	2	3	4	4	2	1	
87	5	1	5	1	1	1	2	3	1	1	3	1	4	pms
88	3	1	1	3	1	1	3	4	2	2	2	2	1	
89	1	5	1	2	2	1	3	1	3	1	3	3	3	keeps me
90	4	3	3	3	2	2	2	1	3	2	4	1	1	
91	1	1	1	4	1	1	1	1						
92	6	3	4	3	2	1	3	3	3	2	3	1	1	
93	2	3	3	4	3	1	3	3	3	2	4	2	1	
94	1	1	1	5	1	1	3	3	3	1	3	1	1	
95	3	2	1	5	4	2	2	1	4	4	1	1	1	
96	1	1	1	1	4	1	2	3	1	1	3	1	1	
97	2	2	2	3	3	1	3	2	3	4	3	2	1	
98	6	3	6	4	2	1	2	2	1	2	3	3	1	
99	3	3	2	3	2	2	3	3	3	1	2	1	1	
100	3	4	3	4	3	1	3	4	3	2	3	1	1	
101	2	3	2	2	2	2	1							
102	4	2	3	4	3	3	4	2	4	4	4	2	1	
103	1	3	3	4	3	1	2							
104	4	1	4	2	2	1	2	3	2	1	3	1	1	
105	1	1	1	4	4	1	3	4	3	4	4	1	1	
106	1	1	1	1	1	1	2	2	4	3	2	1	1	
107	2	3	2	4	3	1	3	3	4	2	4	2	1	
108	5	1	4	4	4	1	2	3	3	1	3	1	4	eat all on
109	3	1	3	3	1	1	3	3	3	1	1	3	1	
110	3	1	1	3	1	4	3	4	3	3	4	3	1	
111	2	1	3	4	1	1	3	2	3	3	3	2	1	
112	1	2	3	6	2	2	3	3	3	2	2	2	4	habit
113	1	2	1	3	3	1	3	3	3	2	3	1	1	
114	4	2	5	4	1	1	2	3	2	2	2	3	1	
115	2	3	1	3	2	1	2	1	4	1	4	2	1	
116	1	3	3	3	1	1	4	1	1	4	1	1	1	
117	2	5	5	2	3	1	3	1	2	3	3	2	1	
118	5	4	4	2	2	1	2	1	3	1	1	1	1	
119	3	2	3	3	2	1	3	3	3	5	2	2	1	
120	2	2	2	2	2	1	2	2	3	3	3	2	1	
121	2	3	2	3	3	1	2	3	1	1	3	1	1	
122	1	1	1	3	3	2	3	2	3	1	3	2	1	
123	1	3	1	2	2	1	2	2	3	3	4	2	1	
124	2	2	1	3	3	2	2	1	3	1	1	1	1	
125	4	3	3	2	2	1	3	2	5	3	2	3	3	leftover
126	3	3	3	3	3	3	3	1	2	4	2	3	1	
127	3	2	3	4	3	2	4	4	3	4	4	2	1	

id	p23-ptoo many sweets	p24-ptoo many high fat	p25-ptoo many junk	p26-ptoo many favorites	p27-ptoo many times	p28-ptoo few times	p29-ptoo much food	p30-penough food	p31-pebehaviors healthy	p32-pebehaviors satisfied	c33a-cbreakfast	c33b-clunch	c33c-cdinner	c33d-csnacks
1	4	3	4	5	4	3	3	3	4	4	5	5	5	5
2	1	3	3	3	1	5	1	5	4	3	5	5	5	5
3	5	5	5	5	5	1	5	1	3	3	5	5	5	3
4	5	4	4	4	4	3	3	3	2	2	4	5	5	5
5	4	4	5	3	5	5	4	4	4	4	5	5	5	5
6	3	3	4	2	5	3	5	3	2	3	4	5	5	3
7	2	3	3	4	3	5	3	5	4	4	5	5	5	5
8	5	4	1	1	4	3	3	4	2	2	5	5	4	5
9	1	1	1	1	1	5	2	5	4	2	5	5	5	5
10	2	1	2	2	4	2	2	4	3	2	5	5	5	5
11	2	1	2	2	3	5	1	5	3	2	5	5	5	5
12	5	3	5	2	4	5	5	5	4	4	5	5	5	5
13	3	3	4	2	3	5	3	4	3	3	5	5	5	5
14	2	4	5	5	5	3	3	4	4	4	5	5	5	5
15	4	4	5	5	5	3	4	4	5	5	5	5	5	5
16	4	3	4	3	5	3	5	5	5	5	5	5	5	5
17	2	3	4	4	4	5	3	5	4	4	5	5	5	5
18	2	3	3	3	4	5	2	5	3	3	5	5	3	4
19	5	5	5	5	5	5	5	3	4	4	4	5	5	5
20	3	4	5	4	4	5	3	5	4	4	5	5	5	5
21	3	3	3	4	4	4	4	4	4	4	5	5	5	5
22	1	1	1	1	3	5	2	5	3	3	5	5	5	5
23	3	4	3	4	3	4	4	5	4	4	5	5	5	5
24	2	2	1	1	2	5	1	5	3	3	4	5	5	5
25	4	2	3	4	3	4	3	4	3	3	5	5	5	5
26	5	4	5	4	5	5	5	5	5	4	5	5	5	5
27	3	4	5	3	5	3	5	3	3	3	5	5	5	4
28	2	4	4	3	3	4	3	5	4	4	5	5	5	5
29	2	3	3	1	4	3	3	4	3	3	5	5	5	4
30	3	3	5	2	4	5	4	5	4	2	5	5	5	5
31	3	2	4	3	3	4	3	4	3	3	5	5	5	5
32	3	3	3	4	3	4	3	5	4	4	5	5	5	4
33	4	3	4	3	4	3	4	3	4	4	5	5	5	5
34	4	2	3	2	4	2	1	5	3	3	5	5	5	3
35	4	3	3	4	4	3	4	4	3	3	4	5	5	5
36	4	3	3	4	4	4	3	5	4	4	5	5	5	5
37	4	2	2	2	4	1	5	1	2	2	5	5	5	3
38	3	3	4	4	3	4	3	5	4	3	5	5	5	5
39	3	3	4	2	3	4	3	4	4	3	5	5	5	5
40	4	3	4	4	5	3	4	3	4	4	5	5	5	4
41	4	5	5	4	5	5	5	5	4	4	5	5	5	5
42	3	3	3	3	4	2	4	3	2	1	5	5	5	5
43	4	3	3	3	4	4	2	5	3	2	5	5	5	5
44	3	3	4	4	5	5	4	5	2	4	5	5	5	5
45	3	5	4	3	5	3	3	5	2	1	5	5	5	5
46	2	2	2	2	1	4	2	5	3	2	5	5	5	5
47	1	1	1	1	1	5	4	5	3	3	5	5	5	5
48	2	2	2	2	3	3	2	3	2	1	5	4	5	4
49	3	4	4	5	5	3	3	5	4	4	5	5	5	5
50	2	4	4	4	3	5	3	5	4	4	5	5	5	5
51	3	4	4	3	3	5	3	4	4	4	4	5	5	5
52	3	3	4	2	3	5	3	5	4	2	5	5	5	5
53	5	5	5	2	5	2	5	2	4	4	2	5	5	5
54	3	4	4	2	3	2	1	4	4	2	5	5	5	5
55	5	3	5	4	5	4	5	4	4	4	5	5	5	5
56	3	3	2	4	5	3	4	3	3	3	5	5	5	5
57	3	2	3	1	4	4	5	3	3	4	3	5	5	5
58	2	3	3	3	4	4	2	5	3	3	5	5	5	5
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60	3	4	3	4	5	3	4	3	4	3	4	5	5	5
61	2	3	3	3	3	5	3	5	3	3	3	5	5	5
62	3	4	3	4	5	4	4	4	4	4	5	5	5	5
63	4	3	5	3	4	3	4	4	4	4	5	5	5	5
64	3	3	2	3	2	4	4	4	3	3	5	5	5	5
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66	3	4	4	4	5	5	5	5	4	4	5	5	5	5
67	3	4	4	3	3	3	3	4	4	4	5	5	5	5
68	4	4	5	4	4	4	3	5	5	5	5	4	5	5
69	5	4	4	4	5	3	5	3	4	4	5	5	5	5
70	4	3	4	5	5	2	5	4	4	4	5	5	5	5
71	3	3	4	4	5	4	3	4	4	4	5	5	5	5
72	3	4	4	4	4	4	3	4	4	4	5	5	5	5
73	1	3	3	4	3	5	2	5	3	2	5	5	5	5
74	5	4	5	3	4	4	3	5	4	4	5	5	5	3
75	3	2	4	1	4	4	4	4	3	3	5	4	4	4
76	4	3	4	3	5	5	3	4	4	4	5	5	5	5
77	1	1	1	1	1	4	1	5	3	2	5	5	5	5
78	4	4	3	4	4	4	4	4	4	4	5	5	5	5
79	3	5	4	5	5	5	4	5	4	4	5	5	5	5
80	3	5	5	5	5	5	5	5	4	4	5	5	5	5
81	4	4	4	3	4	5	4	5	4	4	5	5	5	5

id	p23-ptoo many sweets	p24-ptoo many high fat	p25-ptoo many junk	p26-ptoo many favorites	p27-ptoo many times	p28-ptoo few times	p29-ptoo much food	p30-penough food	p31-pebehaviors healthy	p32-pebehaviors satisfied	c33a-cbreakfast	c33b-clunch	c33c-cdinner	c33d-csnacks
82	2	4	3	3	4	3	4	3	4	4	5	5	5	5
83	3	3	2	3	2	5	3	5	2	2	5	5	5	5
84	5	4	5	5	5	5	5	5	5	5	5	5	5	5
85	5	5	5	3	5	5	5	5	4	4	5	5	5	5
86	1	2	1	4	4	3	4	4	3	3	2	5	5	5
87	5	4	5	3	4	5	4	5	5	5	4	5	5	5
88	2	2	2	3	3	5	2	5	3	3	5	5	5	5
89	4	4	4	3	3	4	4	4	5	4	5	5	5	5
90	3	3	4	4	4	3	4	4	4	4	5	5	5	5
91	5	5	5	5	5	3	5	4	4	4	5	5	5	5
92	3	3	4	2	3	4	3	4	3	4	5	5	5	5
93	3	4	3	4	4	5	3	5	3	3	5	5	5	4
94	2	4	5	3	3	5	3	5	4	4	5	5	5	5
95	2	4	4	3	4	3	3	4	4	4	5	4	5	5
96	5	4	5	4	5	4	4	5	4	4	5	5	5	5
97	3	3	3	4	2	4	2	5	3	2	3	5	5	4
98	3	4	4	5	5	5	5	5	4	4	5	5	5	5
99	4	3	3	4	5	5	5	5	4	3	5	5	5	5
100	2	3	3	3	4	3	4	3	4	3	5	5	5	5
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102	1	3	3	3	2	5	2	5	4	4	5	5	5	5
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104	3	3	5	2	2	5	3	5	4	3	5	5	5	5
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107	2	3	3	2	2	5	2	5	3	3	5	5	4	5
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109	3	4	5	3	3	3	3	3	3	3	5	5	5	5
110	3	3	4	3	3	4	3	4	3	3	5	4	5	3
111	4	4	5	4	4	5	4	4	4	4	5	5	5	5
112	2	3	2	5	3	5	2	5	4	3	5	5	5	5
113	4	3	3	3	4	5	2	5	3	3	5	5	5	5
114	5	5	5	4	5	3	4	4	4	4	4	3	5	5
115	4	4	5	4	5	5	4	5	5	5	5	5	5	5
116	4	4	5	3	5	5	5	5	5	5	5	5	5	4
117	4	3	4	2	5	5	4	5	4	3	4	5	5	5
118	5	4	5	4	5	4	5	5	5	5	5	5	5	5
119	3	4	4	3	4	4	4	4	4	4	5	5	5	5
120	4	4	5	5	4	3	4	3	4	4	5	5	5	5
121	4	4	4	3	4	3	4	3	4	4	5	4	5	5
122	3	4	4	5	5	4	5	5	4	4	5	5	5	5
123	5	4	5	3	4	3	4	3	5	5	5	5	5	5
124	3	3	4	3	4	5	4	5	3	3	5	5	5	4
125	5	3	5	3	4	4	3	5	4	4	5	5	5	5
126	4	4	4	4	4	4	4	3	3	4	4	4	4	4
127	1	1	1	1	1	5	1	5	3	2	5	5	5	5

id	c34a-cmeals fruit	c34b-cmeals veggies	c34c-cmeals dairy	c34d-cmeals protein	c34e-cmeals carbos	c34f-cmeals sweets	c34g-cmeals snacks	c34h-cmeals diet food	c35-csnacks eat	c36a-csnacks fruit	c36b-csnacks veggies	c36c-csnacks dairy	c36d-csnacks protein	c36e-csnacks carbos
1	6	6	5	3	5	3	3	1	2	3	3	3	2	4
2	5	4	4	5	6	5	3	2	2	5	3	4	4	5
3	5	2	2	5	6	3	3	1	2	3	1	1	3	1
4	4	4	4	4	5	4	4	1	2	3	2	3	3	3
5	6	5	6	5	6	6	4	1	2	3	1	4	1	4
6	3	2	6	5	5	3	4	1	2	3	1	5	4	5
7	5	3	6	6	5	4	4	1	3	5	1	3	3	4
8	5	4	5	5	6	3	3	1	2	5	2	4	2	3
9	4	5	5	4	3	6	5	1	2	4	3	5	2	2
10	6	5	5	4	5	3	3	2	3	5	5	5	2	2
11	5	5	6	6	6	3	3	1	2	5	2	5	2	5
12	5	5	5	3	3	4	5	2	2	5	3	5	3	3
13	5	4	6	5	6	4	4	1	2	4	1	6	3	4
14	6	6	4	6	6	4	2	2	2	4	1	3	4	3
15	6	6	6	5	5	1	1	1	3	6	5	4	3	3
16	4	4	5	5	5	3	2	2	3	4	4	5	5	5
17	3	4	4	5	3	6	3	1	1.5	1	1	1	1	3
18	2	2	6	5	5	6	4	1	3	2	1	3	3	4
19	4	5	6	6	6	3	1	1	2	4	2	5	2	5
20	6	6	6	4	6	4	2	1	2	4	3	3	3	4
21	5	5	5	3	5	5	3	1	4	4	1	1	1	1
22	4	5	5	5	5	5	4	1	2	3	3	5	3	5
23	6	5	6	6	6	6	4	1	3	6	5	6	3	4
24	4	4	4	6	6	5	5	3	1.5	2	2	2	3	4
25	6	6	6	5	6	4	3	1	3	3	3	3	3	3
26	3	4	5	3	5	2	5	1	2	3	2	1	1	2
27	5	5	5	5	5	3	1	1	0	6	4	5	3	3
28	5	5	6	5	6	5	5	1	2	1	4	1	1	1
29	5	4	5	5	6	4	3	1	3	3	1	3	2	3
30	3	3	4	3	5	4	3	1	1	3	1	3	1	4
31	4	4	4	4	4	3	4	4	2	4	5	5	5	5
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33	4	4	5	5	5	4	2	1	2	4	3	4	3	4
34	4	5	5	5	5	3	3	1	1	3	3	3	2	3
35	3	3	6	4	4	3	3	1	2	3	1	3	1	4
36	4	5	5	5	6	6	5	1	3	4	3	3	2	3
37	4	4	6	3	4	3	3	1	0.5	3	2	3	2	2
38	2	4	6	6	6	4	3	1	2	2	2	3	3	5
39	5	5	6	5	6	5	2	3	2	3	3	5	2	5
40	4	5	5	4	3	3	4	1	2	3	2	2	1	2
41	5	3	3	5	5	3	3	1	2	4	3	2	2	3
42	5	6	6	5	5	3	4	1	2	4	2	3	1	1
43	6	5	6	5	6	3	5	1	2	5	3	3	2	2
44	3	4	5	3	5	2	2	1	2	3	2	3	2	2
45	5	5	6	5	6	3	3	1	2	3	3	4	3	3
46	3	4	6	6	6	3	2	1	2	3	3	2	2	4
47	6	6	6	4	5	5	3	1	3	5	3	3	1	1
48	4	3	6	5	5	4	3	1	1	3	3	3	3	3
49	5	5	5	5	5	4	2	1	3	4	4	3	3	3
50	6	6	5	5	6	5	3	1	1	3	3	2	3	3
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52	5	5	6	6	6	6	5	1	2	5	2	3	2	3
53	5	5	5	5	5	3	1	1	1.5	4	3	5	3	2
54	4	3	6	6	6	6	6	2	3	3	3	2	1	4
55	6	5	6	5	5	6	5	1	5	4	4	4	3	3
56	5	5	3	5	6	3	3	2	2	6	3	2	4	3
57	4	4	6	4	5	5	6	2	3	4	4	6	3	4
58	5	5	6	6	6	5	4	1	1	3	3	4	3	4
59	5	5	5	5	5	2	2	1	2	4	3	4	2	3
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61	5	5	4	5	5	4	5	1	3	5	5	5	2	2
62	5	4	6	5	5	3	3	1	1	3	1	1	1	3
63	4	5	6	6	6	3	2	1	2	3	1	5	5	5
64	4	4	6	5	5	5	3	1	3	3	1	3	2	2
65	2	5	6	5	5	3	2	1	3	2	2	6	4	5
66	4	4	6	4	4	5	3	1	3	3	2	3	1	2
67	4	4	6	4	6	3	3	1		4	2	4	2	3
68	4	4	3	4	4	4	4	1	2	3	3	2	1	3
69	6	3	6	6	6	3	3	1	1	3	1	3	2	3
70	6	6	6	4	6	3	2	1	2	4	3	5	2	4
71	5	5	2	4	4	5	2	1	3	2	2	4	3	5
72	5	4	5	5	6	4	3	2	2	3	2	3	2	5
73	2	2	6	5	6	6	6	1	3	1	1	3	1	3
74	5	5	6	2	5	2	2	1	2	5	5	6	2	5
75	3	3	5	3	4	3	4	1	3	3	2	3	2	3
76	4	5	6	5	6	5	4	1	2	3	1	4	3	5
77	6	6	4	4	6	5	3	1	1.5	4	3	2	1	3
78	5	5	4	5	5	5	2	1	1	3	2	2	2	3
79	5	5	6	5	6	5	2	1	2	4	3	5	2	3
80	5	3	3	5	5	3	3	1	2	4	3	2	2	3
81	6	6	4	4	6	4	3	1	2	5	3	3	2	4

id	c34a-cmeals fruit	c34b-cmeals veggies	c34c-cmeals dairy	c34d-cmeals protein	c34e-cmeals carbos	c34f-cmeals sweets	c34g-cmeals snacks	c34h-cmeals diet food	c35-csnacks eat	c36a-csnacks fruit	c36b-csnacks veggies	c36c-csnacks dairy	c36d-csnacks protein	c36e-csnacks carbos
82	6	5	6	6	6	5	3	1	3	5	2	3	3	5
83	2	4	3	5	3	6	5	3	4	2	2	2	2	3
84	5	5	6	6	6	2	3	1	1	3	3	3	3	2
85	4	5	6	3	3	2	2	1	2	3	2	5	1	2
86	4	1	5	5	3	6	2	1	3	3	1	5	2	2
87	6	5	6	6	6	4	3	1	2	5	5	5	1	5
88	3	4	6	5	6	5	3	1	2	2	1	5	1	3
89	5	6	5	3	6	5	1	1	2	3	3	2	3	5
90	5	6	4	5	6	4	4	1	3	4	4	3	3	3
91	5	5	5	4	5	4	3	1	2	3	3	1	1	1
92	4	3	6	2	6	6	2	1	3.5	3	1	6	1	6
93	3	4	4	5	5	4	3	1	2	3	2	3	2	3
94	6	5	6	6	6	5	2	1	2	5	1	5	1	2
95	4	4	6	5	6	5	5	1	2	4	2	5	1	5
96	4	4	6	6	6	3	5	1	1	1	1	1	1	1
97	3	3	4	4	5	4	4	1	3	3	2	3	2	3
98	5	5	6	5	6	4	3	1	1	3	2	3	2	6
99	5	5	5	5	5	3	3	1	1	4	4	5	3	3
100	4	5	5	5	5	4	3	1	3	3	3	2	2	4
101	5	4	6	5	6	3	2	1	2	3	2	2	1	3
102	4	5	5	5	5	5	3	1	3	4	4	5	2	4
103	4	2	5	5	6	4	4	1	2	3	2	1	2	3
104	2	4	6	4	5	3	2	1	1	1	1	4	1	1
105	2	3	6	6	6	6	4	1	2	3	2	3	1	3
106	3	6	6	6	6	3	3	2	0.7	4	3	2	2	3
107	6	6	6	6	6	6	6	1	4	6	5	6	3	4
108	6	5	6	6	6	4	4	1	2	5	3	3	1	1
109	6	5	6	5	5	4	2	1	2	5	2	5	2	3
110	5	5	5	6	5	3	3	2	2	4	3	3	2	3
111	6	5	6	3	6	4	2	1	2	4	1	3	1	4
112	6	3	6	6	6	6	2	1	3.5	5	2	4	2	3
113	1	3	6	5	6	4	3	1	2	1	2	5	2	2
114	4	2	6	5	6	6	3	1	3	3	3	3	1	1
115	4	3	4	5	5	4	3	1	2	3	3	3	2	3
116	5	4	4	5	5	4	3	1	1	5	1	2	1	2
117	5	5	5	5	5	4	3	1	1	5	5	5	5	5
118	6	5	6	5	6	3	3	1	2	5	5	6	3	6
119	5	5	6	5	6	4	3	1	3	3	2	4	2	4
120	6	6	5	5	5	3	3	1	1	3	3	4	3	5
121	5	5	6	5	6	4	3	1	2.5	6	4	4	3	3
122	6	5	4	5	6	1	1	1	2.5	4	3	3	1	3
123	6	5	2	6	6	3	3	1	2	5	3	3	3	4
124	4	3	4	4	6	4	3	2	1	4	1	2	2	1
125	6	5	6	6	6	4	2	1	3	4	3	5	3	6
126	4	4	5	3	5	3	2	2	1	2	2	2	2	2
127	5	5	6	4	6	3	3	1	2	5	3	3	2	3

id	c36f-csnacks sweets	c36g-csnacks snacks	c36h-csnacks diet food	c37-restriction 37	c38-restriction 38	c39-restriction 39	c40-restriction 40	c41-restriction 41	c42-restriction 42	c43-restriction 43	c44-pressure44	c45-pressure45	c46-pressure46	c47-pressure47
1	3	2	1	5	5	2	1	1	2	1	1	1	1	1
2	3	3	1	5	4	2	1	4	4	2	1	1	1	1
3	3	3	1	5	4	3	2	1	5	3	1	3	1	4
4	4	3	1	4	5	3	4	1	3	3	2	2	1	4
5	5	1	1	5	3	5	1	1	5	5	2	3	4	1
6	3	4	1	4	3	2	5	4	5	3	4	4	2	2
7	4	5	1	4	4	2	2	2	4	4	1	1	2	1
8	3	3	1	4	4	3	4	2	3	4	1	5	2	4
9	5	4	1	1	2	5	3	1	2	3	3	5	4	5
10	3	3	2	3	2	1	1	1	3	3	1	1	1	1
11	3	4	1	2	2	4	2	2	1	4	1	1	1	1
12	5	4	2	5	5	4	3	3	3	5	5	3	3	5
13	4	3	1	2	2	1	4	4	4	5	2	3	4	2
14	3	3	2	5	5	5	5	4	4	5	1	1	1	1
15	5	5	1	1	2	2	4	1	3	4	2	4	4	1
16	3	2	1	5	2	4	1	1	3	2	1	5	3	2
17	4	2	1	5	4	3	5	1	4	3	4	4	1	3
18	6	4	1	4	3	3	2	1	2	2	1	1	1	1
19	5	1	1	2	2	1	1	1	2	1	1	1	1	1
20	3	3	1	3	3	4	1	1	1	2	1	1	3	1
21	6	4	1	4	2	2	5	4	5	4	4	5	3	4
22	4	3	1	5	5	4	4	4	3	3	2	1	1	1
23	5	4	1	5	2	5	1	1	5	5	2	1	1	1
24	5	5	3	5	5	5	3	2	1	1	1	1	1	1
25	4	4	1	2	1	2	2	3	2	2	5	2	5	3
26	3	3	1	5	5	4	4	1	5	5	3	2	1	1
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28	3	3	1	5	5	3	5	3	5	5	2	5	3	3
29	4	2	1	4	4	2	1	1	2	1	4	4	2	1
30	2	2	1	1	1	1	1	1	1	1	1	4	1	1
31	4	4	1	5	5	3	1	1	2	2	1	1	1	1
32	2	2	2	5	5	4	5	2	3	5	3	1	1	2
33	3	2	1	4	4	3	5	1	4	4	1	3	1	1
34	3	2	1	5	4	4	4	2	4	4	3	2	2	1
35	3	3	1	4	3	2	1	2	4	3	4	2	2	2
36	4	4	1	4	2	3	1	3	4	3	4	4	4	4
37	3	3	1	1	1	1	1	1	2	1	2	1	1	1
38	4	3	1	4	3	3	4	1	3	3	2	1	1	1
39	3	2	1	5	5	4	2	1	2	4	1	1	1	1
40	3	3	1	2	2	2	1	1	1	2	4	3	4	4
41	3	3	1	4	3	1	1	3	5	1	1	1	3	3
42	3	3	1	5	5	3	5	1	4	3	2	5	1	1
43	2	4	1	3	5	3	2	2	4	3	1	1	1	1
44	3	3	1	1	1	1	1	1	4	2	4	1	5	1
45	3	3	1	5	3	3	4	2	2	2	4	3	1	1
46	3	3	1	1	1	1	1	1	2	1	1	5	5	5
47	5	3	1	5	5	5	1	1	4	4	5	2	4	1
48	3	3	1	5	4	4	5	3	5	5	1	5	3	1
49	3	2	1	5	4	1	4	1	1	1	1	1	1	1
50	2	2	1	4	4	3	1	2	1	1	1	3	1	1
51	4	1	5	5	5	5	5	1	5	5	2	3	2	3
52	5	4	1	5	4	4	1	3	4	4	2	2	4	4
53	3	1	1	2	2	2	1	1	1	1	1	4	4	4
54	6	6	1	5	5	3	4	1	5	5	4	3	1	1
55	6	5	1	3	3	2	4	4	5	4	2	4	1	1
56	3	2	1	5	4	3	5	2	5	3	4	1	1	1
57	5	5	2	3	3	2	3	2	3	2	4	5	4	4
58	3	3	1	3	3	3	3	1	2	2	3	2	4	3
59	2	2	1	5	5	4	3	2	2	2	2	2	1	2
60	3	4	1	5	5	5	1	1	1	1	1	5	1	1
61	3	4	1	5	4	3	5	4	5	3	1	3	1	2
62	3	3	1	4	2	2	2	3	4	2	1	3	4	2
63	2	2	1	5	4	2	1	1	1	5	2	5	1	5
64	4	3	1	3	3	3	4	1	3	3	1	4	4	2
65	2	2	1	5	5	2	1	1	2	3	1	5	4	2
66	4	2	1	5	5	5	4	1	5	5	1	3	2	1
67	3	3	1	5	5	4	5	1	5	4	1	1	1	1
68	4	4	1	5	1	4	4	4	5	5	4	4	4	3
69	3	3	1	4	5	2	4	1	2	1	1	1	4	1
70	3	3	1	2	1	1	1	1	1	1	2	1	1	1
71	5	2	1	5	5	5	3	4	5	5	1	1	1	1
72	4	3	1	5	4	3	2	1	5	4	1	1	2	1
73	5	5	1	5	5	5	1	2	4	4	2	1	1	1
74	2	3	1	5	5	4	5	1	5	5	5	5	1	5
75	2	4	1	2	3	3	3	1	4	3	2	4	4	1
76	3	4	1	5	5	5	5	1	5	5	1	1	1	1
77	4	3	1	5	5	1	1	1	1	1	1	1	1	1
78	4	2	1	2	2	1	1	2	2	3	4	4	4	4
79	5	2	1	3	4	1	3	1	4	1	1	4	1	1
80	3	3	1	5	1	5	5	3	5	5	1	5	1	3
81	3	3	1	4	1	1	1	1	1	2	1	3	4	2

id	c36f-csnacks sweets	c36g-csnacks snacks	c36h-csnacks diet food	c37-restriction 37	c38-restriction 38	c39-restriction 39	c40-restriction 40	c41-restriction 41	c42-restriction 42	c43-restriction 43	c44-pressure44	c45-pressure45	c46-pressure46	c47-pressure47
82	5	3	1	5	5	5	5	3	5	5	4	1	2	2
83	6	5	3	5	5	5	5	4	5	5	1	1	3	1
84	2	3	1	5	5	5	5	1	5	5	3	1	4	2
85	2	2	1	5	5	2	1	1	2	2	5	1	1	1
86	5	2	1	5	5	4	5	1	5	4	1	1	1	1
87	4	3	1	2	1	2	1	1	1	1	4	1	1	1
88	4	2	1	5	4	4	1	1	4	4	2	1	2	1
89	3	3	1	5	5	4	5	1	4	4	1	1	1	1
90	4	4	1	5	5	5	5	1	2	2	1	1	1	1
91	3	3	1	2	2	1	1	2	1	1	1	1	1	1
92	5	1	1	5	3	4	3	1	4	4	1	1	1	1
93	4	3	1	4	2	2	1	1	2	2	1	1	2	1
94	5	2	1	3	3	3	1	3	1	1	1	4	4	1
95	5	4	1	5	5	4	3	2	5	3	3	5	4	5
96	2	5	1	4	1	1	1	1	1	3	3	2	1	1
97	4	4	1	4	1	1	1	3	3	1	3	4	3	3
98	3	3	1	4	4	2	1	1	1	1	2	1	4	1
99	2	1	1	5	5	5	5	1	5	5	1	1	1	1
100	4	4	1	5	5	5	5	4	4	4	5	4	3	1
101	3	2	1	5	4	1	1	1	2	2	1	1	1	2
102	4	3	1	5	5	4	5	1	5	5	4	4	4	3
103	3	5	1	5	4	4	4	1	5	4	4	5	5	4
104	3	2	1	5	5	3	5	1	4	3	3	5	4	5
105	4	4	1	5	5	5	3	3	5	5	1	1	1	1
106	1	2	1	4	3	3	4	1	4	3	2	2	2	1
107	4	6	1	5	5	4	1	4	5	2	1	1	1	1
108	3	5	1	5	1	1	5	1	4	1	4	5	4	4
109	3	1	1	5	1	3	3	1	3	3	2	2	1	2
110	3	3	2	4	3	2	4	2	4	3	2	3	4	4
111	3	2	1	5	5	2	5	1	5	2	1	1	1	1
112	5	2	1	5	4	4	5	1	4	4	1	1	1	1
113	4	3	1	4	4	4	5	2	5	5	1	1	1	1
114	5	3	1	5	4	4	5	5	5	5	2	4	4	4
115	4	3	1	5	5	5	1	1	3	5	5	3	3	1
116	4	3	1	5	4	4	5	1	5	5	5	5	5	5
117	4	3	1	3	3	3	2	1	4	4	5	3	1	4
118	2	3	1	5	5	4	5	1	4	4	1	4	1	2
119	4	3	1	4	2	3	2	2	4	4	1	3	2	3
120	2	2	1	3	4	2	1	4	4	2	1	1	1	1
121	2	4	1	5	5	4	3	1	1	1	1	5	3	3
122	4	3	1	2	1	1	1	1	4	1	1	4	4	3
123	3	4	1	1	1	1	1	1	1	1	2	1	1	1
124	4	3	2	2	2	2	2	1	4	4	3	2	1	1
125	3	2	1	2	2	2	5	5	2	2	5	1	2	1
126	4	3	2	3	4	3	3	4	3	4	4	4	4	5
127	3	3	1	3	4	4	3	2	4	4	3	1	2	1

id	c48-monitoring48	c49-monitoring49	c50-monitoring50	c51-ctoo many sweets	c52-ctoo many high fat	c53-ctoo many junk	c54-ctoo many favorites	c55-ctoo many times	c56-ctoo few times	c57-ctoo much food	c58-cenough food	c59-cebehaviors healthy	c60-cebehaviors satisfied	p61-pphysical limitations
1	4	4	4	4	4	4	4	5	4	5	5	4	4	2
2	4	4	4	2	4	3	4	4	4	3	4	4	4	2
3	5	5	3	5	4	4	3	5	5	5	4	4	4	2
4	2	3	4	4	4	3	4	4	4	4	4	3	3	2
5	5	5	5	3	4	3	3	4	5	5	5	4	4	2
6	4	4	3	3	3	4	5	5	3	5	3	3	3	2
7	4	3	4	3	4	3	4	5	5	5	5	4	4	2
8	4	4	4	3	4	3	4	4	3	5	3	4	4	2
9	4	4	4	3	3	2	4	4	2	4	2	4	4	2
10	3	3	3	4	4	4	4	4	5	5	5	4	4	2
11	3	3	3	3	3	3	3	4	4	5	5	4	4	2
12	4	3	3	2	3	3	2	3	5	5	5	4	4	2
13	4	4	4	3	2	3	1	5	5	5	5	3	3	2
14	5	5	5	2	3	4	3	5	4	4	4	3	3	2
15	5	5	4	5	5	5	3	5	5	5	·5	5	4	2
16	5	5	3	4	3	4	4	4	4	4	5	4	5	2
17	4	3	3	3	4	4	3	5	4	5	3	3	2	2
18	3	3	3	3	3	3	4	4	4	5	5	4	4	2
19	4	2	2	5	4	5	5	5	3	5	5	4	4	1
20	5	5	4	5	5	5	4	5	4	5	4	4	4	2
21	4	4	4	3	3	3	4	5	2	4	2	3	2	2
22	4	4	4	3	3	3	3	4	5	4	4	4	4	2
23	5	5	4	2	3	3	3	5	4	5	4	4	4	2
24	3	3	3	2	2	2	2	3	5	1	5	3	2	1
25	3	2	1	3	5	4	4	4	3	5	4	4	4	2
26	3	3	4	5	3	3	3	3	5	2	5	2	1	2
27	4	1	4	3	4	5	3	5	5	4	5	4	4	2
28	4	4	4	4	4	4	4	5	3	5	3	4	3	2
29	5	5	5	3	3	4	4	5	3	5	3	4	3	2
30	4	4	3	5	5	5	3	5	3	5	3	4	4	2
31	4	4	4	4	3	4	3	3	4	3	5	3	3	1
32	4	4	4	3	3	4	4	3	4	4	4	4	3	2
33	5	5	5	4	4	4	3	4	4	4	4	4	4	2
34	4	4	3	3	3	3	3	4	3	4	4	4	4	2
35	4	4	3	3	3	4	4	4	4	4	4	4	4	1
36	4	4	3	3	4	3	4	5	3	4	3	4	5	2
37	2	2	2	3	4	4	5	5	5	5	5	5	5	2
38	4	3	2	3	4	4	4	5	5	5	5	3	3	2
39	4	4	4	4	3	4	3	4	5	4	5	4	3	2
40	2	3	2	5	4	4	5	5	4	4	3	4	4	2
41	5	5	1	3	5	4	5	5	5	5	3	4	4	2
42	4	4	4	4	4	4	4	5	5	5	5	4	5	1
43	4	4	4	4	3	3	4	3	5	3	5	3	3	2
44	3	3	3	4	4	4	4	5	5	5	5	4	4	2
45	4	4	1	4	5	4	4	5	5	5	5	4	4	2
46	2	2	2	4	4	4	5	5	1	5	1	3	2	2
47	4	4	4	3	4	3	3	5	5	5	5	4	4	2
48	4	4	2	3	3	3	2	3	4	4		3	1	2
49	4	4	3	3	4	4	5	5	5	5	5	4	4	2
50	4	2	2	4	4	4	4	5	5	5	5	5	5	2
51	5	5	4	2	3	2	2	4	3	4	3	4	3	1
52	5	5	5	3	3	3	3	4	4	5	5	4	4	2
53	1	1	1	5	5	5	3	3	3	5	3	4	4	1
54	5	5	5	1	3	2	2	1	4	1	5	3	1	2
55	4	3	2	2	4	3	3	5	5	5	5	4	4	2
56	4	5	3	4	3	3	3	3	5	3	5	4	4	2
57	4	4	3	3	2	3	2	4	3	2	3	4	5	2
58	4	4	4	3	4	3	4	4	4	5	5	4	4	2
59	5	4	5	4	3	4	4	4	5	3	4	4	4	2
60	5	5	4	3	4	3	4	5	5	4	4	4	4	2
61	5	5	4	2	3	2	4	5	3	5	4	3	2	1
62	3	3	2	3	4	3	3	4	4	4	3	3	3	2
63	5	5	4	4	3	5	3	5	3	5	4	4	4	2
64	3	3	2	3	3	3	3	3	4	3	4	3	3	2
65	4	4	4	4	4	4	3	5	4	5	4	4	4	2
66	4	3	4	3	3	4	3	4	4	4	4	4	4	2
67	5	5	5	3	3	3	3	4	4	4	4	4	4	2
68	4	4	2	2	4	3	3	5	4	5	3	4	4	2
69	4	4	4	3	4	3	4	5	5	5	5	4	4	2
70	2	2	2	4	5	5	5	5	5	5	5	5	5	2
71	5	2	4	2	2	2	2	4	4	4	4	4	3	1
72	4	4	3	1	3	3	3	4	5	4	5	4	4	2
73	4	4	4	3	3	3	3	2	5	2	5	3	3	2
74	5	4	4	4	3	4	2	3	5	2	5	4	4	2
75	3	3	2	4	3	3	3	4	4	4	4	3	4	1
76	4	4	3	1	2	2	2	4	4	3	5	3	2	2
77	3	3	3	3	3	3	5	4	5	4	5	4	4	2
78	4	4	4	4	4	4	4	4	4	4	4	4	4	2
79	5	5	5	4	5	5	5	5	5	5	5	4	4	1
80	5	5	1	3	5	4	5	5	5	5	5	3	4	2
81	3	2	1	3	5	4	4	5	4	·5	3	4	4	2

id	c48-monitoring48	c49-monitoring49	c50-monitoring50	c51-ctoo many sweets	c52-ctoo many high fat	c53-ctoo many junk	c54-ctoo many favorites	c55-ctoo many times	c56-ctoo few times	c57-ctoo much food	c58-cenough food	c59-cebehaviors healthy	c60-cebehaviors satisfied	p61-pphysical limitations
82	4	5	4	3	3	4	3	4	3	4	4	4	4	1
83	3	3	3	2	2	1	2	1	5	3	5	1	1	2
84	5	5	5	4	4	4	4	5	5	5	5	5	5	1
85	1	3	2	5	3	4	5	5	5	4	5	4	4	1
86	4	4	3	1	2	1	3	4	4	3	4	3	1	2
87	5	5	5	4	4	4	3	5	5	5	5	4	4	2
88	4	4	4	3	3	3	3	5	5	5	5	4	4	2
89	4	4	4	2	3	3	3	4	5	3	5	4	3	2
90	4	4	4	4	4	3	3	4	5	5	5	4	4	2
91	2	2	2	4	4	4	5	5	5	5	5	5	5	2
92	4	1	1	3	4	3	2	5	5	5	5	3	3	2
93	4	4	4	3	4	4	4	4	5	5	5	4	4	2
94	5	5	5	5	5	5	5	5	5	5	5	4	4	2
95	5	5	5	3	4	4	3	5	2	5	2	4	4	2
96	5	5	3	5	4	5	4	5	5	5	5	4	4	2
97	4	4	1	3	5	3	5	5	3	5	3	4	4	2
98	4	4	4	3	4	4	4	5	4	5	5	4	5	2
99	5	5	5	3	3	3	4	5	5	4	5	4	4	2
100	5	5	5	4	4	4	3	5	5	5	5	4	4	2
101	5	5	5	4	3	4	2	5	4	5	4	4	4	2
102	5	5	5	3	4	3	3	5	4	4	3	4	4	2
103	4	4	4	4	2	2	2	5	4	5	5	3	3	2
104	4	4	4	3	4	4	2	4	3	5	5	4	4	2
105	4	4	4	1	1	1	1	1	5	1	5	2	1	1
106	4	4	4	3	3	4	3	5	5	5	4	4	4	2
107	4	4	4	2	2	3	3	4	5	4	5	4	4	2
108	4	4	2	3	5	4	5	5	3	5	3	4	4	2
109	4	4	2	4	5	5	4	5	4	5	4	4	4	2
110	3	3	4	2	3	3	3	4	3	3	3	4	4	2
111	4	4	4	3	4	4	4	4	5	4	5	4	4	2
112	4	4	3	3	3	3	5	5	5	5	5	4	4	2
113	2	3	3	4	3	3	4	5	5	5	5	2	2	2
114	4	4	4	3	4	3	3	3	5	5	3	3	2	1
115	5	5	5	3	4	4	4	3	5	3	5	4	5	2
116	1	1	1	4	5	4	4	5	4	5	2	4	4	2
117	2	2	2	4	4	4	2	5	4	5	4	4	3	2
118	5	5	4	5	4	5	4	5	5	5	5	4	4	2
119	4	4	4	3	4	3	3	4	3	5	3	4	4	2
120	5	5	5	4	4	5	4	4	4	3	4	4	4	2
121	4	4	2	4	4	4	4	4	4	4	3	4	4	2
122	1	1	1	3	5	3	5	5	5	5	3	4	5	2
123	5	5	5	4	3	4	4	4	4	5	3	5	5	2
124	4	4	4	3	4	4	4	5	5	4	5	2	2	2
125	5	5	5	3	3	4	4	4	5	4	5	4	4	2
126	3	2	2	4	4	4	4	5	4	5	3	3	3	2
127	4	4	4	3	3	4	2	3	4	3	4	3	3	2

id	p61a-limitations text	p62-psleep weekday	p63-psleep weekend	p64-pmod act weekday	p65-pmod act weekend	p66-phard act weekday	p67-phard act weekday	p68-pvery hard act weekday	p69-pvery hard act weekend	p70-pact comparison	p71-ptv weekday	p72-ptv weekend	p73-penough pa	p74-psatisfied pa
1		8	8	5	2	0	1	2	0	3	2	3	4	4
2		8	9	0	1	1	1	0	0	3	3	3	2	1
3		6	6	2.5	1.5	0	0	2	2	3	5	5	3	3
4		5	5	6	2	4	2	0	0	1	5	5	4	4
5		9	8.5	12.5	5	0	0	0	0	1	2	2	4	4
6		7.75	10.5	7.5	2	0	0	0	0	3	3	2	3	3
7		8	7	4.5	1	1.5	0	0	0	3	3	3	4	4
8		7	8	7	4	0	1	0	0	3	2	3	3	3
9		7.5	8	4	2	2	3	0	0	3	2	1	3	3
10		7	9	15	4	6	3	0	2	1	3	2	3	2
11		7	8	10	5	2	2	0	0	3	2	4	3	3
12		8	9	2	3	1	1	0.5	1	2	7	6	1	1
13		6	6	2	2	0	1	0	0	3	4	3	1	1
14		9	9	7.5	3	5	3	0	0	2	2	2	3	3
15		8	8	10	4	2	0	2	0	3	2	3	4	4
16		8	6	40	10	35	14	8	4	2	3	5	4	4
17		7	8	30	3	5	0	3	0	3	3	4	4	4
18		7	6	3	0	1	2	0	0	3	2	2	4	4
19	knee prob	7	6	2.5	2	2.5	0	2	0	3	1	2	5	5
20		7.5	7	3	3	0	0	0	0	3	2		3	2
21		6	6	0.5	0.16	1.66	0.66	0	0	3	4	3	4	4
22		7	6	5	2	5	0	0	0	2	4	5	4	4
23		7	7.5	15	4	5	2	2	1	2	3	3	3	3
24	back prob	7	7	0	0	0	0	0	0	3	2	2	2	1
25		6	7	5	5	1	2	0.5	1	3	5	5	3	3
26		8	8	4	3	0	0	0	0	3	5	2	1	1
27		6	8	5	3	5	2	5	1	3	3	3	4	4
28		5.75	7	3	1	0	0	2	1	2	2	2	3	2
29		8	8	5	6	0	2	0	0	3	2	2	4	4
30		7.5	8	2	0	0	0	2	0	3	2	2	1	1
31	bad back	6	6	6	8	2	0	2	1	2	2	1	2	1
32		9	8	1	1	1	2	2	0	2	2	2	3	4
33		8	9	10	4	2	3	2	2	3	2	2	3	3
34		8.5	8.5	10	6	2	4	1	1	3	2	3	2	2
35	femoral-pa	7.75	7	1	3	0	0	1	0	3	2	3	2	2
36		6	6	4	2	1	0	0	0	1	2	3	2	2
37		7	7	0	0	20	5	0	0	1	6	7	4	3
38		7.75	8.25	5	4	1	1	0	0	2	3	3	3	3
39		8	7.5	2	1	2	0	2	0	3	2	2	3	3
40		6.5	8	8	3	1	0	8	5	3	2	3	5	5
41		8	8	14	4	7	2	1	0.5	3	1	1	4	4
42	torn media	6	6	3	6.5	2	3	0	0	3	5	7	2	1
43		7.5	8	4	1	0.5	0	0	0	2	7	4	2	2
44		8	9	8	8	4	2	4	0	3	3	5	4	4
45		6	7.5	2	0	0	0	0	0	1	4	4	1	1
46		6.25	9	2	2	0	0	0	0	2	2	3	2	2
47		7	7.5	3	3	3	0	0	0	3	6	4	2	1
48		6.4	8	6	4	0	0	0	0	3	2	6	2	1
49		8	8	3	2	0	0	0	0	3	4	2	2	2
50		8	8.5	7	4	0	0	3	2	3	2	3	4	4
51	uterine fib	7	7	7	2	1	1	0	0	3	2	2	2	2
52		9	8	7	1	3	1	0	0	3	6	5	3	3
53	pregnancy	7	7	15	6	15	4	10	4	3	4	4	4	4
54		7	7	4	1	2	1	1	0	3	4	4	3	2
55		7.15	9	17	7	3	3	3	1	3	3	5	4	4
56		6	7	6	2	0	0	0	0	2	4	6	2	2
57		6	7	25	16	10	8	4	2	1	6	4	4	4
58		8	9	2	5	0	0	0	0	3	2	2	2	2
59		7	8	35	6	5	0	2	1.5	2	3	3	4	4
60		7.5	7	2	4	0	3	0	0	1	3	4	3	3
61	asthma	6	7.5	7	4	1	1	0	0	2	7	6	3	2
62		7	8	30	8	15	8	1	1	3	2	2	3	3
63		8	8	30	3	25	10	5	15	2	1	2	4	4
64		7.5	7	15	3	2.5	0	0	0	2	4	5	4	4
65		7.2	5.5	10	10	3	2	0.5	0.5	2	3	4	4	3
66		7.5	8	16	8	4	1	0	1	3	3	2	5	5
67		8.5	9.5	4.5	3	3	0	0	0	3				
68		7	7	2	5	2	0	4	0	3	2	2	5	5
69		7	9	8	3	1	0	0	0	3	3	3	4	4
70		7	8	10	3	10	2	8	2	3	2	3	4	4
71	knee & sh	9	10	2	0	0	0	0	0	2	3	4	2	2
72		8	8	2.5	0	0	0	0	0	3	6	7	2	2
73		7.5	7.5	7	2	0.5	0	0	0	3	5	3	3	3
74		7	7	12	2	4	1	0	0	3	5	6	3	4
75	knee	7.5	8.5	13	15	5	8	1	2	2	3	2	3	3
76		6.5	7	2	1.5	0	0	0	0	3	2	2	2	2
77		8	10	3	3	0	0	0	0	3	2	3	1	1
78		8	8	40	20	5	2	8	4	2	2	2	4	4
79	tendonitis	8	8	5	2	0	0	0	0	2	3	2	3	3
80		8	8	14	4	7	2	1	0.5	3	1	1	4	4
81		7	8.5	7	4	1	1	3	2	3	2	3	4	4

id	p61a-limitations text	p62-psleep weekday	p63-psleep weekend	p64-pmod act weekday	p65-pmod act weekend	p66-phard act weekday	p67-phard act weekday	p68-pvery hard act weekday	p69-pvery hard act weekend	p70-pact comparison	p71-ptv weekday	p72-ptv weekend	p73-penough pa	p74-psatisfied pa
82	asthma	6.5	7.5	55	23	8	0	0	0	3	2	1	2	2
83		10	10.5	5.5	2.5	1.5	0	1.5	0	1	4	6	2	2
84	bronchitis	5	5	12	6	2	1	0	0	3	3	4	5	5
85	pregnant	7	8	2	1	0	0	0	0	2	3	2	2	1
86		8.5	7.5	2	6	0	0	0	0	3	5	6	3	3
87		8	8.5	4	2	0.5	0.25	0	0	2	4	4	4	4
88		8	7.5	2.5	1.5	0	0	0	0	2	3	2	3	2
89		7.5	7.5	4	1	0.5	0	0	0	3	2	3	5	5
90		7	6	3	6	3	2	1	0.5	3	2	2	5	4
91		7	9	40	10	10	10	7	10	3	2	2	4	4
92		8	8	5	8	2	2	0.5	0.5	1	2	4	4	3
93		6	7	10	0	0	0	0	0	3	3	4	3	3
94		8	7	7	3	0	0	6	0	3	3	3	5	5
95		7	8	2.5	2	2	1	2	1	3	5	4	3	3
96		7	8	18	12	30	4	0	0	3	6	7	5	5
97		6	6	8	2	1	0	0	0	2	2	3	2	2
98		7.5	8.5	0.5	0.5	0	0	0	0	3	2	2	2	1
99		8	8	5	3	0	0	0	0	3	3	3	4	2
100		7	8	15	6	3	3	0	0	1	6	6	2	2
101		7	8	24	5	10	0	4	0	3	2	3	3	3
102		7.5	7.5	15	6	0	0	0	0	1	3	3	3	3
103		7	8	10	4	3	1	0	0	2	3	3	1	1
104		6	9	3	2	0	0	0	0	3	7	6	1	1
105	two back s	6	5.5	1	1	0	0	0	0	3	7	4	1	1
106		7	9	0	7	0	1	3.5	0	3	2	2	4	4
107		7.5	8	6	3	3	1	6	1	3	4	3	4	5
108		8	8	15	8	0	0	0	0	3	2	2	4	4
109		7	8	5	2	3	2	2	1	2	1	3	4	4
110		7.5	7	0	2	0	0	0	0	2	3	5	3	2
111		6.25	7	2	1	0	0	0	0	3	1	2	2	2
112		7	7	4.5	2.5	4	1.5	1	0.5	3	2	2	4	3
113		5.5	7	2	2	0	0	0	0	3	2	2	2	2
114	knee	7.5	8	2.5	1	0	0	0	0	3	1	4	4	2
115		7	7	10	6	0	0	0	0	3	3	4	4	4
116		8	7	0	0	0	0	0	0	3	3	3	3	2
117		6.5	6	1	0.5	0	0	1	0	3	7	6	2	3
118		8	8	20	4	3	0	0	0	3	3	3	4	4
119		8.5	8.5	6	0.5	2	0	2	0	3	4	3	4	4
120		7	5.5	10	4	5	1	3	0.5	3	3	4	3	4
121		8	10	4	3	0	1	0	0	2	3	3	4	3
122		7.5	8	0	0	0	0	0	0	2	2	2	3	3
123		8.5	9	2.5	6	1.5	0	0	0	3	2	3	5	5
124		6.5	6	15	10	0	0	0	0	1	2	3	3	2
125		7.5	6.5	7.5	4	2	0	4	1	3	2	2	4	4
126		8	8.5	0	2	0	0	0	0	3	6	2	1	1
127		6.5	8	2	2	0	0	0	0	3	2	3	2	1

id	c75-csleep weekday	c76-csleep weekend	c77-cmodact weekday	c78-cmodact weekend	c79-chardact weekday	c80-chardact weekend	c81-cveryhard act weekday	c82-cveryhard act weekend	c83-cact comparison	c84-ctv weekday	c85-ctv weekend	c86-cregulate sedentary act	c87-cencourage pa	c88-cact w/ child
1	9	9	10	2	3	0	4	2	3	3	3	4	5	4
2	11	11	-1	2	1	1	1	2	3	2	4	5	4	3
3	9	8	9.5	4.5	5.5	3.5	5	2	3	3	5	5	5	4
4	8	9	7	5	2	0.5	2	0.5	1	4	6	3	4	4
5	10	10	5	4	3	0	0	0	3	3	4	5	4	3
6	8.5	9	20	8	10	3	2	0.5	1	4	5	3	4	3
7	10	9	10	8	8	5	3	4	3	4	4	3	4	3
8	9.5	10	10	9	8	6	8	8	3	3	5	4	5	3
9	8	6.75	1	2	2.5	1	3.5	1	3	5	6	3	5	5
10	11	8	10	8	5	3	4	1	3	3	2	4	2	2
11	9	10	17	8	3	2	2	3	3	4	4	3	5	5
12	9.5	9	3	4	2	2	1	1	2	3	3	5	4	3
13	10	9	5	4	0	0.5	0	1	3	3	4	4	4	2
14	9	8	5	2	0	2	0	0	1	2	2	5	5	3
15	9	9	10	10	5	4	0	0	3	2	4	5	5	5
16	10	7.5	2	6.5	10	13	8.5	9	2	6	5	5	5	4
17	9	9	7.5	4	3	0	0	0	3	4	5	3	4	4
18	9	10	1	2	1	1	0	0	3	3	3	3	4	3
19	10	8	10	1	4	0.5	0.5	0	3	4	4	5	4	3
20	10.75	10	4	2.5	2	1	2	0	3	2	3	5	4	4
21	10	10	3	0	0	0	0	0	1	6	7	4	3	2
22	10	10	7	5	5	3	0	0	3	4	5	3	4	3
23	8.5	8.5	14	10	15	6	10	5	1	3	4	4	5	4
24	9	10	5	2	4	1	5	2	3	3	3	3	4	1
25	9.5	9.5	10	8	5	4	5	2	3	3	6	4	5	3
26	9	10	1.5	1	2	0	0	0	3	2	5	3	5	2
27	10	11	5	4	4	2	5	3	3	1	2	4	4	4
28	10.75	10	9	6	4	0	0	0	2	2	3	5	5	5
29	9	9	8	6	3	3	1	2	3	2	3	3	4	3
30	9	8.5	3	1	0	0	0	0	3	6	2	4	3	3
31	9.5	11	10	7.5	2.5	2	0	0	3	2	3	2	5	4
32	10	8	4	0	2	2	0	0	3	3	3	4	4	3
33	10	11	8	4	4	2	3	2	3	2	2	3	5	4
34	9.5	10	16	8	4	4	2	3	3	2	3	2	3	2
35	10	11	7	2	2	1	0	0	3	3	3	3	3	2
36	9	9.5	9	2	3	0	0	0	2	2	4	4	3	3
37	9	10	5	3	0	0	0	0	3	2	5	3	2	3
38	10	10	14	4	5	1	0	0	3	2	3	5	4	4
39	9.5	8.5	4	1	4	3	0.5	0.5	3	4	6	3	4	2
40	9	8	4	5	1	0	0	2	3	2	3	5	5	5
41	11	11	10	2	2.5	2.5	0	0	3	1	1	1	4	3
42	10	8	10	10	8	8	4	0	1	2	3	5	5	4
43	9	8	4.5	2	3	2	1	0	3	7	6	3	4	3
44	9	10	7	4	4	2	2	1	3	2	4	5	5	4
45	9	8	5.5	6	2	1.5	0.5	0.5	2	2	3	5	5	3
46	8	8	5	2	0	0	0	0	3	4	5	3	3	3
47	10	10.5	5	2	1	2	0	0	3	3	5	3	3	4
48	9.5	7	10	1	4	0	0	0	2	2	4	4	5	3
49	9	10	4	4	3	2	6	2	3	4	4	3	5	2
50	9.5	9.5	5	3.5	3	2	0	0	3	2	3	4	4	4
51	10	10	5	2	1	1	1	1	3	2	3	4	5	4
52	9.75	10	6	0.5	0.5	0.5	0	0	2	3	4	2	5	3
53	10	10	10	8	5	4	5	4	3	3	5	2	4	3
54	9	10	4.5	10	7.5	4	2	0.5	3	3	5	5	5	4
55	9.5	9	18	10	6	6	5	1	3	3	5	3	5	4
56	10	8	17.5	4	3	2	1	0	2	3	5	2	5	2
57	8	7.5	15	20	7	10	7	6	1	7	4	3	4	4
58	9.5	10.5	10	5	3	0	2	0	2	2	2	5	5	3
59	9	7	10	2	0	0	0	0	2	3	4	4	5	4
60	9	7.5	8	5	2	3	0	0	3	2	4	4	5	3
61	10	10	10	6	5	3	3	2	2	3	6	4	5	3
62	10	10	15	6	5	6	4	4	3	2	3	3	4	4
63	9	8	25	10	20	8	5	10	2	2	2	5	5	5
64	10.75	10	15	4	5	0	5	1	2	3	4	3	3	3
65	8.5	7.5	8	6	3	3	3	4	3	2	4	5	5	4
66	9.5	10	2.5	1	6.5	5	0	5	3	2	3	2	2	4
67										2	2	5	5	5
68	9.5	8.5	10	5	3	1	2	1	2	1	2	2	3	5
69	10	8	10	5	0	0	0	0	3	3	5	4	4	3
70	10	10	8	4	2	1	2	1.5	3	1	2	5	5	5
71	9.5	9	3	0	0	0	0	0	2	3	3	4	4	3
72	10	10	12	7	3	2	0	0	1	2	4	5	5	5
73	9	9	7.5	3	2	0	0	0	3	4	6	3	4	3
74	8	7.5	10	6	5	2	3	2	3	3	5	4	5	3
75	9	10.5	9	14	8.5	18.5	1	2	3	3	4	2	5	3
76	10.25	10.25	10	3	2	0.5	0	0	2	3	3	2	4	3
77	10	10	6	4	2	1	1	1	2	2	3	5	4	4
78	10	10	6	4	3	1	3	0	3	2	2	2	5	5
79	9.5	9.5	5	2	2.5	1	2	1	2	2	2	2	4	4
80	11	11	10	2	2	0	0	0	3	1	1	1	4	3
81	10	10.5	5	3	2	1	1	0	3	2	2	3	3	3

id	c75-csleep weekday	c76-csleep weekend	c77-cmod act weekday	c78-cmod act weekend	c79-chard act weekday	c80-chard act weekend	c81-cvery hard act weekday	c82-cvery hard act weekend	c83-cact comparison	c84-ctv weekday	c85-ctv weekend	c86-cregulate sedentary act	c87-cencourage pa	c88-cact w/ child
82	9	8	14	10	15	5	7	2	3	2	2	5	5	3
83	9	6	10	2.5	5	3	0	0	1	3	6	3	5	3
84	9	7	20.5	14	15	6	10	4	3	2	3	5	3	4
85	9	9	10	5	3	1.5	0	1.5	1	3	3	4	3	3
86	9	10	7	6	1	1	0	0	3	4	7	2	4	4
87	10	11	4	2	1	0.5	0	0	2	5	5	5	5	5
88	10	9	10	3	0	0	0	0	3	2	3	5	4	3
89	10	9	7	3	0	0	0	0	3	1	1	2	4	4
90	10	9	8	3	3	2	3	2	3	3	4	3	3	4
91	8.5	9.5	60	24	5	2	0	0	3	4	4	2	3	3
92	9	10	5	8	5	2	0	2	1	4	6	5	4	4
93	9	8	20	5	4	2	0	0	3	3	5	4	4	4
94	9.5	9.5	10	4	2	0	0	0	2	2	2	5	5	5
95	10.6	12	10	8	5	2	3	1	3	6	3	5	5	5
96	9	9	20	16	0	0	4	5	3	7	7	3	4	2
97	10	8	10	6	2	2	1	1	2	2	3	5	5	3
98	10.5	10	7	4	2	2	0	0	3	3	3	2	4	3
99	10	9	2	4	3	2	1	2	3	2	3	5	5	5
100	10	11	25	20	10	10	5	5	3	3	6	4	5	3
101	11	10	4	5	1.5	0	0	0	3	2	2	3	5	4
102	8.5	9.75	10	10	5	5	6	6	1	2	3	5	5	5
103	9	9	10	4	1.5	1	4	1	3	3	4	5	5	2
104	7	9	10	4	5	0	5	0	3	2	4	3	5	1
105	10	10	4	2	0	0	0	0	3	7	7	4	5	2
106	10	12	3	1	1	1	0	0	3	3	3	4	3	2
107	10.25	9	10	8	4	2	1	1	2	3	4	4	5	5
108	9	9	15	6	2	2	0	0	3	2	3	4	4	3
109	9.5	9.5	3	2	3	3	2	0	2	1	3	5	5	5
110	8.5	9	1.5	2	1	2.5	1	1.5	3	3	5	4	3	3
111	9.75	10	7	1	2	0	0	1	3	2	3	5	4	3
112	10	8	7	6.5	4.5	3	2	2	3	2	3	5	5	5
113	10	10	5	0	0.5	0	0	0	3	1	2	4	2	2
114	9	8	0	1	7	4	7	4	2	2	5	4	4	2
115	10	8	15	5	5	0	0	1	3	2	4	5	5	3
116	10	9	5	2	3	1	0	0	3	2	5	5	5	3
117	10	9	2.5	1	4	2	0	0	3	4	7	4	5	3
118	9	9	9	3	1	0	0	0	3	2	3	5	5	5
119	9	9	4	2	5	1	6	0	3	2	3	4	5	4
120	8.5	9.5	20	8	8	2	10	6	1	2	5	5	4	3
121	10	10	4	2	5	3	5	3	3	2	4	4	4	3
122	9.75	9	8	3	3.25	1	2	2	3	3	3	2	2	3
123	10	10	20	8	2.5	3	2	2	3	2	3	5	5	4
124	9.25	8.5	5	2	2.5	1	2.5	0.5	3	2	3	4	4	5
125	9	9	8	2	3	1	0	0	3	2	2	5	5	4
126	9	9.5	4	1	2	0.5	0	0	3	2	3	3	3	2
127	10	10	9	2	0	0	0	0	3	2	3	5	4	3

id	c89-cenough pa	c90-csatisfied pa	p91-pclassify current weight	c92-cclassify current weight
1	5	5	3	3
2	4	4	4	3
3	5	5	3	3
4	4	4	4	4
5	4	4	3	3
6	4	4	4	2
7	5	5	3	3
8	4	4	3	3
9	4	4	4	3
10	5	5	4	3
11	5	5	4	3
12	4	4	4	3
13	3	3	4	4
14	2	1	3	3
15	5	5	3	3
16	3	3	4	3
17	4	4	3	2
18	4	4	3	3
19	4	3	3	3
20	4	4	4	3
21	3	3	3	2
22	4	4	3	3
23	5	5	3	3
24	3	2	5	5
25	5	5	4	3
26	1	1	3	4
27	4	4	3	3
28	5	5	4	3
29	4	4	4	2
30	2	2	3	3
31	3	3	4	4
32	2	2	4	4
33	4	4	3	3
34	3	4	4	3
35	4	4	4	3
36	5	5	4	3
37	4	4	3	3
38	3	3	3	3
39	4	4	3	4
40	3	3	3	3
41	4	4	3	2
42	5	5	5	3
43	2	2	4	4
44	4	4	3	3
45	5	5	4	3
46	2	2	3	2
47	4	4	4	3
48	4	4	4	3
49	5	5	3	3
50	5	5	4	2
51	4	4	4	3
52	3	3	4	3
53	3	3	3	3
54	3	1	4	5
55	5	5	4	3
56	5	5	4	4
57	5	4	3	3
58	4	4	4	3
59	3	3	4	4
60	5	5	3	3
61	3	3	3	3
62	5	5	3	3
63	4	4	3	3
64	4	4	3	3
65	4	4	4	2
66	5	5	3	3
67	4	4	4	3
68	5	5	3	3
69	4	4	3	3
70	5	5	3	3
71	3	2	4	3
72	4	4	4	3
73	2	3	4	3
74	1	2	3	4
75	5	5	4	3
76	4	4	3	4
77	4	4	5	3
78	5	5	3	3
79	4	4	3	3
80	4	4	3	2
81	3	3	3	2

id	c89-cenough pa	c90-csatisfied pa	p91-pclassify current weight	c92-cclassify current weight
82	5	5	4	3
83	3	3	5	5
84	5	5	3	3
85	5	4	3	3
86	3	2	3	4
87	5	5	3	3
88	5	5	4	3
89	2	2	3	4
90	5	5	3	3
91	5	5	3	3
92	5	5	3	3
93	4	4	3	3
94	5	5	4	3
95	5	5	3	3
96	5	5	3	3
97	5	5	4	3
98	4	4	3	3
99	5	5	4	3
100	4	3	4	3
101	5	5	4	3
102	5	5	3	2
103	5	5	4	3
104	4	4	3	3
105	1	1	5	4
106	3	2	4	3
107	4	4	4	3
108	5	5	4	2
109	5	5	3	3
110	3	3	4	3
111	4	4	3	3
112	5	5	4	3
113	3	3	4	3
114	5	5	3	3
115	5	5	3	3
116	4	4	3	2
117	2	3	4	2
118	4	4	3	3
119	5	5	3	3
120	5	5	3	3
121	5	5	2	2
122	4	5	3	3
123	5	5	3	3
124	3	2	4	4
125	5	5	4	3
126	2	3	3	3
127	3	3	5	4

Table of Parent Eating Behavior, BMI, and PAL Groups Inclusion Criteria and Number of Parents in Each Group

Parent Groups	*n*	Criteria
Healthy Eating Behaviors	31	Parents who typically ate fruits, vegetables, dairy, protein, and carbohydrates at meals daily or more than once daily.
Unhealthy Eating Behaviors	28	Parents who typically ate fruits and vegetables never, rarely, occasionally, or almost daily; dairy and protein occasionally, almost daily, daily, or more than once daily; and carbohydrates almost daily, daily, or more than once daily at meals.
High BMI	36	BMI greater than or equal to 26
Low BMI	35	BMI less than 22
High PAL	31	3106 kcal/day or higher
Low PAL	30	2233 kcal/day or lower

Note. The six parent groups were created for the data analysis of this study.

Table of Child Eating Behavior, BMI, PAL, Normal Weight, and Overweight Groups Inclusion Criteria and Number of Children in Each Group

Child Groups	*n*	Criteria
Healthy Eating Behaviors	37	Child who typically ate fruits, vegetables, dairy, protein, and carbohydrates at meals daily or more than once daily.
Unhealthy Eating Behaviors	37	Child who typically ate fruits and vegetables never, rarely, occasionally, or almost daily; dairy and protein occasionally, almost daily, daily, or more than once daily; and carbohydrates almost daily, daily, or more than once daily at meals.
High BMI	39	BMI greater than or equal to 18
Low BMI	41	BMI less than 16
High PAL	30	1544 kcal/day or higher
Low PAL	29	1090 kcal/day or lower
Normal Weight	72	BMI less than or equal to the 75% percentile
Overweight	31	BMI greater than or equal to the 85% percentile

Note. The eight child groups were created for the data analysis of this study.