"RELATIONSHIPS AMONG RACE, HISPANIC ACCULTURATION, AND

WEIGHT-RELATED CHARACTERISTICS OF THE HOME ENVIRONMENT OF

MOTHERS OF YOUNG CHILDREN"

by

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A dissertation submitted to the

School of Graduate Studies

Rutgers, The State University of New Jersey

In partial fulfillment of the requirements

For the degree of

Doctor of Philosophy

Graduate Program in Nutritional Sciences

Written under the direction of

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New Brunswick, New Jersey

MAY, 2020

ABSTRACT OF THE DISSERTATION

"RELATIONSHIPS AMONG RACE, HISPANIC ACCULTURATION, AND

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Minorities in the United States experience significant health disparities—for Hispanics, these disparities are thought to be in part due to their acculturation level. Most studies to date have only examined the role of personal acculturation (i.e., language use, country of origin) and have not considered the acculturation environment's (i.e., immigrant composition of the neighborhood) effect on behavior. It is unclear how race/ethnicity and acculturation affect the weight-related home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics). Therefore, the purpose of this study was to comprehensively examine the weight-related characteristics of the home environments of mothers with young children with regard to race/ethnicity as well as Hispanic acculturation. A diverse group of mothers (N= 568) with young children participated in an online survey to assess the weight-related characteristics of their home environments. Mothers were 60% White, 6% Hispanic, 8% Black, and 6% Asian, averaged 32.73±5.55 years, and had children who were 4.57±1.66 years. Analysis of the weight-related home

environments by racial/ethnic groups found that most differences occurred between White and Hispanic mothers. These findings call to attention racial/ethnic differences in the weight-related home environments of mothers with young children; however, the underlying causes are unclear. To explore whether acculturation played a role in these differences, three acculturation measures (i.e., personal acculturation, acculturation environment, and personal and environmental acculturation variables combined via cluster analysis) were used. When personal acculturation was considered alone, both high and low personal acculturation Hispanic mothers differed from Whites on many characteristics, but few differences were seen between acculturation groups. An examination of the acculturation environment found most differences in the home environment between White and low acculturation Hispanic mothers, with few differences being noted between acculturation groups. Cluster analysis was used to consider the synergistic effect of the two acculturation measures; three clusters emerged: least, somewhat, and most acculturated clusters. Numerous differences were observed in the home environments of White mothers and the least acculturated Hispanic cluster, with differences remaining significant after controlling for family affluence. A comparison across all three acculturation grouping methods revealed that differences tended to occur mostly between White and low acculturation mothers—low acculturation mothers had lower personal intrapersonal (i.e., physical activity cognitions; self-efficacy for obesity protective behaviors and child eating and weight management; and need for cognition), child intrapersonal (i.e., child health status, fruit and vegetable juice intake), interpersonal (i.e., family meal behaviors), and physical environmental characteristics (i.e., physical activity environment) than White mothers. An examination of how mothers

transitioned through the three acculturation measures indicated that for about half (56%) of mothers, personal acculturation predicted the final cluster assignment. Acculturation environment predicted the final cluster for 83% of the mothers. These data indicate that personal acculturation alone is not enough to clearly describe the acculturation level of Hispanic mothers of young children and that acculturation environment is critical to consider. Findings from this study demonstrate the relationship between personal and environmental Hispanic acculturation and the home environments of mothers with young children. Additionally, results suggest that more comprehensive measures of acculturation incorporating acculturation environment, has the potential yield a more comprehensive understanding of how acculturation is related to differences in the home environments of White and Hispanic mothers.

ACKNOLWEDGEMENTS

I would also like to thank my family and friends for their encouragement, love and support. I would like to thank my dad for always encouraging me to pursue my dreams. Most importantly, I would like to thank my husband, Ryan Lewis, who has always supported and encouraged me throughout this process. Thank you for all of your support—you have been my rock throughout this process. Thank you for always being willing to read through sections of my dissertation, helping me navigate the American Community Survey to pull census tract variables, helping me think through ideas, and for taking on more responsibilities at home when I needed to focus on my studies—thank you for always being someone I can count on.

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CHAPTER ONE

INTRODUCTION

Childhood obesity rates have more than doubled over the past 30 years, when obesity was first recognized as a chronic disease by the National Institute of Health in 1985, and more than tripled since 1970.[1,2] This increase is even more drastic for minorities where obesity and overweight rose 120% for Blacks and Hispanics over the past 3 decades.[3] According to the 2011-2012 National Health and Nutrition Examination Survey (NHANES) data, 32% of youth aged 2-19 years of age are overweight or obese, and 17% are strictly obese.[4] Percentages are even higher among non-White youth; for instance, among Hispanic youth, 39% are overweight or obese and of these, 22% are obese.[4-6] Adult rates of overweight and obesity also show this contrast between Hispanic adults and other racial groups. For all races combined, when adjusted for age, 69% are obese or overweight versus 78% Hispanic adults.[4,5]

The high and rising prevalence of obesity is alarming, especially considering the lifelong impact excess body fat has on physical and mental health.[5,7] Some of the emotional and mental health outcomes associated with overweight and obesity include anxiety disorders, depression, low self-esteem, and increased stress, perhaps caused by the discrimination, bullying, and teasing experienced by many who are overweight.[2,3,8-10] Obesity also affects physical health—it can affect almost all of the organ systems and is associated with hypertension, chronic inflammation, and cardiovascular, pulmonary, gastrointestinal, renal, musculoskeletal, and endocrine complications, in addition to non-alcoholic fatty liver disease, sleep apnea, asthma, early menarche, malnutrition and nutritional deficiencies, and premature mortality.[2,3,8,10-16]

The health complications of overweight and obesity are costly to society, with lifetime direct medical costs estimated at $19,000 per person.[17] National health care expenditures related to obesity and overweight in adults range from $98 to $129 billion dollars per year.[18] Indirect costs are even higher; these are related to lost productivity caused by morbidity, disability, or mortality due to comorbidities, such as type 2 diabetes mellitus, coronary heart disease, hypertension, selected cancers, and musculoskeletal diseases.[19-22] The costs of obesity and its associated comorbidities make a clear point of the need for enhanced public health efforts.

In recent years, significant research has focused on identifying environmental, interpersonal, and intrapersonal factors associated with increased obesity risk and developing interventions to modify these factors.[23] Interventions targeted to specific audiences are associated with greater acceptance and application of intervention messages.[24] Most studies and interventions have not directly considered racial/ethnicity differences, however a few have been developed for Black audiences.[25] Additionally, despite representing 16.3% of the U.S. population and being disproportionately affected by obesity and overweight, few obesity prevention interventions have been targeted and tailored to Hispanic populations.[26] The limited research examining differences among racial/ethnic groups with regard to weight-related practices makes it difficult to develop culturally targeted interventions.

A factor complicating the study of Hispanics is the range of acculturation levels in this population (i.e., fully assimilated to unassimilated). Acculturation is the process of cultural and psychological change that proceeds over time as immigrants transition from the cultural ideology of their home nation to that of their host nation.[27-31] Acculturation

level has important impacts on health, for example lower levels of acculturation among Hispanic populations are associated with increased obesity and overweight risk, perhaps because of immigration-associated changes in lifestyle practices and home environments.[32-36] Given the effects of acculturation on health behaviors, further study to elucidate its association with obesity risk is warranted. Moreover, a better understanding of the effects of acculturation level on the development of weight-related behaviors and cognitions could lead to the development of interventions more responsive to the needs, wants, and interests of the Hispanic population in the United States that could, thus, have an increased potential for reducing childhood obesity and overweight risk.[29,34,37-45]

Therefore, this study aims to examine a comprehensive array of weight-related characteristics of home environments (i.e., maternal intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of mothers and their young children and to describe how they differ by racial/ethnic group and acculturation level of Hispanic mothers, and the relationship between maternal acculturation and weight-related characteristics of home environments.

The main Research Questions for this study are:

1. How do the weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of mothers and their young child differ by maternal race/ethnicity?

2A. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers with high

or low personal acculturation levels? 2B. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers living in a high or low acculturation environment?

3. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers clustered by their combined acculturation measures?

CHAPTER TWO

REVIEW OF LITERATURE

This review of literature is divided into the following sections: major racial and ethnic groups in the U.S., dietary patterns in the U.S., and acculturation.

The following sections discuss the research evidence that exists for each topic's relationship to weight-related outcomes concerning families with young children, as well as commonly used instruments for measuring each construct. Note that, unless otherwise indicated, all instruments discussed are self-report measures.

MAJOR RACIAL AND ETHNIC GROUPS IN THE US

The United States is comprised of diverse ethnic and racial groups; of these groups, racial and ethnic minorities have accounted for 91.7% of the nation's growth and often face a disproportionate burden of poor health, known as health disparities and are key targets of health interventions.[46] Key racial and ethnic groups in the U.S. will be further examined, including Whites, Blacks, Asians, and Hispanics.

Whites in the U.S.

White Americans are defined as individuals with familial origins in Europe (such as Irish, German, and Polish), the Middle East (such as Arab, Lebanese, and Palestinian), or North Africa (such as Algerian, Moroccan, and Egyptian).[47,48] Non-Hispanic Whites currently make up 62% of the U.S. population and have a median age of 42.3 years old.[46,49] Whites have a relatively low fertility (1.8 children per woman over her lifetime) and immigration rate compared with most other racial and ethnic groups; they are projected to become a minority by the year 2060 (43% of the U.S. population).[50]

In the U.S., Whites tend to have a higher socioeconomic status than other racial and ethnic groups. Most have at least a high school diploma (93%) and about one-third have a college degree; only 2% of Whites have less than some high school education.[49,51] The median household income for Whites is $71,300; most are homeowners (74%) and married (60%).[51,52] The unemployment rate is low (5.8%) and about 10% of Whites live in poverty. As of 2016, approximately 6% of Non-Hispanic White adults between the ages of 18-64 lacked health insurance, though preliminary data suggest that this has begun to decrease after the introduction of the Affordable Care Act.[49,51,53-55] Non-Hispanic White adults generally have private health insurance (74%) with few using government health insurance (36%).[54-56]

Most Whites in the U.S. are English dominant. That is, most White adults speak English only (94.6%). Of the few White adults who do not speak English only, most speak it very well (3.8%) and few speak English less than very well (1.6%).[49]

White Health Status. Whites generally have a better health status than most other racial and ethnic groups.[53,56] However, according to the 2014 National Center for Health Statistics data set, Whites have a higher mortality rate (725.4 deaths per 100,000 deaths) than most other racial and ethnic groups, though lower than that of Blacks.[56,57] The top three disease-related causes of death for Whites are heart disease, cancer, and stroke.[56] Prevalence rates for non-communicable diseases, such as hypertension and diabetes (27.6% and 6.6%, respectively), are lower than those for Blacks and Hispanics, but higher than those for Asians.[56] The estimated potential life lost due to premature death by age 75, assuming all adults reach the age of 75, for Whites is 6,949 years; although, Whites have a life expectancy of 80 years.[56]

White infants experience one of the lowest mortality rates in the U.S., with only 6 deaths per 1,000 live births, similar to that of Asian infants.[56] In addition, there is a low incidence (5.8%) of low and very low birth weights for White infants.[56] Few Whites (8%) report poor or fair health; most report that they see a health care provider at least once a year, with only 14% reporting that they had not had any health care visits in the last 12 months.[56]

White Weight Status. Overall, fewer Whites are overweight or obese than Blacks and Hispanics.[4] As seen in Table 1, non-Hispanic Whites have the second lowest prevalence of obesity and overweight in the U.S., with women having a lower prevalence than men (63% and 71%, respectively), and girls and boys having a similar prevalence (29% and 28%, respectively).[4,58,59]

Whites are more likely than other racial and ethnic groups to be of a higher socioeconomic status and therefore tend to live in environments that promote positive weight related behaviors.[60,61] These environments often are safer for outdoor physical activity, provide public parks or programs that promote physical activity, and have better access and availability to fresh vs. convenience foods.[60,61]

In addition, Whites are more likely to meet recommendations for weight-related behaviors than other racial and ethnic groups. Whites are the least likely to report that they do not participate in physical activity in their spare time (25% of males and 28% of females).[56] A study by Haughton et al. found that compared to other racial and ethnic groups, White children were more likely to meet physical activity recommendations than other racial and ethnic groups and White adolescents were more likely to meet targets for

Table 1: Prevalence of Overweight and Obesity for racial and ethnic groups in the United States

	All race/ ethnicities[1]	Non-Hispanic Whites[1]	Non-Hispanic Blacks[1]	Non-Hispanic Asians[1]	Hispanic[1]	Mexican Origin	Cuban Origin	Puerto Rican Origin
Women	66%	63%	82%	35%	77%	58%[2]	49%[2]	56%[2]
Men	71%	71%	69%	43%	79%	44%[2]	45%[2]	38%[2]
Girls	32%	29%	36%	14%	41%	**	**	**
Boys	32%	28%	34%	25%	41%	**	**	**

*Table is adapted from an array of sources.4,58,59

[1] Data for races and ethnicities is based on the National Health and Nutrition Examination Survey (NHANES) which was collected in 2011-2012.[4]

[2] Data for country of origin is based on the Hispanic Health and Nutrition Examination Survey (HHANES) which was collected in 1982-1984.[58,59]

** Data could not be located for girls and boys of Mexican, Cuban, or Puerto Rican origin.

all weight-related behaviors measured, including screentime, physical activity, and the consumption of sugar-sweetened beverages, fruits, and vegetables.[62]

Blacks in the U.S.

Blacks or African Americans are defined as persons having origins traced to any of the Black racial groups of Africa.[47] Non-Hispanic Blacks currently make up about 12.3% of the U.S. population and have a median age of 35.9 years old. They are the third largest racial/ethnic group in the U.S.[46,49,56] Blacks have a higher fertility rate (2.1 children per woman over her lifetime) than Asians and Whites; their fertility rate is projected to increase by 14.3% by the year 2060.[100,50] About 9% of Blacks living in the U.S. are foreign-born, which is projected to double by the year 2060.[46]

Overall, Blacks have a lower socioeconomic status than Whites. About a quarter of Blacks in the U.S. have earned a college degree, most have completed high school (88%), and few have less than a high school degree (4.3%).[49,51] This racial group has a median household income of $44,700 and about a quarter live in poverty.[49,51,52] Less than half of Blacks are homeowners.[49,51] About 13% of Blacks are unemployed.[49,54,55] As of 2016 approximately 10% of U.S. Blacks lacked health insurance, although preliminary data suggest that this has begun to decrease after the introduction of the Affordable Care Act.[49,51,53-55] Most Blacks have either private health insurance (57%) or government health insurance (44%).[49,51,53-55]

Most Blacks in the U.S. are English dominant. That is, most Black adults speak English only (92%). The few Black adults who do not speak English only mainly speak English very well (5.1%), with just 2.7% speaking English less than very well. Three-quarters of foreign-born Blacks are proficient in English.[49,63]

Fewer than 4 million Blacks living in the U.S. are foreign-born, originating from Africa, the Caribbean, South America, and Central America (36%, 50%, 5%, and 4%, respectively).[63] The countries that account for about 60% of the population of foreign-born Blacks in the U.S. include Jamaica, Haiti, Nigeria, Trinidad & Tobago, Ethiopia, Dominican Republic, and Ghana (18%, 15%, 6%, 5%, 5%, 4%, 4%, respectively).[63]

On average, foreign-born Blacks have a higher socioeconomic status than Blacks born in the U.S..[63] Of those who are foreign-born, 26% have at least a baccalaureate degree, however, those born in Africa are more likely to have at least a college degree (35%).[63] Additionally, foreign-born Blacks are more likely to be married than those born in the U.S. (48% vs. 35%).[51] The percentage of foreign-born Blacks living in poverty is lower (20%) and household incomes are about $10,000 higher than Blacks born in the U.S..[63]

Black Health Status. Blacks experience disproportionate health disparities compared to all other racial and ethnic groups. The largest disparities in health are found in comparison with Asians.[53,56] According to the 2014 National Center for Health Statistics data set, death rates for Blacks are almost two times higher than for Hispanic/Latinos and Asians, and 17.1% higher than Whites of the same age range. Blacks have the highest mortality rate (849.3/100,000 deaths) of all racial and ethnic groups.[56,57] The infant mortality rate for Blacks is also higher than all other racial and ethnic groups (13/1,000 live births); incidence of low and very low birth weight is also comparatively high (14% vs. 5.8% for Whites, for example).[56]

The top 3 disease-related causes of death for Blacks are heart disease, cancer, and stroke. Prevalence of non-communicable diseases, such as hypertension and diabetes

(33.7% and 9.6%, respectively) are higher than all other racial and ethnic groups.[56] The estimated potential life lost due to premature death by age of 75 for Blacks (12,894.1 years) is higher than all other racial and ethnic groups; the average lifespan for Blacks is 75 years of age.[56] Nearly 9 in 10 Blacks have seen a health professional at least once within the last 12 months and self-rate their health as being better than fair or poor.[56] In addition, less than one-fourth of Blacks have no usual source of health care.[56]

Black Weight Status. Obesity is one of the main contributors for six of the ten leading causes of deaths for Blacks in the U.S. It is also a contributor to the most highly prevalent non-communicable conditions in Blacks, such as hypertension and diabetes.[56,64] As seen in Table 1, non-Hispanic Blacks have the highest prevalence of obesity and overweight in the U.S., with women having a higher prevalence than men (82% and 69%, respectively), and girls and boys having a similar prevalence (36% and 34%, respectively).[4,58,59]

Research suggests that the differences in rates of obesity and overweight in Blacks could be due, in part, to increased rates of low socioeconomic status and cultural factors.[56,65,66] Low-income and minority communities, which include many Black and Hispanic families, typically experience an environment with obesogenic characteristics, such as lack of full service grocery stores, abundance of outlets for convenience foods, fewer supports for physical activity, as well as socioeconomic constraints due to low income levels.[61,67-70] Cultural factors that are thought to influence weight status for Blacks include standards of beauty within the Black community where women with a higher BMI may be more socially acceptable and viewed as more attractive than those with lower BMIs.[66]

Additionally, Blacks are less likely to participate in positive weight-related behaviors.[62] For example, one study found that Blacks are the most likely of all racial and ethnic groups to report not participating in physical activity in their spare time (33% of males and 43% of females).[56] Another study reported that Black children were the least likely to meet recommendations for screen-time, physical activity, and fruit and vegetable intake.[62] August et al.'s study indicated that middle-aged Blacks were least likely to meet recommendations for moderate physical activity; but were more likely than Asians and Hispanics to meet recommendations for fruit and vegetable intake and vigorous physical activity.[71]

Asians in the U.S.

Asian Americans are defined as any individual having origins in the Far East, Southeast Asia, or the Indian Subcontinent.[47] Asians make up only about 5.2% of the population and have a low fertility rate compared to other racial and ethnic groups, but the same as Whites (1.8 children per woman over her lifetime). The growth in the U.S. Asian population is primarily fueled by immigration; two-thirds of Asians living in the U.S. are foreign-born.[50,72,73] By 2060, Asians are expected to make up 9.3% of the U.S. population.[50,72,73] Asians living in the U.S. have a median age of 32.9 years old.[46] Most Asians live in California (6.1 million); however, Asians represent the largest share of Hawaii's population (56% of the state).[72]

Asians have a higher socioeconomic status compared to all other racial and ethnic groups.[51] Most Asians have at least a high school diploma (89%) and about half have a college degree.[49,51] Over half of Asians are homeowners (57%), have a median household income of $77,900, and low unemployment and poverty rates (5.5%, 12%, respectively).

As of 2016, 7.6% of all Asians living in the U.S. lack any form of health insurance, though preliminary data suggest that this has begun to decrease after the introduction of the Affordable Care Act.[49,51-55] Most Asians either have private insurance (74%) or government health insurance (27%).[54-56]

Asian Health Status. The Asian population in the U.S. is referred to as the "model minority" because, as a group, there are few health risks and numerous protective health-related factors.[56] However, language and cultural barriers exist for Asian immigrants which limit their access to good quality health care.[53,56]

Asians have the highest life expectancy of all racial and ethnic groups; life expectancies for Japanese and Chinese (84.5 and 86.1 years, respectively) living in the U.S. are higher than for Whites and Blacks.[56] In addition, they have the second lowest (594.1 deaths/100,000 deaths) mortality rate of all the racial and ethnic groups in the U.S..[56,57] Infant mortality rates (5/1,000 live births), and low and very low birth weight rates (4.8%) are also lower than other racial and ethnic groups.[56]

The top three disease-related leading causes of death for Asians residing in the U.S. include heart disease, cancer, and diabetes. The potential years of life lost due to premature death by age 75 is 3,811.1, which is lower than other racial and ethnic groups.[56] The prevalence of hypertension (14.8%) and diabetes (5.1%) is lower for Asians than all other racial and ethnic groups.[56] Approximately 80% of Asians have seen a health care professional within the last 12 months. However, 18% of Asians between the ages of 18-64 have no source of usual care.[56]

Asian Weight Status. Asians have the lowest reported prevalence of obesity and overweight among all racial and ethnic groups, further demonstrating its role as a "model

minority".[56,72,74] As seen in Table 1, non-Hispanic Asians have the lowest prevalence of obesity and overweight in the U.S., with women having a lower prevalence than men (35% vs. 43%), and girls having a lower prevalence than boys (14% vs. 28%).[4,58,59] As Asians are normally of a higher socioeconomic status than other racial and ethnic groups, they usually live in neighborhoods that have supports for physical activity and positive weight related behaviors.[60,74]

Hispanics in the U.S.

Hispanics are individuals who have an origin in the Caribbean, Spain, Central America, or South America, where the predominant language spoken is Spanish. The classification of Hispanic is considered to be an ethnicity and can include individuals from any race.[75-77] Hispanics make up the largest ethnic group in the U.S..[50] By 2050, 1 in 5 Americans will be a Hispanic immigrant and 35% of children will be Hispanic.[50] By 2060, it is expected that Hispanics will make up 28% of the total U.S. population.[50] The driving force behind this projected increase in the Hispanic population since 2000 has been a natural increase (births minus deaths) due to the high fertility rate (2.4 children per woman over her lifetime) compared with other racial and ethnic groups.[46,51] Fertility rate accounted for 78% of the total change in the U.S. Hispanic population from 2012-2013.[46,51]

Currently, Hispanics make up 17% of the US population; however, Hispanic youth account for 26% of the nation's younger than age 1 population.[46,51] Hispanics in the U.S. have a median age of 27.6 years old.[46] Hispanics in the U.S. have lower educational attainment compared to other racial and ethnic groups; 67% have at least a high school diploma, and 15% have a college degree.[51] About half of Hispanics living in the U.S. are

married.[49,51] U.S. Hispanics have a median household income of about $43,300, about half are home owners, and about a quarter live in poverty.[51] As of 2016, about a third of Hispanics lack a usual source of health care which is largely due to the percentages of uninsured Hispanics (16%), though preliminary data suggest that this has begun to decrease after the introduction of the Affordable Care Act.[49,51,53-56] Most Hispanics who have health insurance have private (52%) rather than government health insurance (40%).[49,51,53-56]

About a third of all Hispanics living in the U.S. are foreign-born and predominately come from Mexico, Puerto Rico, and Cuba (63%, 9.2%, and 5.8%, of the Hispanic population, respectively).[46,58,72] The majority of the literature on Hispanics in the U.S. focuses on these predominant groups, limited research has targeted Hispanic immigrants from other countries or regions.

Of the 33.5 million individuals of Mexican heritage who are living in the U.S., 11.7 million are mainly residing in California and Texas (4.3 million and 2.5 million, respectively) with the remainder concentrated in the northeastern and southern states (7.2 million, and 9 million, respectively).[78] Mexican immigrants average 38 years old, are predominately male (53%), married (55%), and have less than a high school education (49%).[78] The majority (65%) were born in the U.S., and of those, 15% have at least a baccalaureate degree compared to 6% of non-U.S. born Mexican immigrants.[78] However, Mexicans living in border communities in the U.S. have higher poverty rates, lower access to health care and health insurance, and are less acculturated than all other Hispanic groups living in the U.S., and thus have poorer health outcomes.[79]

Puerto Rico is a commonwealth of the U.S.; thus, Puerto Ricans are naturalized citizens of the U.S. and not a true immigrant population. However, those who migrate from Puerto Rico to the U.S. mainland have experienced acculturation, similar to other non-citizens immigrating to the U.S. [80,81] Of the 5.1 million Puerto Ricans living on the U.S. mainland, many reside in Florida and New York (402,000 and 271,000, respectively), with the remainder living in other northeastern states (467,000).[82] Puerto Rican migrants are an average of 47 years old, predominantly female (53%), married (39%), and have completed high school (73%).[82] Despite having slightly higher reported average income, Puerto Rican migrants have lower homeownership rates than Mexican and Cuban immigrants (36% vs. 45% and 56% respectively) and are more likely to live in poverty than all other Hispanics in the U.S..[80,83]

Of the 2 million Cuban immigrants to the U.S., over half live in Florida.[84] Cuban immigrants are an average of 51 years of age, predominately female (51%), married (48%), and have completed high school (77%).[84] Most Cuban immigrants (96%) are first generation residents compared to 72% of Puerto Ricans and 37% of Mexican immigrants.[58] Cuban immigrants also have higher levels of education (10.7 years for men, 10.3 years for women) than Mexican immigrants (9.7 years for men, 9.2 years for women) and Puerto Rican migrants (10.2 years for men, 10.1 years for women); however all Hispanics have similarly low income levels, with most reporting less than $30,000 annually in household income.[58]

For all Hispanics living in the U.S., level of language proficiency is positively associated with economic advantage.[85] Spanish is the most commonly spoken language in the U.S. other than English.[86] In the U.S., of those speaking Spanish in the home, most

reported that they speak English "very well" (51%) or "well" (21%); few reported speaking English "not well" (18%) and only a small percentage reported that they speak English "not at all" (10%).[87]

The 2013 Pew Research center survey, adapted in Table 2, found that 1 in 4 Hispanics and 42% of Puerto Rican migrants are English-dominant; however, the prevalence of English-dominance is lower for those born outside of the US.[78,82,84] Compared to English dominance, Spanish dominance is more prevalent for the overall Hispanic population, those born outside of the US, Cuban immigrants, and Mexican immigrants.[78,82,84,88]

About half of Hispanic adults included in the Pew survey reported that they could carry on a conversation in English and read a newspaper or book in English "very well" or "pretty well" (61%, 60%, respectively); in contrast, most felt more confident in their ability to conduct those tasks in Spanish (82%, 78%, respectively).[89] These trends regarding English language use during a conversation and reading a book vary for those who are foreign-born or first generation Hispanics (38%, 37%, respectively), and for those who are second generation Hispanics (92%, 91%, respectively).[119,89]

Bilingualism is predominately prevalent in second generation Hispanics. Nearly 50% of Hispanics born in the U.S. are second generation; of these individuals, about half are bilingual.[89] As seen in Table 2, about half of Hispanics living in the U.S. who were born in Puerto Rico are bilingual; this is higher than the U.S. Hispanic population as a whole, Mexican Americans, Cuban Americans, Puerto Rican Americans, and those who were born in Mexico and Cuba.[78,82-84] As Hispanics are projected to no longer be a minority by 2050 and make up a significant portion of the U.S. population compared to

Table 2: Language dominance prevalence for Hispanic Americans

	Hispanic[1]	Mexican American[2]	Born in Mexico[2]	Cuban American[3]	Born in Cuba[3]	Puerto Rican American[4]	Born in Puerto Rico[4]
English Dominant	25%	26%	4%	13%	4%	42%	15%
Spanish Dominant	38%	40%	66%	51%	61%	16%	36%
Bilingual	36%	34%	30%	36%	35%	41%	49%

*Table is adapted from an array of sources[78,82,84,89]

[1] Data for Hispanics overall comes from a Pew Research Center Survey conducted in 2009.[89]

[2] Data for Mexican Americans and those born in Mexico comes from a Pew Research Center Survey conducted in 2011.[78]

[3] Data for Cuban Americans and those born in Cuba comes from a Pew Research Center Survey conducted in 2013.[84]

[4] Data for Puerto Rican Americans and those born in Puerto Rico comes from a Pew Research Center Survey conducted in 2013.[82]

other racial and ethnic groups, it is critical to include Spanish-language translations of health communications research targeted to those who may have limited English proficiency skills.[78,82-84]

Hispanic Health Status. Hispanics are the largest minority group in the U.S. and experience disproportionate health disparities compared to most other racial and ethnic groups.[53] However, Hispanics have the lowest mortality rate (523.3/100,000 deaths) of all racial and ethnic groups, though this is thought to be in part due to under reporting of Hispanic origin on death certificates (estimated to be about 5%).[56,57] Hispanics of Puerto Rican (633.2/100,00 deaths) origin have a higher mortality rate than Mexican (547.8/100,000 deaths) and Cuban (525.2/100,000 deaths) origin individuals.[57] Hispanics have an infant mortality rate of 6/1000 live births, which is slightly higher than that of Asians and Whites in the U.S., though they have a similar rate of low and very low birth weight (5.7%).[56] However, Mexican immigrants have lower rates of infant mortality than U.S. born Mexican Americans and Whites, and lower rates of low birth weight than U.S. born Mexican-Americans.[56] In addition, a third of Hispanics have not seen a health care professional in the last 12 months, which is much higher than all other racial and ethnic groups.[56] The top three leading causes of disease-related deaths for Hispanics in the U.S. are heart disease, cancer, and stroke; the total potential life lost due to premature death by the age of 75 for Hispanics is 6,037 years.[56] Hypertension and diabetes are lowest for Mexican Americans (18.1% and 7.8%, respectively), with Puerto Ricans (21.3% and 9.5%, respectively) and Cubans (24.6% and 10.2%, respectively) having an increased prevalence of both diseases.[56]

Many minorities, like Hispanics and Blacks, live in urban areas often classified as food deserts- an area where there is limited access to fresh produce and grocery stores— and the principal food outlets primarily being convenience foods and corner stores; this disparity in food accessibility has been attributed to health problems, such as obesity and non-communicable diseases.[90] In these more urban locations, physical activity is often less accessible and could be a contributing factor to Hispanics being more likely than Whites to report that they do not participate in physical activity in their spare time (30% of males and 39% of females).[56]

Hispanics health is described by what is known as the "Hispanic paradox", a phenomenon marked by lower mortality, but not morbidity, rates compared with other racial and ethnic groups despite the lower socioeconomic status and lack of access to health services.[56,91] The paradox may be explained by one of three hypotheses, the "salmon bias", the healthy migrant, and the risk factors hypotheses.[56] The "salmon bias" is based on the belief that migrants return to their home country when they become seriously ill or reach old age rather than staying in the U.S..[56] The healthy migrant hypothesis posits that only the healthiest people are able to migrate to other countries and therefore will have an improved health status.[56] The risk factor hypothesis states that the variation in mortality rates for certain diseases compared to other racial and ethnic groups is due to a varied distribution of health risks and protective factors for Hispanics.[56]

Hispanic Weight Status. Overall, populations across the globe are experiencing increased prevalence of overweight and obesity. As can be observed in Table 3, the prevalence of obesity in Mexico, Cuba, and Puerto Rico is similar to that in the U.S..[92-95]

Table 3: Prevalence of Obesity and Overweight in Mexico, Cuba, Puerto Rico, and the United States

	Mexico[1]		Cuba[1]		Puerto Rico		United States[1]	
	Overweight	Obese	Overweight	Obese	Overweight	Obese	Overweight	Obese
Women	71%	33%	51%	28%	33%[2]	44%[2]	62%	34%
Men	67%	21%	38%	16%	40%[2]	38%[2]	71%	32%
Girls	10%	19%	11%	24%	19%[3]	20%[3]	30%	13%
Boys	28%	11%	16%	7%	19%[3]	28%[3]	29%	12%

*Table is adapted from an array of sources[92,95,96]
[1] Data for independent countries are based on analyses conducted during 1980-2013.[92]
[2] Data for Puerto Rican adults are based on a sample of adults living in the San Juan Metropolitan area conducted during 2005-2007.[95]
[3] Data for Puerto Rican children are based on an island wide study conducted during 2010-2011.[96]

Additionally, obesity prevalence for boys and girls living in Mexico and Cuba is similar to obesity and overweight prevalence of their peers in the U.S.[92]

As seen in Table 1, a greater percentage of Hispanic adults are overweight or obese than non-Hispanic adults (i.e., 77% vs. 69%) living in the U.S..[4] Of Hispanic adult women in the U.S., 58%, 49%, and 56% of those of Mexican, Cuban, and Puerto Rican origin, respectively, are classified as overweight or obese.[4,58,59] About one in three men from Cuba, and Puerto Rico who are living in the U.S. are overweight, which is a lower prevalence than for women from these nations and their non-Hispanic counterparts.[4,58,59]

As seen in Table 1, Hispanic children living in the U.S. have the highest rates of overweight among all racial and ethnic groups, with 39% being overweight or obese versus 29%, 35%, and 20% of non-Hispanic White, Black, and Asian children.[4] This disparity is even evident at a young age where preschool-aged Hispanic children in the U.S. are 22% obese compared to 8% of all other U.S. preschool-aged children.[97]

DIETARY PATTERNS IN THE U.S.

Dietary patterns in the U.S. reflect the diversity of the country; four main regional patterns exist including diets in the Northeast, Midwest, South, and West. In addition to these patterns, diets exist for the various immigrant populations in the U.S.; major prevailing diets that will be further explored include the dietary pattern for the two largest immigrant populations currently in the U.S.: Hispanic and Asian immigrants.

Regional Diets in the U.S.

The Western diet, also referred to as the standard American diet, drastically changed around the 1950's due to increased abundance and accessibility to calorically dense and nutrient poor food and beverage choices arising from the emergence of fast

foods and prepared and prepackaged snacks and frozen meals.[98-100] Today, the American diet is characterized by excess consumption of calories from refined carbohydrates and fatty meats, excess sodium and added fats, and inadequate whole grains, fruits, and vegetables. Studies have shown that a steady improvement in diet has occurred over the last decade, however the overall dietary quality remains poor.[98-102] Through international industrialization, migration, and the Internet, the Western dietary pattern has influenced traditional cultural dietary practices around the world.[98]

The dietary pattern found throughout the U.S. consists of three main meals with snacks; dinner is usually the largest meal and breakfast often is skipped due to the busy lifestyle.[103] Some regional variation exists in the American diet due to the immigrant populations that have settled there; there are four main regions found in the U.S. and include the Northeast, Midwest, South, and West.[103]

Northeastern foods feature fresh seafood from the Atlantic Ocean and various bodies of freshwater, and seasonal produce.[103] Beans, hearty vegetables such as cabbage and corn, root vegetables, berries, and apples are also found throughout the region.[103] Much of the cuisine has been shaped by Native American preparation techniques blended with those of the British, German, and Dutch colonists, and include roasting, baking, boiling, and stewing.[103]

Midwestern foods feature red meats, poultry, vegetables, potatoes, grains, and fresh breads; beef and pork are the preferred meat in this region.[103] The cuisine has been shaped by the Native Americans and immigrants from France, and central and eastern Europe.[103] Traditional food preparation methods include freezing and canning to preserve foods for the winter months, and pot pies.[103] Traditionally, corn was eaten at every meal

either as a porridge, or baked or fried into a bread; other common vegetables include squash, pumpkin, cabbage, and potatoes.[103]

Southern foods often reflect the bounty of vegetables, seafood and shellfish, and meats available and feature corn, rice, meats, sweet potatoes, and greens.[103] Influences by Native American, French Acadian in the bayou region, and Spanish foods have yielded a unique blend of cultural dishes and sauces that are featured in Southern meals.[103] Typical dishes include stews, rice dishes with meat, poultry, greens, peas, beans, vegetables, quick breads such as biscuits and dumplings, and shellfish; candies and desserts are usually served with meals, and include cakes, puddings, custards, pies, and nut brittles.[103] Food plays a significant cultural role in the South due to the cultural tradition of hospitality and is often the focal point for get togethers.[103]

Western foods traditionally feature red meats, eggs, potatoes, corn, apples, and wheat; seafood and shellfish are more accessible for those living on the pacific coast.[103] Traditional meals consist of stews such as chili con carne, prepared meat, or meat pies served with sourdough bread, corn bread, or potatoes; seafood *cioppino* and teriyaki are common dishes in the Pacific region of the West where Italians and Japanese immigrants have settled.[103] Influences by Chinese, Mexican, Italians, Japanese, and Greeks shaped the regional cuisine of these areas.[103] In temperate areas, such as California, fruits and vegetables are more readily available.[103]

Throughout the U.S., residents consume large amounts of refined grains and few whole grain sources, exceeding recommendations for grains by 2.1 oz.-eq. per day.[98] Additionally, U.S. residents typically consume 71.6 grams of added fats and oils per person per day, far exceeding the maximum of 27 grams per day; key sources of fats and

oils include chips, salad dressings, nuts and seeds, meats, mayonnaise, grain-based desserts, cheese, pizza, fried vegetables, whole milk, and dairy-based desserts.[98] Americans consume an average of 120 grams of added sugars a day, far exceeding the recommended 32 grams; about a third of added sugars consumed daily come from sugar-sweetened carbonated beverages.[98] Americans currently meet 60% of the recommendations for milk intake, consuming 1.8 cup equivalents of dairy products; about a third of Americans meet the adequate intake for calcium.[98]

Regional Disparities in Obesity. Regional variation also exists in obesity prevalence and health status. The South has the highest prevalence of Obesity, followed by the Midwest, Northeast, and West (32%, 30.6%, 27.3%, 25.3%, respectively). A spatial regime analysis conducted in 2015 by Myers et al. determined that the South had the largest density of high obesity counties (30% of counties), and few low obesity counties (2% of counties).[104] The Northeast and West had a large proportion of low obesity counties (41% and 66% of counties, respectively) with no counties classified as high obesity counties.[104] The Midwest had the lowest density of low (3% of counties) and high (6% of counties) obesity counties compared to the other regions.[104]

The regional disparities in obesity status can be linked to a number of factors.[104] Factors explored by Myers et al. in their analysis of regional variation included the local economy, family structure, education level, healthcare availability and utilization, and the physical activity and food environments.[104] The South (18.2%) had the largest percent of the population living in poverty in the U.S., followed by the West, Midwest, and Northeast (14.3%, 12.9%, 11.5%, respectively).[104] All regions had about 4% of the labor force population unemployed. The Northeast had about a third of the population living in

poor/non-poor segregation, whereas all other regions only had about 18% of the population living in poor/non-poor segregation.[104] In terms of family structure, families living in the South (11%) were more likely to be headed by single mothers compared to the Northeast, and the Midwest and West (9.5%, 8.3%, and 8.3%, respectively).[104] In addition, the South (16.7%) had the largest percentage of the population being Black compared to the Northeast, Midwest, and West (4.7%, 2.1%, and 1.2%, respectively).[104] The West (15.9%) had the largest percentage of the population being Hispanic compared to the South, Northeast, and Midwest (8.7%, 5.0%, and 3.3%, respectively).[104] In the South, about 22% of the population had less than a high school education, compared to about 13% of the population in all other regions.[104]

About 20% of individuals living in the South and West lacked health insurance compared to 14% of those in the Midwest and 12% of those in the Northeast.[104] The Northeast (2.9) had the largest amount of physicians per 1,000 people compared to the West, South, and Midwest (1.8, 1.4, and 1.3, respectively).[104] The Northeast (3,692 per 1,000 people) had the highest frequency of outpatient visits, followed by the Midwest, West, and South (2,932, 2,380, and 1,888 per 1,000 people).[104]

The recreation environments varied in terms of percent of adults who are physically active and natural amenities available; the total number of recreation facilities throughout all regions was the same (0.1 per 1,000 people).[104] The South (29.3%) had the largest percentage of adults who were physically inactive, followed by the Midwest, East, and West (26.5%, 24.2%, and 21.2%, respectively).[104] Additionally, the food environment varied in terms of the percentage of the population living in a food desert, but was similar in terms of the number of fast food restaurants per 1,000 people (0.6).[104]

About 20% of individuals living in the West and Midwest lived in a food desert, compared to 16% of those living in the South, and 8% of those living in the North.[104]

Hispanic Diets: Then and Now

Variability exists in the diets of the prevailing Hispanic immigrant groups. The variation stems from cultural differences, food availability, influences of immigrant groups, and the history of the country of origin.[103] The traditional diet throughout Latin America is high in lean protein (e.g., lean meat and fish) as well as fiber due to a variety of fruits and vegetables (corn, peas, squash) and legumes. The traditional diet throughout the Caribbean is composed of beans, meat, fish, and is lower in fiber than diets found in Central and Latin America due to heavy consumption of starchy vegetables (plantains, yucca) and refined carbohydrates (white rice and breads).[105] Table 4 summarizes traditional diets, meal patterns and changes upon immigration for those of Mexican, Puerto Rican, and Cuban origin.

Modern diets throughout the Caribbean and Latin America have been heavily influenced by globalization and urbanization leading to the nutrition transition.[106-108] The nutrition transition is a phenomenon characterized by the shift to a more calorically dense diet with or without reduced physical activity; it is caused by several changes including declines in food prices, increased access to supermarkets, and urbanization and development throughout the country.[106,107] The diet most associated with the nutrition transition in lower-income countries has been one with a rapid increase in animal proteins, highly processed foods, and sugar-sweetened beverages. In higher income countries, the transition is marked by increased portion sizes, a greater frequency of

Table 4: Summary of Hispanic Migrant Diets

Country of Origin	Traditional Foods	Traditional Eating Occasions	Changes After Immigration
Puerto Rico	***Foods:*** beans, stewed meats, fish, and seafood, poultry, a vegetable base called *sofrito*, rice, marinated peas, stews, adobo seasoning, starchy vegetables ***Cooking Techniques:*** stews, boiling, frying, and stir-frying	***Breakfast:*** bread and coffee *Lunch:* rice and beans, or a starchy vegetable, and sometimes fish, such as cod ***Dinner:*** rice, beans, starchy vegetable, meat or soup	- Diet improves upon immigration - Diet usually worsens upon return to Puerto Rico - Decreased consumption of starchy vegetables, complex carbohydrates, saturated fats, and sugar-sweetened foods - Increased consumption of whole fruits, leafy green vegetables, eggs, bread, beef, dietary fiber, and breakfast cereals - Increased consumption of calorically dense and nutrient poor foods
Cuba	***Foods:*** beans, stewed meats, fish, and seafood, poultry, a vegetable base called *sofrito*, rice, marinated peas, stews, adobo seasoning, starchy vegetables ***Beverages:*** coffee ***Cooking Techniques:*** stews, boiling, frying, and stir-frying	***Breakfast:*** bread and coffee ***Lunch:*** rice and beans, or a starchy vegetable, and sometimes fish, such as cod ***Dinner:*** rice, beans, starchy vegetable, meat or soup	- Diet worsens upon immigration - Increased consumption of calorically dense and nutrient poor foods
Mexico	***Foods:*** grains, breads, high fiber fruits and vegetables (corn, peas, squash), legumes, dairy, meat, fish, eggs ***Beverages:*** coffee, aguas frescas ***Cooking Techniques:*** stews, baking, boiling, frying, and stir-frying	***Early Breakfast (7:00 am - 8:00 am):*** coffee and bread or a tortilla ***Late Breakfast (9:00 am - 11:00 am):*** eggs, tortillas, juice, and beans ***Lunch (2:00 pm - 5:00 pm):*** tortillas, rice, meats or fish, beans, a stew of meats and vegetables called *cocido*, and a fruit-based beverage called *agua fresca* ***Dinner (8:00 pm - 10:00 pm):*** hot beverage and bread	- Diet worsens upon immigration - Dietary pattern is usually reduced to 3 meals a day - Increased intake of fast food, saturated fats, simple sugars, and processed convenience foods - Decreased intake of fruits, vegetables, and dietary fiber - Heaviest meal becomes dinner - Snacks are increased and usually include cookies, candies, sandwiches, chips, and ice cream

*Table is adapted from an array of sources[58,92,103,105-123]

meals consumed outside of the home, greater frequency of snacking, and replacing water and milk with sugar-sweetened beverages.[106]These alterations can have detrimental effects on health, increasing the rate of obesity and associated non-communicable diseases.[106] The nutrition transition continues to play a role in the rate of obesity among immigrant families when poor dietary practices and sedentary behaviors are perpetuated; this is further perpetuated as the families begin to experience the culture of their new environment.[107]

Globalization also has improved exposure to other cultures and their dietary patterns. In cities and regions with greater access to Americanized food products, such as those in close proximity to the U.S. like northern Mexico, the dietary pattern often follows a more Westernized diet and may result in detrimental changes (e.g., decreased consumption of whole grains and legumes).[106,110,114] The effects of globalization are drastically increased upon immigration to the U.S. as the individual begins to experience a new culture and their dietary habits change even more. For example, they may replace traditional foods with perceived "equivalents"- such as replacing homemade corn tortillas with purchased refined white flour tortillas or replacing fresh fruits with fruit drinks, punches, or juices - or adopt new behaviors, such as adding fatty salad dressing to traditionally undressed greens.[106,112]

Traditional Caribbean Diet. The traditional Caribbean diet, typical of Cuba and Puerto Rico, is greatly influenced by the indigenous people, the Spanish settlers, and the African slaves brought to the islands.[103] Indigenous staple foods that are a prevalent component of traditional Caribbean diet include cassava, yucca, tapioca, avocado, bananas, and plantains, beans, cashews, tropical fruits— such as papaya, guava, cocoa, soursop— and

several varieties of squash, sweet potatoes, and tomatoes.[103] Early Spaniard explorers brought livestock and plants to cultivate foods such as rice, breadfruit, coffee, mango, citrus, and various spices.[103]African slaves brought vegetables, such as okra and taro root.[103]

The traditional Caribbean meal has a large emphasis on starchy vegetables with some meat, poultry, or fish.[103] Traditionally, legumes flavored with lard, salt, and *sofrito* (i.e., a mixture of peppers, onions, and tomatoes), *escabeche* (i.e., pickled vegetables), blood sausage, fried corn cakes, fried cod, plantains, and fresh fruit are commonly consumed.[103] The most popular beverage is coffee.[103] Rum is historically an important to this region.[103]

Ethnic heritage and socioeconomic status greatly influence what is consumed at an individual level.[103] The modern meal pattern in the Caribbean consists of three main meals.[103] Breakfast usually includes coffee with milk and bread, and if income permits, eggs, cereals, and fruits.[103] Lunch usually consists of rice and beans with meat and sometimes a starchy vegetable.[103] Dinner is similar to lunch, with milk being added when available.[103] Snacks are frequently consumed throughout the day and include soft drinks, fruit juices poured over shaved ice, and fresh fruit.[103]

Puerto Rican Diet. Regional dietary variations exist within the islands. Due to its history, the modern Puerto Rican diet is inherently a fusion of multiple cultures, and includes *criollo* (creole) foods, indigenous foods of the Taino people, and an adaptation of the Western diet.[119] Traditionally in Puerto Rico, *sofrito* is used as the base of many dishes, such as rice, beans, and stewed meats, fish, and seafood.[103] Chicken is frequently prepared and is served with rice and marinated peas or in a stew.[103] Some foods, such as

boiled plantains, meat, and fish, are seasoned with adobo, a mixture of spices, salt and pepper.[103] Starchy vegetables are often consumed, including the traditional dish of stuffed plantains, called *mofongo*, which is usually stuffed with pork rinds, poultry, and fish or shellfish.[103] Dark green leafy vegetables are not usually consumed.[103]

The traditional meal pattern in Puerto Rico includes three meals: a light breakfast of bread and coffee, a light lunch of rice and beans or a starchy vegetable, sometimes with the addition of cod, and a late dinner of rice, beans, a starchy vegetable, and meat or soup.[103] Snacking has increased greatly recently, mainly comprised of calorically dense and nutrient poor foods.[103]

The nutrition transition in Puerto Rico began to drastically change in 1952 when it became a commonwealth of the U.S. and as it progressed from an agricultural society to an industrial one.[119,122] The modern dietary pattern in Puerto Rico is rich in high glycemic carbohydrates, such as white rice, starchy vegetables, sugar-sweetened drinks (e.g., soda and fruit drinks), refined breads, fast foods, and fried foods, and is associated with higher BMIs and waist circumferences, lower HDL-C, and greater risk for metabolic syndrome.[85,122]

The changes that occurred in diets and dietary patterns of Puerto Ricans who have immigrated to the U.S. mainland are unclear.[108] Some studies suggest that as Puerto Ricans become more acculturated, their diet quality and variety improves, whereas other studies have shown that diet quality worsens.[85] Three major dietary components have been identified in the diets of the Puerto Rican migrant population: 1) traditional foods, such as rice, beans, and oils; 2) meats, processed meats, and french fries; and 3) sweets, sugar-sweetened beverages, and dairy desserts.[117,118] Acculturation of Puerto Ricans

living in Massachusetts was associated with increased intake of dietary fiber, breakfast cereals and fruit, and a lower intake of complex carbohydrates, saturated fat, and starchy vegetables.[85] A study of Puerto Rican migrants living in New York found that those on the mainland eat fewer starchy vegetables, sugar-sweetened foods, and a greater variety of foods, including fruits and leafy green vegetables, eggs, bread, and beef; however, the improvements in diet revert to the traditional diet upon return to Puerto Rico.[103] Other studies, however, have found that increased acculturation for Puerto Rican migrants is associated with increased consumption of calorically dense and nutrient poor foods.[58,113,117]

Cuban Diet. Many of Cuba's traditional dishes were greatly influenced by Spanish colonization and rule between the years of 1492-1898, including *picadillo* and *ropa vieja*.[103] *Picadillo* is a meal cooked with ground meat, olives, raisins, tomatoes, and chili peppers and served with fried plantains or rice.[103] *Ropa vieja* is a dish made of spicy beef strips that is usually served with rice and beans.[103] As in Puerto Rico, starchy vegetables are consumed more heavily than leafy green vegetables.[103] The traditional meal pattern of Cuba is similar to that of Puerto Rico, with most families consuming three meals a day with light snacking.

The nutrition transition in Cuba is attributed to their modest economic recovery, starting with the fall of the Soviet Union in 1989, which led to an increase in availability of fast foods and convenience foods, and a decrease in availability and accessibility to fresh fruits and vegetables.[116,120,123] Just prior to 1989, food availability increased, resulting in drastic changes in macronutrient consumption between 1980 and 1989. For instance, fat increased from 27 to 48% of daily calories and carbohydrates rose from 40

to 58% of daily calories with sugar cane making up a total of 28% daily calories.[120] Shortages of imported foods began in 1990, which decreased availability of many fresh foods, causing a decrease in per capita energy intake form 2552 kcal in 1988 to 1940 kcal in 1993.[120] Today, the Cuban dietary pattern relies on red meat (especially ham), white bread, sugar-sweetened beverages, and processed foods.[116,123]

Cuban immigrants' dietary patterns worsen with greater acculturation.[116] Cubans often arrive to the U.S. with a poor traditional dietary pattern characterized by a high consumption of starchy vegetables, which is only amplified with greater acculturation.[116] *Mexican Diet.* The traditional diet of Mexico is rich in grains, breads, high fiber fruits and vegetables (corn, peas, squash), other fruits, legumes, dairy, meat, fish, eggs, with minimal use of sugar-sweetened beverages and breads.[105,111] Breakfast is broken into two time frames where the first, *desayuno*, consists of coffee and bread or a tortilla eaten very early in the day and the second, *almuerzo*, a heavier breakfast eaten between 9 am and 11 am consisting of eggs, tortillas, juice, and beans.[111] Lunch, or *comida*, is the heaviest meal of the day eaten between 2 pm and 5 pm and consists of tortillas, rice, meats of any type (including fish), beans, *cocido* (a stew of meats and vegetables), and fruit-based beverages known as *aguas frescas*.[111] The last meal of the day, *cena*, is eaten between 8 pm and 10 pm and consists of a hot beverage and bread. Snacks are generally not consumed in Mexico, however, if consumed, the snack is generally a fresh fruit.[111]

The nutrition transition in Mexico has shifted the health of the nation from a high prevalence of under nutrition to an increased prevalence of obesity and its related non-communicable diseases, which is due to rapid urbanization and economic growth.[121] The modern diet is shifting to have an increased consumption of fat, raising the total energy

intake of fat from 23.5% in 1988 to 30.3% in 1999, as well as refined carbohydrates; these increases have occurred throughout Mexico and have not been limited to the wealthy and urban areas.[121] These drastic changes in caloric intake has led to the increased prevalence of overweight and obesity rising from 33.4% of adults aged 18-49 in 1988 to 59.6% in 1999.[121]

Mexican immigrants to the U.S. who have a higher acculturation level tend to abandon more traditional and healthful dietary practices and quickly replace them with processed convenience foods.[105,115] More acculturated Mexican immigrants are more likely to increase their intake of fast food, saturated fats, and simple sugars, and decrease their intake of fruits, vegetables, and dietary fiber.[111] During the breakfast time period, traditional meals are often replaced as immigrants become more acculturated.[111] For *desayuno*, cereal with milk is consumed instead of traditional fare.[111] *Alumerzo* often consists of eggs, tortillas, orange juice, and sandwiches instead of beans.[111] Many more acculturated Mexican immigrants no longer consume their heaviest meal at lunch, instead consuming it at dinner.[111] Those who consume the later lunch called *comida* often replace the stew eaten at this meal with cooked vegetables; dinner is no longer the lightest meal and is consumed earlier in the evening.[111] Those who are more acculturated tend to consume more snacks, including cookies, candies, sandwiches, chips, and ice cream.[111]

Comparison Across Immigrant Groups. The Hispanic Health and Nutrition Examination Survey (HHANES) has only been conducted once during the years of 1982-1984.[113] The data indicated that Mexicans residing in the U.S. were less likely to have eaten one or more calorie dense/nutrient poor food items (e.g., candy, soft drinks, cakes, cookies, chips, sugar) daily than Cubans and Puerto Ricans residing in the U.S..[113] Although, all

groups had high intakes of these types of foods, ranging from 61% of Mexican women

eating more than 1 calorie dense/nutrient poor food item daily to 76% and 74% of Cuban

and Puerto Rican women, respectively.[113]

The HHANES data found that one in three Puerto Rican migrant women had the

lowest dietary balance score, defined as eating 0-1 foods from the healthy food groups

per day, of migrant groups, whereas only 17% Mexican and 13% Cuban immigrant

women had the lowest score.[113] Across countries of origin, about half of women

consumed only 2 to 3 items from healthy food groups daily.[113] Just one in five Puerto

Ricans were classified as having a higher dietary balance score (i.e. 4-5 healthy food

group items daily) compared to 32% of Mexican and 35% of Cuban immigrant

women.[113]

Asian Diets: Then and Now

Like Hispanic immigrants to the U.S., Asian immigrants migrate from many

different countries, each having diverse cultural backgrounds making their dietary habits

vary greatly. The prevailing dietary patterns found in Asian immigrant populations to the

U.S. include Chinese, Filipino, Indian, Southeast Asian, Japanese, and Korean.[103] For

Asian immigrants, many traditionally prepared dishes are often still consumed after

immigration, however, an Americanized diet and meal pattern is often adopted.[103] Table

5 summarizes traditional diets, meal patterns and changes upon immigration for those of

Chinese and Taiwanese, Filipino, Indian, Southeast Asian, Korean, and Japanese origin.

ACCULTURATION

Acculturation is the process of cultural transition.[30] As culture can affect health

behaviors and beliefs, it is critical to understand the role that acculturation can have on

Table 5: Summary of Asian Migrant Diets

Country of Origin	Traditional Foods	Traditional Eating Occasions	Changes After Immigration
China and Taiwan	*Foods:* rice, wheat, fish, meat, poultry, soy sauce, tofu, soy milk, fermented beans, hoisin sauce, oyster sauce *Beverages:* hot soup or tea *Cooking Techniques:* stir-frying, steaming, deep-fat frying, simmering, roasting	*Breakfast:* hot cereal made of rice called *congee*, served with small amounts of meat or fish *Lunch:* soup, a rice or wheat dish, vegetables, and meat or fish; typically, smaller portions than dinner *Dinner:* soup, a rice or wheat dish, vegetables, and meat or fish *Snacks:* served in-between meals	- Dinner is often the most traditional meal - Breakfast and lunch include Americanized foods - Traditional foods such as soybean products, rice and vegetables and fruits are consumed; traditional fruits and vegetables may be replaced with those more readily available in the U.S. - Meat, poultry, dairy, and sugar consumption increases
Philippines	*Foods:* rice, noodles, meat, poultry, or seafood, tropical fruits and vegetables *Beverages:* water buffalo milk called *caraboa* *Cooking Techniques:* wok-frying, steaming, boiling	*Breakfast:* fried rice with egg or fish, meat, and a hot drink *Lunch:* soup, a fish or meat dish, rice, vegetable, and fruit or dessert *Dinner:* soup, a fish or meat dish, rice, vegetable, and fruit or dessert *Snacks:* two are consumed and are called *merienda*; one is served midmorning and one is served late afternoon	- Traditional foods are easily found, but tropical fruits and vegetables are substituted - Typically consume an American diet with some Filipino dishes - *Meriendas* are not usually eaten
India	*Foods:* wheat, tea, eggs, garlic, dried, fresh or pickled fruits and vegetables, dried spices, coffee, fresh pickles, seasoned yogurts, rice, clarified butter *Beverages:* coffee, tea *Cooking Techniques:* boiling, steaming, frying	*Breakfast:* coffee or tea, rice or roti, pickled fruit or vegetable, and a lentil stew called *sambar* *Main meal:* one rice dish, a curried vegetable, legume, or meat dish, a baked or fried roti, a pickled fruit or vegetable, and a yogurt dish *Snacks:* one per day	- Traditional foods are usually still consumed - Meal pattern changes drastically due to faster pace of life - Breakfast may be omitted and snacking may become more frequent

*Table is adapted from an array of sources[56,103]

Table 5 continued: Summary of Asian Migrant Diets

Country of Origin	Traditional Foods	Traditional Eating Occasions	Changes After Immigration
Southeast Asia	*Foods:* Rice, shellfish, raw vegetables, tropical fruit *Beverages:* soy milk, tea *Cooking Techniques:* stir-frying, simmering, steaming, boiling	*Breakfast:* soup with rice noodles, meat, bean sprouts, and cilantro with boiled egg, meat, and pickled vegetables served on French bread *Lunch:* rice, fish or meat, a vegetable dish, and a broth with vegetables or meat *Dinner:* rice, fish or meat, a vegetable dish, and a broth with vegetables or meat	- Rice is usually consumed once a day - Meat and poultry consumption increases - Shellfish and seafood consumption decreases - Whole fruits replaced with fruit juices, soft drinks, and candies
Korea	*Foods:* rice, millet, buckwheat, vegetables, *kimchi*, fish, shellfish, soup *Beverages:* thin barley water, tea, wine *Cooking Techniques:* steaming, fermenting	*Breakfast:* soup with rice, eggs, meat or fish, vegetables, kimchi and sauces *Lunch:* noodle dish with broth, and shellfish, meat, or vegetables *Dinner:* soup with rice, eggs, meat or fish, vegetables, kimchi and sauces *Snacks:* frequently throughout the day	- Rice is usually consumed once a day - Fish, beef, sesame seed oil, and traditional condiments often consumed - Dairy consumption increases
Japan	*Foods:* rice, rice vinegar, sushi, rice noodles, tofu, soy sauce, fermented bean paste, wheat noodles, fish, shellfish, seaweed, algae *Beverages:* green tea *Cooking Techniques:* steaming, frying, simmering	*Breakfast:* salty-sour umeboshi plum, rice, seaweed soup, pickled vegetables *Lunch:* leftovers mixed with tea or broth *Dinner:* rice, soup, raw fish, a simmered dish, either a grilled or fried dish *Snack:* one per day	- Typically follow an American diet - Traditional foods consumed on special occasions

*Table is adapted from an array of sources[56,103]

the development of health behaviors and health outcomes.[30] Acculturation, as a construct for the purposes of this study, will be explored to determine its effects on weight-related behaviors.

Defining Acculturation

Acculturation is the process of cultural and psychological change that results from contact between two or more cultural groups.[28] This process can occur at the individual level or at the institutional or population level.[28] At the institutional or population level, acculturation involves changes in social structures and cultural practices, and at the individual level it involves changes in the person's behaviors and beliefs.[27,28] This phenomenon can occur whenever two cultures come in contact, as occurs with migration between countries or regions, or in communities that share borders.[27,28] Acculturation requires a significant period of consistent contact with the new culture, and continues long after the initial contact.[28]

As a construct, acculturation often is broken into two models: unidimensional and bidimensional.[29,124] The unidimensional model posits that individuals are either not acculturated or are fully acculturated, missing many of the complexities that can exist while transitioning from one ideology to another.[29] The cultural beliefs that an individual ascribes to are generally not restricted to whether they follow one culture or another, therefore the unidimensional model does not fully explain the phenomenon of acculturation, and a more encompassing model is necessary.[28] The bidimensional model posits that acculturation is a fluid continuum of changes in behavior and attitudes for both the individual and society and that each individual goes through this process in a unique way and time frame.[27,28,30,125] Thus, acculturating individuals have two independent forms

of cultural identity.[28,126] Depending on a variety of circumstances such as length of time in the new culture and extent of interactions with members of the new culture, one of these cultural identities may have a larger role in the individual's day-to-day life.[28,126]

The bidimensional model proposes four main categories of acculturation: marginalization, separation, assimilation, and integration.[124] Marginalization is defined as low acceptance of both cultures, separation is defined as a high acceptance of the origin culture and low acceptance of the new culture, assimilation is defined as a high acceptance of the new culture and low acceptance of origin culture, and integration is defined as a high acceptance of both cultures.[28,29,125,126]

Movement along the continuum of acculturation is dictated by attitudes and behaviors experienced during intercultural exchanges of not only individuals but also of society as a whole.[27,28,125] The rate at which an individual progresses can vary due to the interplay of interpersonal and environmental factors of the individual, such as the new culture's acceptance or rejection of multiculturalism, the degree of exposure to the new culture, and whether the individual embraces or rejects diversity found in the new culture.[27,28,125]

A society that is more willing to accept diversity, including new behaviors and attitudes, will allow for multiculturalism and a more rapid integration and fuller assimilation of individuals, whereas a society that is more likely to reject diversity, is more likely to slow or halt the acculturation process and promote stasis.[27,28,125]

The state of an individual's acculturation level can affect a variety of behaviors. For example, those who are less acculturated tend to cling to dietary habits from their

origin culture which may confer health benefits.[127] For example, Mexican immigrants to the U.S. who are in the earliest stages of acculturation tend to eat a more traditional diet, rich in fruits, vegetables and fiber, and low in saturated fat and simple sugars.[127] In contrast, the dietary habits of those who have embraced U.S. culture tend to eat more highly processed convenience foods and have higher intakes of fast foods, saturated fat, and simple sugars, and a decreased intake of fruits and vegetables and dietary fiber, all of which increase their health risks.[127] Generally, as acculturation level increases, dietary patterns transition from traditional food habits associated with the country of origin to those of the new country of residence.[128] Thus, understanding where on the continuum individuals are with respect to acculturation is critical to understanding their weight-related behaviors and identifying key factors to incorporate in obesity prevention interventions tailored to immigrant populations.[124]

Acculturation of Hispanics

The main predictors of acculturation in Hispanic families in the U.S. include increased time in the U.S., gender, and social acceptance.[39,129,130] Gender plays an important role in cultural beliefs and values, especially for Hispanic families.[39,129,130] For instance, males of Hispanic origin are more likely to use English and feel more socially accepted than females.[39] The effect of gender may be modulated through proximity to labor force participation; women of lower acculturation may not be working and therefore are less exposed to cultural elements of the U.S..[39]

As behavior change theory works to modify drivers of health behavior—such as culture, belief, and relationships—it is important to consider the cultural framework that most affects the individual.[40] In the U.S., varying acculturation level can lead to health

disparities and differences in weight-related health behaviors and home environment characteristics, specifically for Hispanics, that lead to poor health outcomes.[40] Acculturation has been linked to an overall decline of healthy behaviors, an increased risk of obesity and diabetes, decrease in physical activity, changes in food related behaviors and values, increases in prevalence of low birth-weights, shorter sleep durations, and changes in dietary pattern.[29,105,131-139]

Acculturation and Obesity Risk

Hispanics in the U.S. experience a higher prevalence of obesity than all other racial/ethnic groups.[140] The drivers that lead to this disparity in adults are important for researchers to understand. Generally, immigrants arrive with protective behaviors from their home culture, though this may not be the case for certain groups, such as those migrating from Puerto Rico to the mainland.[117,141,142] These behaviors may be disregarded and obesogenic behaviors of their host culture adopted, ultimately impairing their health status.[140,141,143-145] However, individuals migrating from countries that recently underwent nutrition transition or where the food supply is poor may be doing better in terms of the micronutrient composition and worse in terms of the macronutrient composition of their diet upon immigration to the U.S..[106,146-148] Additionally, childhood obesity in the U.S. has become a public health crisis, with prevalence increasing particularly among Hispanic children who experience an increased prevalence of obesity compared to non-Hispanic children.[97,149]

Differences in acculturation level that lead to varied cultural values, diet, and other weight-related behaviors associated with country of origin may affect obesity risk.[150] For example, Mexicans in the U.S. with a higher acculturation level have a greater

risk of obesity, despite having higher physical activity levels than less acculturated counterparts.[58] A similar positive relationship between acculturation and obesity risk occurs among Cubans in the U.S..[85,116] Puerto Ricans who have migrated to the U.S. often adopt a healthier dietary pattern, increasing their consumption of fruit, vegetables, dietary fiber, and whole grains, though the changes in diet are reverted if they return to Puerto Rico.[85,117]

Acculturation and Dietary Intake

Dietary acculturation refers to changes in diet patterns and diet-related behaviors that occur as acculturation level increases. Previously held dietary customs and norms may be rejected for those perceived to be desirable in the new culture.

Dietary acculturation can be influenced by psychosocial and environmental factors relating to weight-related behaviors.[105] Traditional psychosocial characteristics pertaining to meal-time may play a protective role in those who are less acculturated, such as the belief of the central role of the family, *familismo*, causing increased socialization and family time during meals, which leads to an increased consumption of fresh foods, a decreased consumption of processed foods, more frequent home prepared meals and fewer meals eaten outside of the home.[105] Environmental factors that play a role in dietary acculturation include food access and availability, cooking skills, social interaction and support, living structure, schedules, and time.[105] Traditional foods may be more difficult to obtain or costly than from their country of origin.[105] Additionally, as the socialization structure changes within the home, families may not be able to maintain the time commitment to home prepared foods and family meals due to work, school, or other time-related activities.[105,151]

In studying dietary acculturation, it is important to consider the complex interplay between social indicators (nativity, socioeconomic status, predominant language, time in the U.S., employment status and occupation, and acculturation level), dietary behavior (mix of traditional or non-traditional foods and food preparation and serving methods), dietary-related environmental factors (food access and availability, cooking skills, social interaction, living structure, time, and schedule), and dietary-related psychosocial factors (health/diet beliefs, attitudes, preference, values, and knowledge).[105] Understanding the complexities related to diet and weight-related behaviors in the Hispanic population can inform the development of successful interventions targeted to their unique needs.[105]

Acculturation and Stress: The Acculturation Gap

Family stress has been associated with an increased risk of childhood obesity.[152] Acculturative stress refers to the impact acculturation has on the onset of physical and mental illnesses.[31] Families with a lower acculturation level often face increased stress and poorer physical and mental health.[153,154]

One main component of acculturative stress in immigrant families is known as the *acculturation gap*; this is the large difference in acculturation levels between generations of immigrants.[155] An acculturation gap often exists between immigrant parents and their children, increasing when the children are born in the U.S..[155] Often, the children become acculturated at a faster rate than their parents, upsetting family dynamics and function, and leading to poorer adolescent well-being.[154,155]

The acculturation gap is critical when considering key cultural constructs, such as *familismo,* or strong feelings of loyalty among family members, and *respeto,* or maintaining hierarchical relationships within age, gender, and social status, as these are a

driving forces behind behaviors in many Hispanic homes.[154-157] Changing behaviors relating to these cultural constructs may have a huge influence on child mental and physical well-being when there is a large gap in the acculturation level between child and parent.[154,155]

Acculturation as a Construct in Health Research

As acculturation is an abstract construct that is fluid in nature, it can be difficult to define and measure.[40] Proxy variables, such as language use or nativity, can be used to estimate acculturation.[158] In addition, many scales that are specific to particular ethnicities have been created to measure acculturation, such as the Acculturation Rating Scale for Mexican Americans (ARSMA), the Bidimensional Acculturation Scale for Hispanics (BAS), and the General Acculturation Index.[31,126,159]

Researchers have identified three main cultural domains that are critical to understanding acculturation and are used in many of the scales.[160] The three main domains of acculturation include: cultural practices, cultural values, and cultural identification.[160-162] Cultural practices include behaviors such as language use, media preference, and choice of friends.[160] Cultural values represent cognitive acculturation, for example the shift in individualism-collectivism which is experienced upon migration to the host country.[160] Cultural identification reflects affective acculturation and attachment to the new culture, for example, the perceived ethnic and national identity of the individual.[160-162] However, most scales that measure acculturation include only the domain of cultural practices, and few include the domains of cultural values and cultural identification.[158,160]

Personal Acculturation: Measures of Unidimensional Acculturation. Unidimensional scales assume that an individual falls into one of two categories of acculturation (i.e., fully acculturated or fully unacculturated).[163] Unidimensional scales rely on several behavioral, cognitive, and attitudinal domains related to acculturation to determine an individual's level of acculturation.[163] Proxy variables—such as generational status, age at immigration, proportion of life spent in the U.S., place of birth, and country of education—can be used to approximate unidimensional acculturation. [163,164]

Unidimensional scales are limited because they assume that adherence to the host culture and maintenance of the origin culture cannot occur simultaneously, forcing individuals to carry one piece of "cultural luggage" and ascribe to one culture over the other, whether it be that of the host or origin culture.[163] In addition, unidimensional scales are limited because they do not consider the dynamic nature of acculturation where an individual may fluctuate being more or less acculturated throughout their life.[163] Commonly used unidimensional scales for Hispanics include: the Short Acculturation Scale for Hispanics, A Brief Acculturation Scale for Hispanics, Acculturation Index for Mexican Americans, The Los Angeles Epidemiologic Catchment Area Acculturation Scale, and the Acculturation Scale for Mexican Americans.[158,163-170]

Short Acculturation Scale for Hispanics. The Short Acculturation Scale for Hispanics (SASH) is a 12-item questionnaire that assesses domains of acculturation relating to cultural and behavioral values, including: 1) language use, (5 items) 2) media use (3 items), and 3) ethnic social relations (4 items).[158] The acculturation score is created by summing the values of the item responses and dividing this sum by the number of items with completed responses.[158,169,170] In factor analysis conducted by Marín et al., three

factors emerged; these three factors together accounted for 67.6% of the total variance in acculturation.[169] The individual factors of Language Use, Ethnic Social Relations, and Media Use accounted for 54.5%, 7%, and 6.1%, respectively, of the variance in acculturation of the Hispanic factor analysis, demonstrating that language use is a strong predictor of acculturation.[169]

A major advantage of this scale is that it has been replicated in multiple studies and has been shown to have good psychometric properties with Hispanics of different origins; for example, the language subscale has an alpha coefficient of 0.92 in the original sample, 0.88 with Mexican Americans, and 0.97 with Cubans living in Miami.[158,169,170] Correlations between proxy variables and SASH are very high, where the overall scale and each subscale correlated highest to language preference; the correlation to the proxy (i.e., variable of language preference) was 0.88 in a study conducted in 2005 by Ellison et al..[170] This demonstrates that a proxy variable for language use may be a suitable alternative to the SASH scale in measuring acculturation.

Brief Acculturation Scale for Hispanics. The Brief Acculturation Scale for Hispanics (BASH) is a 4-item questionnaire that covers the domain of language use and is adapted from the language use subscale of the SASH.[158,167] An acculturation score is created by summing the values of the item responses and dividing this sum by the number of items with responses.[158,167] The questionnaire assesses language used in the home, for reading and speaking, and for thinking.[158,167]

The BASH is useful as there is limited participant burden because of its short length, but there is only evidence of reliability and validity for two Hispanic groups, Mexican Americans and Puerto Ricans.[158,167] Additional psychographic studies likely are

needed to validate the scale across groups.[158,167] However, a strong association has been found with the single-item indicator of language preference; high correlation between the single-item indicator and all convergent validity measures were similar to BASH.[167] The original study conducted by Marín et al., suggests that the single-item indicator of language preference may provide a briefer, yet similarly valid, measure of acculturation.[167]

Acculturation Index for Mexican Americans. The Acculturation Index for Mexican Americans (AIMA) assesses the role of identity, defined as the degree to which individuals feel they are "outsiders" or "insiders" compared to mainstream American culture.[158,166] AIMA assess one domain of acculturation and two domains relating to self-definition: 1) language (3 items), 2) self-definition as an insider (3 items), and 3) self-definition as an outsider (2 items).[158,166] Advantages of the AIMA are that factor analysis found that construct validity correlated with proxies of acculturation including generational status ($r = 0.74$), length of time spent in the US ($r = 0.45$), and ratio of time in the U.S. divided by the age of the respondent ($r = 0.75$).[158,166]

Each of the individual domains had high factor loading. Domain one, language, had high correlations with variables representing language use and accounted for 26% of the variance in the reduced correlation matrix.[166] Language spoken with friends and siblings had the highest factor loading for factor 1, 0.65 and 0.63, respectively.[166] Domain two, self-definition as an insider, had high correlations with variables pertaining to feelings of inclusion and accounted for 25% of the variance in variables pertaining to feelings of integration into the majority culture.[166] Self-definition as an American of Mexican descent had the highest factor loading of factor 2, 0.56.[166] Domain three, self-

definition as an outsider, accounted for the least amount of the variance, 12%.[166] Self-definition had the highest factor loading of factor 3, 0.51.[166] Limitations of the AIMA include that the scale has been tested only with Mexican Americans, and that the three factors of the scale account for a low percentage of the variance associated with acculturation compared to other proxy variables, indexes, and scales.[166]

Los Angeles Epidemiologic Catchment Area Acculturation Scale. The Los Angeles Epidemiologic Catchment Area Acculturation Scale (LAECA) measures language use and preference, ethnic background and identification, ethnic interaction, and culturally linked customs and habits.[158,168] The two main domains of acculturation measured are: 1) language and 2) social activities, as well as ethnic background.[158,168] The total score is computed by summing the 26 items and dividing the total value by the number of items for which there are responses.[158,168] The scale is divided into 9 sections that examine generational status, language preference, language for media and social interactions, ethnic composition of their neighborhood and work environment, time spent participating in cultural practices, paternal and maternal ethnic background, and country where childhood was spent.[158,168]

The LAECA acculturation scale has demonstrated a high degree of internal reliability within the original sample and a high internal consistency has been reported by other researchers.[158] The scale had high internal reliability, with a Cronbach's alpha of 0.97, and high test-retest correlation (r=0.96).[158,168] The first factor, assessing language use, accounted for most of the total variance (62%) of the scale compared to factor two and three which accounted for 6% and 5%, respectively, of the total variance.[218] Language spoken, and language that the individual uses to view TV, uses to think, uses to

read, reads better, and writes better in (0.84, 0.84, 0.83, 0.86, 0.85, and 0.85, respectively) had the highest degree of factor loading compared to other variables in factor one.[218] Ethnicity of the neighborhood had the highest degree of factor loading (0.76) for factor 2.[218] Maternal and paternal ethnic background had higher factor loading (0.83 and 0.81, respectively) compared to generation status of the participant (0.60) for factor 3.[218] Limitations of the scale include that it is significant in length and has only been tested with Mexican Americans.[168] Factor loading of this scale further demonstrates the potential for language use to be used as a proxy of acculturation .[158,168]

Acculturation Scale for Mexican Americans. The Acculturation Scale for Mexican Americans (ASMA) is an acculturation scale administered as a structured interview.[158,165] It focuses on only one domain of acculturation: language.[158,165] The questions assess language preference for the interview, language most often used at home, first language as a child, and whether or not the participant can read in English.[165] The scoring for the scale is accomplished by summing the points for the four items where scores range from 0 to 4 and a higher score indicates a higher degree of acculturation.[158,165] The first two items are scored where 1 = English, 2 = Spanish, and 3 = both equally.[158,165]

A major advantage of this scale is that it is relatively short for participants to complete.[158,165] The scale has demonstrated evidence of reliability, validity, and strong internal consistency.[158,165] In a clinical study, the Guttman coefficient for reproducibility was 0.97 and the coefficient of scalability was 0.90; similar results for both the coefficient for scalability and reproducibility were found in validation studies.[158,165] No psychographic data has been published for this scale.

Personal Acculturation: Measures of Bidimensional Acculturation. Bidimensional scales assume that acculturation entails two independent dimensions: both the maintenance to the origin culture and the adherence to the host culture.[163] The dimensions of these scales include 1) a range from strong adherence to the culture of origin to total neglect and 2) a range from strong adherence to the host culture to total neglect.[163] The first dimension is used to measure how much value is placed on the origin culture and the second is used to measure how much value is placed on the host culture.[163] Measuring these two dimensions separately creates a unique theoretical framework and is a strength of bidimensional scales, allowing individuals to carry two pieces of "cultural baggage", so that they may ascribe to either one culture or both the host culture and origin culture.[163] In addition, bidimensional scales are limited in a similar way to unidimensional scales as they do not consider the fluidity of acculturation.[163] Commonly found bicultural acculturation scales used in Hispanic populations include: the Bidimensional Acculturation Scale for Hispanics, the American and Puerto Rican Cultural Involvement Scales, the Abbreviated Multidimensional Acculturation Scale, the Acculturation Rating Scale for Mexican Americans, and the Acculturation Rating Scale for Mexican-Americans-II.[158]

Bidimensional Acculturation Scale. The Bidimensional Acculturation Scale for Hispanics (BAS) measures acculturation to both Hispanic and non-Hispanic cultures.[158,162,171] It is a 24-item scale where half of the items are specific to acculturation to Hispanic culture and the other half are specific to acculturation to non-Hispanic culture.[158,162,171] There are three subscales: 1) language use (3 items), 2) linguistic proficiency (6 items), and 3) electronic media (3 items).[158,162,171]

Two scores are calculated for each respondent: a score for the 12 Hispanic items and a score for the 12 non-Hispanic items.[158,162,171] The scores are calculated by summing the item values and dividing by the total number of responses answered.[210,220] The two scores are then used to define the level of acculturation for the participant; a score of 2.5 can be used as a cut-off score to indicate a low or high adherence to each cultural dimension.[210,220] For example, if a participant has a score of 2.5 or higher in both cultural dimensions, it would indicate they are bicultural.[210,220] If they had a score of 2.5 or higher in one cultural dimension, such as non-Hispanic, and a score of 2.5 or lower in the other cultural dimension, they would be considered to be more acculturated to the non-Hispanic cultural dimension.[210,220]

A major advantage of this scale is that it has shown to have internal consistencies across populations.[158,162,171] The scale has shown to be reliable with Cronbach's alphas of 0.90 for the Hispanic dimension and 0.96 for the non-Hispanic dimension.[158,162,167,171] The reliability estimates were slightly higher for Mexican American respondents than Puerto Rican respondents (alpha = 0.92 vs. alpha = 0.80).[171] The scale was correlated higher to generation status for Mexican Americans than Puerto Ricans (r=0.74 vs. r=0.4).[171] Additionally, the results correlated higher to length of residency for Mexican American respondents than Puerto Rican respondents (r=.59 vs. r=.46).[171] Those completing the acculturation questionnaire in English (M=16.00) rather than Spanish (M=6.85) had significantly (p<0.0001) higher mean scores of acculturation.[171] The authors concluded that the language factor alone, which was adapted from Marín et al., can be used as a valid and reliable acculturation scale.[171]

American and Puerto Rican Cultural Involvement Scales. The American and Puerto

Rican Cultural Involvement Scales (APRCIS) measures acculturation to both Puerto

Rican and Anglo-American cultures.[158,172] The scales include a total of 18 items where 9

are related to non-Hispanic cultural involvement and 9 items are related to Puerto Rican

cultural involvement, generating two scores.[158,172] Items in the scale relate to preferences

for holidays, values, language use, and pride.[158] The scores are calculated by averaging

the items, where a higher score indicates greater acculturation.[158,172]

An advantage of the scales is that it demonstrates high internal consistency and

construct validity.[158,172] The alpha coefficient for the items measuring American culture

was 0.78 and the alpha coefficient for the items measuring Puerto Rican culture was

0.73.[158,172] Common indicators used for criterion validity, including place of birth, age at

arrival of U.S., and number of years in the U.S. were weakly correlated with the

American (-0.39, -0.37, 0.20, respectively) and Puerto Rican (0.36, 0.25, and -0.13,

respectively) cultural factors.[172] Limitations of the scale are that it is weakly correlated to

indicator variables compared with other acculturation scales, and the scale is designed to

be used only with Hispanics who are of Puerto Rican origin.[158,172]

Abbreviated Multidimensional Acculturation Scale. The Abbreviated Multidimensional

Acculturation Scale (AMAS-ZABB) is a 41-item scale that measures acculturation for

two cultural dimensions: U.S. culture and the respondent's culture of origin.[158,173] The

AMAS-ZABB has three main components: 1) language preference (17 items), 2) cultural

competence (13 items), and 3) self-identified ethnicity (12 items).[158,173] For each of the

subscales, the item scores are averaged to form a total subscale score ranging from 1 to

4.[158,173] The total score is calculated by averaging the three subscales of cultural identity,

language, and cultural competence for each of the two cultural dimensions.[158,173] The higher the score is in the U.S. cultural dimension, the higher their acculturation is to U.S. culture; similarly, the higher the score for the culture of origin dimension, the higher their acculturation is to their home culture.[158,173]

The scales have been shown to be reliable where one study found that the Cronbach's alpha coefficients ranged from 0.90 to 0.97 on the subscales and a second study found that they ranged from 0.83 to 0.97 on the subscales.[158,173] In addition, the scales have demonstrated good internal consistency that has been replicated in studies with diverse participants.[158,173] One disadvantage of this scale is that it is fairly long at 42 items, which could increase participant burden.[158,173]

Acculturation Rating Scale for Mexican Americans. The Acculturation Rating Scale for Mexican Americans (ARSMA) was designed to measure acculturation to Mexican and U.S. culture, as well as an individual's comfort with their home and host cultures.[158,174] The ARSMA is a 28-item scale with 5 sections: 1) comfort with thinking and speaking Spanish (10 items), 2) comfort with understanding the English language and U.S. traditions (7 items), 3) ethnic identity preference (5 items), 4) self-rated ethnic identity (4 items), and 5) comfort with speaking English (3 items).[158,174] The scores are calculated by summing and averaging the item responses.[158,174] A lower score indicates a higher acculturation to Mexican culture and a higher score indicates higher acculturation to U.S. culture.[158]

The alpha coefficient for the total scale was 0.88 and test-retest reliability obtained at a five-week interval from baseline was 0.72.[158,174] The five factor subscales had high alpha coefficients and ranged from 0.82 to 0.86.[158,174] An increasing mean score

for the ARSMA scale was seen with increasing generation since migration of participants.[158,174] Participants completing both the ARSMA and BAS had similar mean scores (2.98 vs. 3.25, respectively).[158,174] Limitations of the ARSMA include its length (29 items) and that it is tailored to individuals of Mexican-origin.[158,174]

Acculturation Rating Scale for Mexican Americans II. The Acculturation Rating Scale for Mexican Americans II (ARSMA-II) is an adaptation of the ARSMA that tries to more broadly apply the scale to assess behavioral and affective aspects of acculturation.[158,175,176] The ARSMA-II has four main components: 1) language preference and use, 2) ethnic identification, 3) cultural heritage and ethnic behaviors, and 4) ethnic interaction.[158,175,176] This questionnaire consists of two scales: 1) the Acculturation Scale which measures integration, 2) assimilation and the Marginality Scale which measures marginalization and separation.[158,176] These scales do not need to be used together to create a score.[158,176]

Scale 1 has 30 items with two subscales: the Anglo Orientation Subscale (AOS) and the Mexican Orientation Subscale (MOS).[158,176] The AOS and MOS scores are derived by averaging responses to the items on the subscales.[158,175,176] An overall score for Scale 1 is calculated by subtracting the MOS score from the AOS score.[158,176] The following scores indicate that the individual is: more Mexican oriented (a score less than -1.33); slightly Mexican oriented bicultural (a score between –1.33 and -0.07); slightly Anglo oriented bicultural (a score between -0.07 and 1.19); strongly Anglo oriented (a score between 1.19 and 2.45); very assimilated (a score greater than 2.45).[158,175,176] Scale 2 includes 18 items in three subscales: Anglo Marginality (ANGMAR), Mexican

Marginality (MEXMAR), and Mexican American Marginality (MAMARG).[158,176] A total score for Scale 2 is the sum of the 18 items.[158,176]

There is evidence of reliability and validity with samples of college students for Scale 1 (acculturation), however, Scale 2 (marginality) lacks validity as an indicator of marginality.[158,176,177] An increasing mean score for the ARSMA scale was seen with increasing generation since migration of participants.[176] Limitations of the ARSMA-II include that it is culturally specific to Mexican Americans and that is very lengthy at 48 items for the entire questionnaire. [176,177]

Acculturation Environment Score (AES). Espinosa de los Monteros et al., have created an acculturation environment score utilizing U.S. census track data.[178] The score relies on three points from census tract data describing the area's population in terms of: 1) percentage foreign-born, 2) percentage foreign-born arriving within 5 years of the census, and 3) percentage of Spanish-speaking households that reported speaking English less than very well.[178] The researchers calculated the environmental score by first standardizing the items and then summing them to represent the neighborhood level of U.S. acculturation.[178] The scale has high internal consistency, with an alpha coefficient of 0.87.[178] A major advantage of the AES is that it only requires the participant's address which can be geocoded to their census tract through the U.S. census website.[178] The variables of interest can be downloaded for all census tracts in the states of interest and a look up function can be used to match the data. This type of score can improve the understanding of an individual's acculturation level, providing additional information regarding their environment.[178] A disadvantage of this score is that it has not been replicated further.[178]

Proxy Measures of Acculturation. More than three dozen acculturation scales have been created to measure acculturation, however, most of the scales are unidimensional, with the few that are bidimensional being highly specific to a particular subgroup (such as Mexican-American), and not generalizable to the heterogeneous population of Hispanics living in the U.S..[179] Many of the scales are extremely lengthy in nature, making them time-consuming and costly to administer.[163,179-181] In addition, many of the scales discussed above are highly correlated with proxy measures of acculturation, particularly language use and generation status.[158] The lengthy scales sometimes used to measure acculturation may not be necessary, especially when researchers are trying to reduce participant burden in terms of survey completion.[158]

Proxies, also known as indicator variables, can be used instead, as they are easy to assess and easily collected via health surveys.[179] Indicator variables that are often used as proxies of acculturation include generation status, age at immigration, language use, length of residency, language of interview, and location of birth.[158,180,181] An initial exposure variable is often used, such as racial or ethnic identity, and then the proxy variables can be used to understand acculturation of a particular group.[181] Language use or preference is the most frequently used as it is the strongest single indicator of acculturation.[179,180] Many researchers feel that the high correlation of language preference to existing acculturation scales demonstrates its utility in indicating acculturation and can be used as an indicator variable.[165-170]

When using a single indicator variable, it is important to proceed with caution because single proxy measures with low validity will result in misclassification and

bias.[179] However, using a proxy variable is useful because it limits participant burden, and in this example, is highly correlated to widely used scales.[165-170]

THEORETICAL UNDERPINNINGS

Theory guided research is needed for researchers to gain insights into the complex interplay of factors leading to childhood obesity.[182] Two theories will inform this study including the Social Ecological Model and Social Cognitive Theory. The Social Ecological Model, as seen in Figure 1, is an organizational model that depicts the complex interplay between policies, environment, interpersonal, and intrapersonal characteristics on health.[182] Social Cognitive Theory describes behavior change as an interplay of environmental, social, and individual factors and can be used to understand an individual's potential and readiness for behavior change.[182] Although the Social Cognitive Theory recognizes the role of environmental conditions, its focus is on the individual's ability to make changes to their environment to best suit their needs.[182] These models together can be used to identify variables to describe the environmental, interpersonal, and intrapersonal baseline characteristics for a population of interest.

Social Ecological Model

Recently, there has been a push for researchers to take a more ecological approach to studying the role of external factors on the development of specific health behaviors.[182] The ecological model has been embraced by large scale public programs internationally and nationally, and has been used in the development of various reports including *Healthy People* 2010, the Institute of Medicine reports on health behavior and childhood

Figure 1: Social Ecological Model- Factors Affecting Child Weight Status
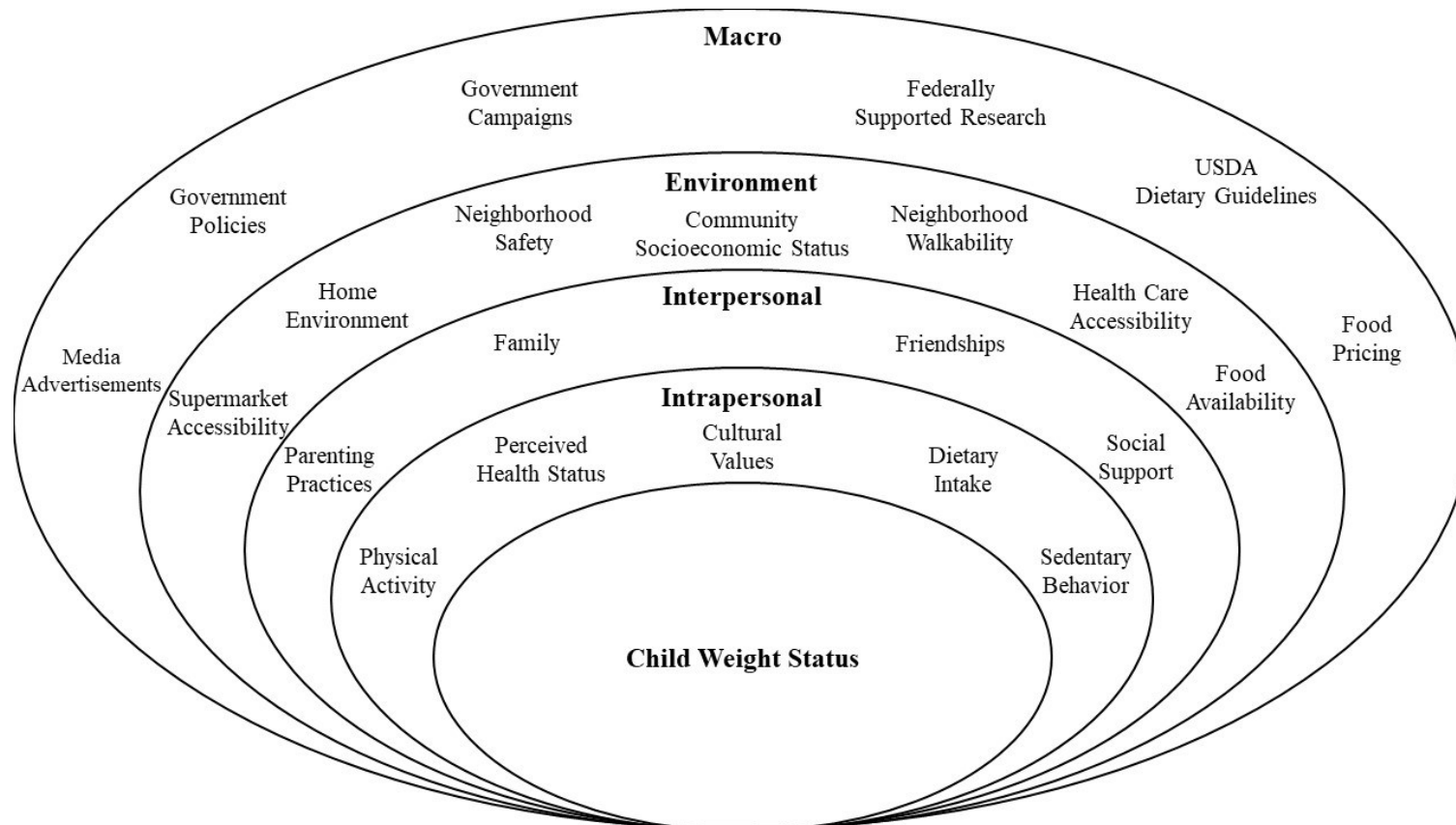
*Figure is adapted from an array of previous reports[60,183-190]

obesity prevention, and the World Health Organization's strategy for diet, physical activity, and obesity.[182]

Ecological models recognize that factors outside of the individual's control can affect their health status.[182] These models provide a comprehensive framework to study the interplay between policies, environmental conditions, social interactions, behaviors, and health outcomes.[182] The model posits that health behaviors are maximized when the government has programs set in place to support healthy behaviors, individuals live in an environment that supports healthy choices and have relationships that are supportive of these decisions, and individuals are actively making healthful decisions.[182]

In addition to genetic factors, the Social Ecological Model recognizes an array of non-biological factors associated with health outcomes, such as child weight status.[182] The Social Ecological Model can be used to describe the macro, environmental, interpersonal (social, relationships), and intrapersonal (biological, behavioral, psychological) characteristics associated with child weight status, as seen in Figure 1.[182]

Macro Characteristics. Macro characteristics refer to the policies and behaviors of government and large corporations that can affect health behavior. At the macro level, influencers of childhood weight status include health systems, government programs, food pricing, and media advertisements.[183,191-193] Health care availability can greatly influence the accessibility of obesity preventative care and supports that encourage attainment and maintenance of healthy weights.[194] Government policies and programs can improve food availability (e.g., Supplemental Nutrition Assistance Program [SNAP], Women, Infants and Children food and nutrition services [WIC]) and promote healthy lifestyles (e.g., Let's Move, Dietary Guidelines for Americans, My Plate).[192,195-197]

Government food price supports and retail food pricing also affect accessibility of foods and can either promote or subvert consumers' abilities to purchase nutrient dense foods.[198] Media reports and advertisements focusing on food can affect consumer cognitions and food choices.[190]

Environmental Characteristics. Environmental factors refer to the factors of the community and neighborhood that can affect health status; those associated with childhood weight status include community-level socioeconomic status, neighborhood walkability and safety, grocery store accessibility and food availability, and access to health care.[2,16,35,97,186,199-212] Communities with lower than average socioeconomic statuses often have reduced neighborhood safety and limited access to health care, grocery stores, and nutrient dense foods, thereby increasing obesity risk.[185,212,213] In contrast, safe, walkable neighborhoods offer opportunities for active play through recreation, walking, and active commuting.[209,212-214] Communities with limited access to health care make it difficult for families to utilize preventive care and screening tools needed to prevent obesity.[211,215] Additionally, in communities that lack grocery stores and nutrient dense foods, it is difficult for families to access foods that promote healthy weights and lifestyles.[183,209,212,216,217]

Interpersonal Characteristics. Interpersonal factors refer to the social interactions that can affect health status; those relating to childhood obesity status include family conflict and cohesion, family organization, social support, and family meals.[187,188,205,218-220] Social support within the family and community also affects the actual performance of weight-related behaviors.[188,189,221] Households with less support for healthy behaviors, more conflict, less cohesion, and more disorganization are less likely to engage in healthy

behaviors which may increase their risk for obesity.[222-229] Additionally, family meals that are calm and free of distractions, like arguments encourage healthier food choices.

Intrapersonal Characteristics. Intrapersonal factors refer to the behaviors and characteristics of the individual that can affect health status; characteristics associated with obesity include perceived health status, physical activity and sedentary behaviors, dietary intake, cultural values, and acculturation level.[2,203-206,209] Parents who perceive that their child is healthy and at a good weight may be less motivated to encourage health behaviors that help prevent childhood obesity such as helping children eat healthfully and be physically active.[186,189,209,230,231] Cultural values are critical to consider when studying health-related cognitions and behaviors because they often strongly influence every day behaviors, including weight-related behaviors.[132-134,137] For example, culture can influence perceptions of healthy weights, food purchasing behaviors, dietary patterns, and parental feeding practices.[29,34,38]

Social Cognitive Theory

The Social Cognitive Theory, developed by Bandura, can be used to study the constructs relating to behavior change.[182] Social Cognitive Theory is based on the idea of reciprocal determinism, or how an individual learns behaviors through interactions with their environments and key role-models, like parents or siblings, thereby making it a suitable behavior change model to pair with the Social Ecological Model. Major constructs of Social Cognitive Theory include observational learning, self-efficacy, self-regulation, and outcome expectations.[182]

Observational Learning. Observational learning refers to learning through the observation of others behaviors and their outcomes.[182] The degree that an individual is

affected by observational learning is dependent on the role of those being observed, where a key social influencer like a parent or sibling will have a greater effect.[182] Additionally, if the risks observed are perceived to be outweighed by the potential benefit, there is a greater chance of leading to positive behavior changes.[182]

Self-Efficacy. Self-efficacy is one of the most broadly applied constructs of Social Cognitive Theory.[182] The construct describes how much confidence an individual has in his or her ability to perform a particular behavior.[182] Individuals who have a higher self-efficacy in their ability to perform a particular behavior will have more success in making behavior changes.[182] Behavioral interventions based in Social Cognitive Theory should include components designed to increase self-efficacy of participants to promote behavior change.[182] Instruments assessing an individual's self-efficacy can provide researchers with insight into an individual's capacity to make changes.[182]

Self-Regulation. Self-regulation emphasizes an individual's capability of dealing with the barriers and risks associated with making behavior change, with the knowledge that the ultimate goal will lead to a positive outcome.[182] Self-regulation can be achieved through goal setting and tracking, and the use of self-rewards for positive changes.[182] Individuals who are better able to self-regulate and track their progress are more successful in making positive behavior changes.[182]

Outcome Expectations. Outcome expectations refers to what an individual believes participating in a particular behavior is likely to lead to and how they value these outcomes.[182] This is based on the idea that people work to maximize benefits and minimize costs.[182] If the outcome of the behavior is something that has value to the individual, he or she is more likely to participate in that particular behavior.[182] This

construct can be applied at a broader level; relating to the idea of social norms, *social outcome expectations* refers to the expectations of how others will react to the behaviors of the individual.[182] Instruments assessing outcome expectations can provide researchers with insight into an individual's willingness to make changes.[182]

CHAPTER THREE

METHODOLOGY

The logic model shown in Figure 2 provides an overview of the short-term,

medium-term, and long-term goals of the research related to obesity prevention in young

children and their mothers. The inputs include time (i.e., researchers' and participants'

time) and money (financial cost to compensate participants). The main outcomes will be

an improved understanding of 1) racial and ethnic differences in weight-related behaviors

and cognitions and 2) the role of acculturation on weight-related behaviors and cognitions

of Hispanics.

Short-term outcomes include healthcare professionals and researchers having an

improved awareness of the effects that race/ethnicity and acculturation level have on

weight-related behaviors and cognitions. Medium-term outcomes include sharing

findings with researchers and health professionals via journal articles and academic

conferences. The long-term outcomes of this study include improved weight related

behaviors and cognitions of Hispanic mothers and their children.

A timeline for the implementation of this study is shown in Table 6. This study

was approved by the Rutgers University Institutional Review Board.

STUDY BACKGROUND

The current study is a facet of the overall HomeStyles project. HomeStyles is

based on Social Cognitive Theory and uses a social ecological framework to target the

environmental, intrapersonal, and interpersonal characteristics of home environments to

promote optimal child health, growth, and weights.[232] Participation in the HomeStyles

randomized controlled trial (RCT) occurred over 12 to 18 months during which

Figure 2: Logic Model- The Influence of Race/Ethnicity and Acculturation on Weight-Related Outcomes in Mothers with Young Children
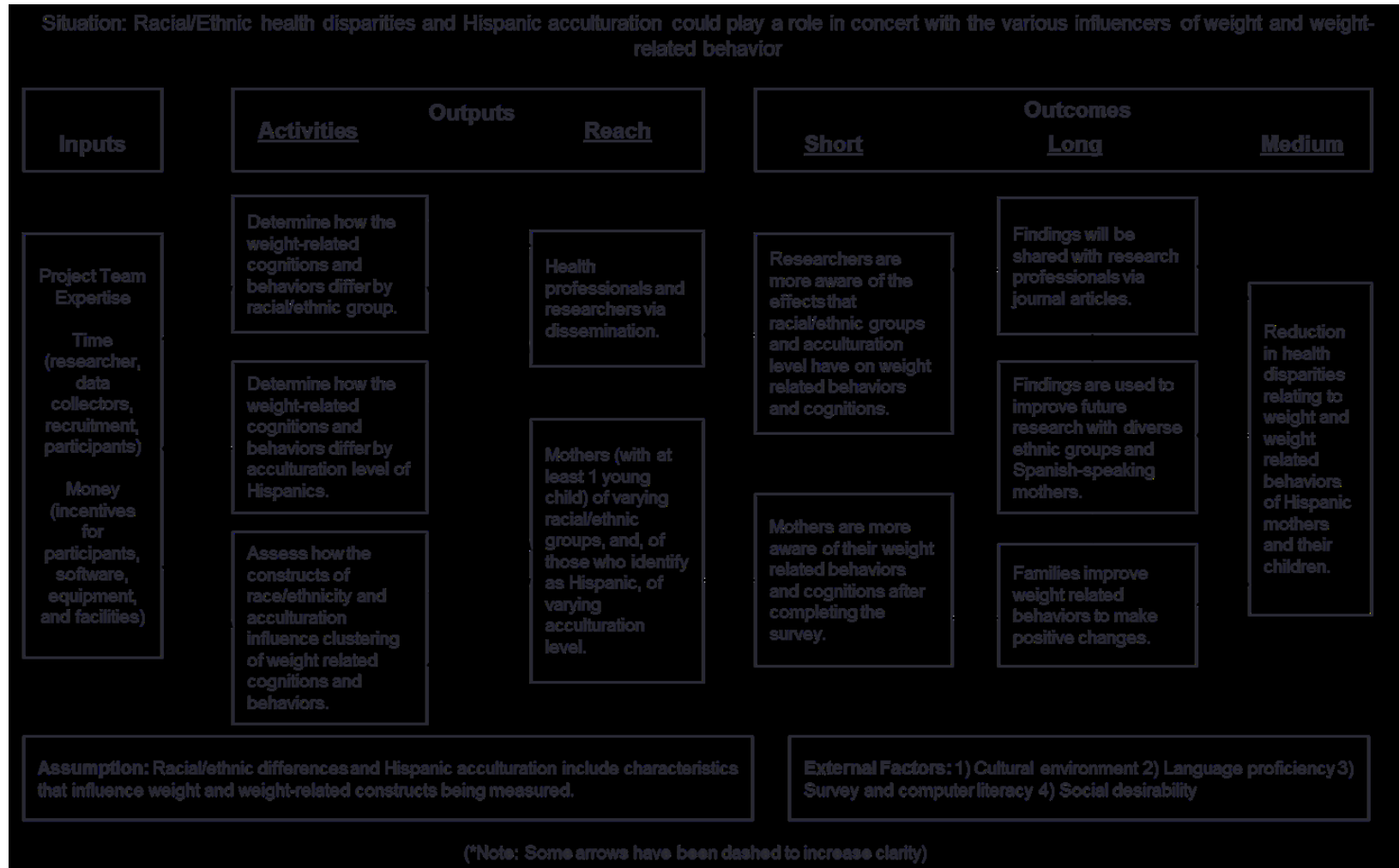
Table 6: Research Timeline

Date of Activity	Activity
January 2013 – November 2015	Conducted Literature Review
	Recruited Participants
	Collected Data
	Wrote Introduction
November 2015 – October 2017	Wrote Literature Review
	Identified Research Questions
	Developed Methodology
December 2017	Defended Proposal
December 2017 – May 2019	Analyzed Data
	Completed Final Dissertation Draft

participants received intervention materials and completed surveys (e.g., baseline, post, follow-up) at set intervals.[232] Participants were randomized into their intervention group after completing the baseline survey.[232] All components of the HomeStyles intervention were designed in a culturally competent manner, utilizing images of families and children from various racial and ethnic backgrounds throughout the materials.[233] Additionally, all HomeStyles materials were offered in English and Spanish.[232] Spanish language materials were developed using in-culture translations and refined with cognitive testing to ensure translations could be broadly applied across Hispanic ethnicities.[232]

Results of the HomeStyles study describing baseline data and RCT outcomes have been reported for a sub-set of the participants.[23,234] The characteristics of home environments of mothers with young children by race/ethnicity and acculturation level of Hispanics have yet to be examined and are the target of the study proposed here. Mothers are the target audience for this study because they tend to be the family food gatekeeper and bear the greatest responsibility for child care.[235]

STUDY DESIGN

The main Research Questions for this study are:

1. How do the weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of mothers and their young child differ by maternal race/ethnicity?

2A. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers with high

or low personal acculturation levels? 2B. How do weight-related characteristics (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of home environments differ among White mothers and Hispanic mothers living in a high or low acculturation environment?

3. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers clustered by their combined acculturation measures?

To date, limited research has examined racial/ethnic differences in weight-related cognitions and behaviors or explored these differences among Hispanic mothers with varying levels of acculturation. This study aims to describe the differences in weight related cognitions and behaviors by race/ethnicity and acculturation level and to ascertain the effect of maternal acculturation level on weight-related cognitions and behaviors. This cross-sectional study used valid and reliable instruments to construct a comprehensive survey completed by participants of the HomeStyles Project at baseline. The Social Ecological Model was used to organize the survey so as to permit the study of environmental, interpersonal, and intrapersonal characteristics related to weight status in households where mothers with young children served as primary household food gatekeepers. The characteristics investigated in this study were previously reported to contribute to obesity risk, weight status, and/or overall health.

SAMPLE AND RECRUITMENT

The study sample was recruited using materials written at a fifth grade-reading level available in both English and Spanish. These materials invited mothers to join a

program to help them "build even happier, healthier, safer families" and included a link

to the eligibility survey for the HomeStyles program. A variety of recruitment methods

were used to reach potential participants, including: word-of-mouth (e.g., recruitment at

farmers markets, county fairs, community events), printed flyers posted at various

locations (e.g., gyms, grocery stores, doctors' offices), phone calls and electronic

announcements sent to community organizations serving families with young children

(e.g., religious organizations, daycares/schools, after school care, summer camps,

extracurricular programs, English as Second Language programs) and workplaces.

Participants also were recruited by a professional study recruitment company. See

Appendices D and E for sample recruitment advertisement in English and Spanish,

respectively.

To be eligible to participate, mothers had to meet 4 criteria: 1) have at least one

child between the ages of 2 to <9 years; 2) be between the ages of 20 and 45 years; 3) be

the main household food gatekeeper (i.e., make all or most decisions related to family

food choices); and 4) live in the study catchment area (i.e., New Jersey or Arizona).

Eligible participants who gave informed consent and completed the baseline survey

received a $15 stipend. The baseline survey was administered from June 2014 to August

2015.

INSTRUMENT DEVELOPMENT

Development of the baseline "**H**ome **O**besogenicity **M**easure of **E**nvironment**S**"

(HOMES) survey is reported in detail elsewhere.[23,236] In brief, development began with a

comprehensive review of the literature to determine variables associated with weight in

children and mothers and find existing validated scales that could be used to assess the

identified weight-related demographic, environmental, behavioral, and psychographic characteristics.[23,236]

When multiple measures were identified for assessing characteristics, experts in nutrition and survey methodology reviewed each measure to determine three things 1) which measure was most relevant to the study sample and purpose, 2) which had the best reliability and validity, and 3) which was easiest to administer and score.[236] Published psychometric data for lengthy instruments (e.g., >6 items) were examined to determine whether they could be shortened to reduce participant burden yet preserve the instrument's integrity.[23,236] In the event that published psychometric and factor analysis data could not be located, three experts in nutrition and survey research examined items in lengthy instruments to identify the most salient items.[23,236]

For constructs lacking a pre-existing instrument or scale, or one that would fit the needs of the study, items were developed *de novo*. The process to develop and refine scales followed Redding et al.'s recommendations for a sequential approach to measurement of health behavior change constructs.[237] These items, as well as items that were heavily modified from their original format, underwent review by subject matter experts to ensure clarity and content validity.[238,239] When scales were extensively changed, iterative expert review and refinement was used to refine scales.[238,239] In addition, the items created *de novo* underwent cognitive testing with participants having similar characteristics to the study population of interest; however, these participants did not complete the baseline survey.[240,241] Cognitive testing of the instruments required participants to read the items aloud and respond orally to open-ended questions posed by the interviewer to gauge understanding and determine how to make the items easier to

understand and faster to complete.[237] Final refinements helped reduced completion time, increase clarity, and correct grammar.[237] All scales were combined into a single online survey. A pretest was conducted with 48 individuals eligible for, but not included in, the baseline survey. The pretest was conducted to ensure the functionality of the online survey, to determine completion time, and to ensure the protocols for scoring the scales were accurate. A field-test with 550 individuals with the same characteristics as, but not participating in, the baseline study was conducted to determine internal consistency, scale unidimensionality, and participant satisfaction. The panel of experts reviewed the final survey and outcomes to confirm its appropriateness to study purpose and audience.[236]

Using an online-portal for survey collection allows data to be obtained in a manner that is easier for the researchers to manage and more convenient for participants to access than other data collection modes.[240] Online surveys facilitate data collection by efficiently collecting and storing large amounts of data from numerous participants, which saves time and costs for researchers.[240] In addition, online administration allows participants to complete the survey at a time that is most convenient to them and gives participants the option to take breaks throughout the survey.[240] Online surveys can help to reduce social desirability bias and allow researchers to reach groups that would be otherwise difficult to access.[240,242] Social desirability bias is reduced by the confidential nature and perceived anonymity of online surveys, which enables participants to more accurately answer questions that are sensitive in nature.[242] To reduce social desirability, the survey began with a preamble statement explaining that there were no right or wrong responses and that all responses are confidential and acceptable.[242] See Appendices B and C for the final online HOMES survey in English and Spanish, respectively.
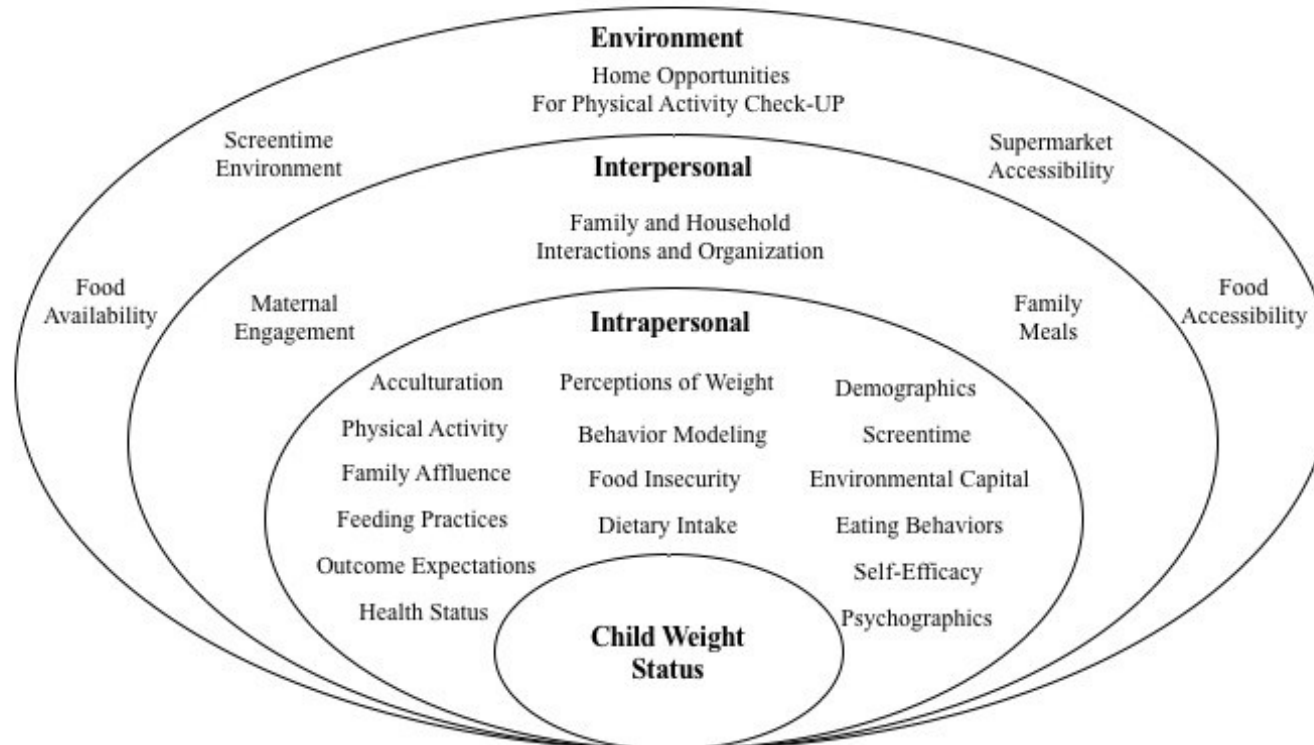
HOMES INSTRUMENT COMPONENTS

The HOMES survey comprehensively assesses components of the home environments of young children. As seen in Figure 3, the HOMES survey examined three realms of the Social Ecological Model of the home environment examined include: intrapersonal characteristics (mother and child), interpersonal characteristics, and home environment characteristics. Social Cognitive Theory guided the development of variables to assess readiness and potential for behavior change.

Mothers reported information about their home, family, and self, as well as specific information about one of their children between the ages of 2 and >9 years. Mothers with two or more children in the targeted age group were instructed to report on the child born closest to noon on June 7th (time and date generated randomly).[243] See Appendix A for all survey items, response choices and scoring methodology of the HOMES survey.

Maternal Intrapersonal Characteristics

Intrapersonal characteristics include demographics and characteristics that relate to knowledge, attitudes, perceptions, values, belief systems, and behavior. Intrapersonal characteristics to be examined in this study include maternal demographic characteristics, demographic characteristics of the partner/spouse, family affluence and environmental health capital, food insecurity, acculturation (personal and environmental), home food gatekeeper, maternal health status, maternal physical activity, screentime, and

Figure 3: The HOMES Survey Components Organized by the Social Ecological Model

Environment
Home Opportunities
For Physical Activity Check-UP

Screentime
Environment

Supermarket
Accessibility

Interpersonal

Family and Household
Interactions and Organization

Food
Availability

Maternal
Engagement

Intrapersonal

Family
Meals

Food
Accessibility

Acculturation
Perceptions of Weight
Demographics

Physical Activity
Behavior Modeling
Screentime

Family Affluence
Food Insecurity
Environmental Capital

Feeding Practices
Dietary Intake
Eating Behaviors

Outcome Expectations
Self-Efficacy

Health Status
Psychographics

**Child Weight
Status**

transportation mode, maternal behavior modeling and encouragement of physical activity and media use, maternal sleep time and quality, maternal dietary intake, maternal eating behaviors, maternal feeding practices, maternal outcome expectations for healthy behaviors, maternal self-efficacy for promoting healthy behaviors, maternal weight status, and maternal psychographic characteristics. See Table 7 for a description of the validity and reliability of scales used. See Appendix A for all survey items, response choices and scoring methodology of the HOMES survey.

Maternal Demographic Characteristics. This section assesses demographic characteristics of the child's mother, including: birth country, highest level of education, occupation, hours of paid employment in a given week, marital status, age, number of children under age 18, race/ethnicity, language spoken at home and region of residence.

Family Affluence and Environmental Health Capital. This section assesses family affluence and environmental health capital. This section includes the 4-item Family Affluence Scale and utilizes zip code data to assess median income of the family.

Family Affluence Scale (FAS). The 4-item Health Behavior in School-Aged Children (HBSC) Family Affluence Scale III was used to assess family affluence. The FAS is a valid and reliable indicator of family affluence.[244,245] Comparisons of the FAS to Gross Domestic Product in 35 countries showed good criterion validity with a rank order correlation of 0.87.[244,245] The scale uses varied response choices to determine total number of vehicles owned by the family (i.e., 0, 1, 2 or more, scored 0, 1, 2, respectively), whether the mothers have their own bedroom, total number of computers/laptops in the home (i.e., 0, 1, 2, 3 or more, scored 0, 1, 2, respectively), and how frequently the family traveled on vacation in the last year (i.e., never, 1 time, 2

Table 7: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Maternal Demographic Characteristics	1	10	N/A	N/A	N/A	N/A	N/A
Demographic Characteristics of Partner/ Spouse	1	4	N/A	N/A	N/A	N/A	N/A
Family Affluence and Environmental Health Capital	1	4	HBSC Family Affluence Scale (FAS)[244,245]	4	Count; Likert-type frequency responses	Varies.	Studies have shown that the FAS is a valid and reliable indicator of family affluence. Comparisons of the FAS to Gross Domestic Product in 35 countries showed good criterion validity with a rank order correlation of 0.87.[244,245]
Food Insecurity	1	2	2-Item Screen to Identify Families at Risk for Food Insecurity (FI screen)[246]	2	Likert-type true/false	Caregivers of children from birth to 3 years of age.	The FI screen has been shown to have high sensitivity (97%), good specificity (83%), and convergent validity.[246]
Home Food Gatekeeper	1	1	Items created *de novo*	N/A	N/A	N/A	N/A

Table 7 continued: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Acculturation	2	4	Short Acculturation Scale for Hispanics (SASH)[169,170]	12	Likert-type for frequency of language use	Hispanic and Non-Hispanic White adults.	The scale demonstrated reliability (α coefficients ranged from 0.78 to 0.90 for the three domains) and validity. [169,170]
			Area-Based Indicators of Acculturation[178]	1	Zip Code fill in	Women between the ages of 35-65.	The participants also completed the ARSMA II which was used for validation. The tract-level data accounted for 79.14% of the variance. All factor loadings were greater than 0.70.[178]
Maternal Health Status	4	10	Patient Health Questionnaire-2 [247]	2	Likert-type frequency responses	Mothers, adolescents, postpartum mothers of 0 to 1-month old babies, and adults in clinical settings.	Valid and reliable with good sensitivity and specificity for detecting depression.[247]
			Health Related Quality of Life Scale (HRQOL)[53,101]	4	Likert-type agreement responses	Varies.	Numerous studies have confirmed the validity and reliability of the HRQOL Scale.[53,101]
			Items created *de novo*	N/A	N/A	N/A	N/A
Maternal Physical Activity, Screentime, and Transportation Mode	3	5	International Physical Activity Questionnaire (IPAQ)[248]	27 (long form); 7 (short form)	Frequency responses	Varies.	Repeatable data has been reproduced in both the short and long form (Spearman's p clustered around 0.8).[248]
			Items created *de novo*	N/A	N/A	N/A	N/A

Table 7 continued: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use	8	18	Parental Measures- Support, Enjoyment, and Importance Scale[249]	4 scales; exact number of items is unknown	Yes/No; Likert-type frequency responses; continuous variables	Parents of children in grades 4-12.	Test-retest reliability varied from r=0.67 to r=0.81.[249]
			Home Environment Survey (HES)[250]	126	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 8-12.	Reliability and validity estimates were varied but generally high (0.22-1.00 and 0.07-0.96, respectively).[250]
			Healthy Home Survey (HHS)[251]	113	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 3-8.	Most domains showed near perfect agreement between the test and re-test (Kappa statistics were 0.36-0.88; percent agreement ranged from 42%-98%).[251]
			Physical and Nutritional Home Environment Scale[252]	75	Yes/No; Count	N/A	N/A
			Project on Human Development in Chicago Neighborhoods[253]	136	Varied by scale	Population-based study of mothers.	The internal reliability of the scale was 0.91.[253]

Table 7 continued: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Maternal Sleep Time and Quality	2	2	Pittsburgh Sleep Index[254,255]	24	Open-ended hours of sleep; Agreement responses	Adults, including those with chronic disease.	Acceptable measures of internal consistency and validity were obtained in the original study (kappa=0.75).[254,255]
Maternal Dietary Intake	3	32	Fat and Fruit Vegetable Intake Screener[256]	22	Frequency Responses	Adults between the ages of 20-69.	Spearman correlations ranged from 0.6-0.7 for nutrient estimates.[256]
			Block Kid's Food Screener[222]	41	Frequency responses	Adolescents between the ages of 10-17.	De-attenuated correlations ranged from 0.52-0.87.[222]
			Fast Food/Beverage Screener[257]	22	Frequency responses	Adolescents between the ages of 11-18.	Spearman correlations and kappa statistics were >0.6 for most items.[257]
			Sugar-Sweetened Beverage Intake Among College Students[258]	15	Frequency Responses	N/A	N/A
Maternal Eating Behaviors	4	12	Three-Factor Eating Questionnaire[259-261]	51	Likert-type True/False responses	Middle-aged men and women.	Good reliability and validity have been shown.[259-262]
			Food Adventurousness Scale (FAS)[263]	1	Likert-type True/False responses	Adults between the ages of 18 to 55.	The item is correlated with frequency of trying unfamiliar foods (r=0.61).[263]
			Food Neophobia Scale[264 262]	10	Likert-type responses	Sibling pairs and their mothers.	The food neophobia scale was significantly related to two of the temperament dimensions: emotionality and negative reactions to food (r=0.28 and 0.83, respectively).[262,264]

Table 7 continued: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Maternal Feeding Practices	7	21	Parent Feeding Style Questionnaire[265]	25	Likert-type frequency responses	Normal and obese parents of children living in the U.K..	Good internal reliability coefficients (Cronbach's α scores ranged from 0.65 to 0.85) and test-retest reliability (Pearson correlations ranging from r=0.76 to r=0.83).
			Child Feeding Questionnaire[266]	31	Likert-type agreement responses; Likert-type frequency responses	Parents of children between the ages of 2 to 11.	Confirmatory factor analysis done to refine the original items. 4 items dropped to make the scale a good fit in a Hispanic sample.[266]
			Caregiver's Feeding Styles Questionnaire[267]	19	Likert-type frequency responses	Black, White, and Hispanic families with children of varying ages.	Test-retest validity has been very good (scores ranged from r=0.82 to r=0.85).[267]
			Project EAT Survey[268]	12	Frequency responses	Adolescents and young adults.	The test-retest reliabilities for individual items ranged from r=0.54 to r=0.70.[252,269]
			FEEDS Survey[270]	8	Likert-type agreement	Parents of children between the ages of 3 to 7.	Good validity and acceptable internal reliability (α coefficients ranged from 0.65 to 0.85).[270]
			Physical and Nutritional Home Environment Scale[252]	75	Yes/No; Count	N/A	N/A
			Overt/Covert Control Scale[271]	10	Likert-type frequency responses	Parents of children between the ages of 4 to 11 living in England.	Good internal reliability (Cronbach's α=0.71).[271]

Table 7 continued: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Maternal Outcome Expectations for Healthy Behaviors	2	12	Parental Measures- Support, Enjoyment, and Importance Scale[249,272]	4 scales; exact number of items is unknown	Yes/No; Likert-type frequency responses; continuous variables	Parents of children in grades 4-12.	Test-retest validity varied from r=0.67 to r=0.81.[249,272]
Maternal Self-Efficacy for Promoting Healthy Behaviors	4	27	Items created *de novo*	N/A	N/A	N/A	N/A
Maternal Weight Status and Weight Perception	4	12	Child Feeding Questionnaire[266]	31	Likert-type agreement responses; Likert-type frequency responses	Parents of children between the ages of 2 to 11.	Confirmatory factor analysis done to refine the original items. 4 items dropped to make the scale a good fit in a Hispanic sample.[266]
			Body Figure Perceptions[273,274]	5	Likert-type responses with images where 1=thinnest and 7=heaviest	Preadolescent children.	Test-retest validity was adequate (r ranged from r=0.38 to 0.71).[273]
			Items created *de novo*	N/A	N/A	N/A	N/A

Table 7 continued: HOMES Survey- Maternal Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Maternal Psychographic Characteristics	5	12	Confusion, Hubbub, and Order Scale (CHAOS)[275]	15	Likert-type True/False	Families from psychiatric population and stroke rehabilitation, and college students.	Good reliability in various samples (Cronbach's α=0.92).[275]
			Need for Cognition Scale[276,277]	18	Likert-type agreement responses	College students.	
			Perceived Stress Scale (PSS)[278]	4	Likert-type frequency responses	Varies.	Adequate test-retest validity. Coefficient alpha for the PSS in a sample of older mothers was 0.91. It has demonstrated adequate reliability in a sample of older mothers (Cronbach's α=0.91).[278]
			Parenting satisfaction and efficacy measure[279]	17	Likert-type agreement responses	Parents of children between the ages of 5 to 12.	The parenting efficacy subscale demonstrates good reliability (Cronbach's α=0.76).[279]

times, 3 or more times, scored 0, 1, 2, 3, respectively). The total number of points from the 4 items summed for a total score range of 0-9. Higher scores are a proxy for greater family affluence.

Environmental Health Capital. Environmental health capital can be estimated based on the U.S. Census Bureau zip code data for each of the participant's homes for these four variables: income, number of supermarkets, population density, and percent owner occupied housing. Scores were calculated by awarding 1 point to each variable when the value was at or above the median threshold for the participant's state of residence and 0 points if the value was below the median threshold. Total scores are calculated by summing the individual scores with a total score range of 0-4. The environmental health capital scores are categorized as low (0 to 1), middle (2 to 3) and high (3 to 4) environmental health capital.

Food Insecurity. This 2-item screener assesses the food insecurity of the family. The scale was developed by Hager et al..[246] The food insecurity screener has shown to be a valid and reliable tool; it has high sensitivity (97%) and specificity (83%), and convergent validity.[246] The scale uses 4-likert type response choices (definitely false, mostly false, mostly true, definitely true) that were scored 1 to 4, respectively. The 2-items are averaged for an overall score with a range of 1 to 4. Higher scores indicate greater food insecurity.

Home Food Gatekeeper. This 1-item scale is to describe who makes the decisions regarding the food available and served in the home. The four response choices (me, my partner/spouse, my kids, someone else) were scored as 1 to 4, respectively. This item was created *de novo*.

Acculturation. This section includes two scales to measure personal and acculturation environment using proxy variables and census tract data, respectively. Proxy variables have been shown to be useful in estimating the level of personal acculturation compared to lengthier scales. Census tract data can be used to give researchers insight into acculturation environment where the participant lives by creating an area-based proxy.

Personal Acculturation. This 3-item scale assesses acculturation using proxy variables, which include the language used to complete the survey, the language used most commonly in the home, and country of birth of the mother. Language and generation status have been shown to be highly indicative of acculturation as that they are both highly correlated with lengthier acculturation scales.[165-170,178] Therefore, a 3-item scale assessing language use in the home and for the survey, and generation status were used.

Language use for the survey was determined by offering the participants the ability to complete the survey in English or Spanish. A response of English will be scored as 0 and a response of Spanish will be scored as 1. Language use in the home had 3 response choices that included "English", "Spanish", and "Other, please specify". For those selecting other, they were reclassified depending on their response as Spanish or both Spanish and English. A response of English will be scored as 0, a response choice of both will be scored as 1, and a response of Spanish will be scored as 1. Country of birth of the mother had 2 response choices that included "United States" and "Other, please specify". A response of United States will be scored as 0 and a response of other will be scored as 1. This item demonstrates whether or not the participant is an immigrant and therefore first generation American.

Participants will be scored as most acculturated, with a score of 0, if they reported that they were born in the U.S., spoke English in the home, and choose to complete the survey in English. Participants will be scored as least acculturated, with a score of 3, if they reported that they were born outside of the U.S., spoke Spanish in the home, and choose to complete the survey in Spanish.

Acculturation Environment. This item assesses the individual's acculturation environment using their reported zip-code data that has been geocoded as census tract data.[178] The census tract data will allow a score to be calculated using extracted data for 3 items: percentage foreign-born individuals, percentage foreign-born individuals arriving within 5 years prior to the census, and percentage of Spanish-speaking households reporting speaking English less than very well.[178]

The data will be standardized for each state (New Jersey and Arizona). Scores are calculated by awarding 1 point to each variable when the value was at or above the median threshold for the participant's state of residence and 0 points if the value was below the median threshold. Participant's acculturation environment score will be based on the standardized score for their state. The three scores will be summed for a range of 0-3. Participants with a higher score live in an environment that is less conducive to acculturation.

Maternal Weight Status. This section describes the mother's height and weight, which was used to calculate BMI. The data collected from mothers include: the mother's height and the mother's weight. It should be noted that not all participants submitted anthropometric data for themselves as it was asked in a separate survey.

Maternal Health Status. This section describes the depression severity, and health-related quality of life of the mother. This section includes 3 scales.

Depression Severity. This 2-item scale is used to assess the mother's depression severity. This scale was derived from the Patient Health Questionnaire.[247] The Patient Health Questionnaire is a valid and reliable scale with good sensitivity and specificity for detecting depression.[247] The 4-likert-type response choices (not at all, several days, more than half the days, nearly every day) were scored 1 to 4, respectively. Scale scores were calculated by averaging the responses. A higher score indicates greater depression severity.

Health-Related Quality of Life. This scale is used to describe the mother's mental and physical health. The scale is derived from the Center for Disease Control and Prevention's Health Related Quality of Life Scale.[53,101] Numerous studies have confirmed the validity and reliability of the Health Related Quality of Life Scale.[53,101]

The scale includes 4-items that address the mother's quality of life in terms of their general health rating, how frequently the mother's physical and mental health were not good in the past month, and how often poor physical or mental health prevented her from performing usual activities. For the item assessing general health, there are 5-likert-type response choices (excellent, very good, good, fair, poor) that were scored 5 to 1, respectively. A higher score indicates that mothers rate their overall health as being better. For the three items assessing frequency, there was a drop-down response choice (0 days to 31 days), which was scored 1 to 31, respectively. The 3 frequency items are averaged for an overall score. A lower score indicates a mother perceives that their quality of life (both physical and mental) is better.

Maternal Physical Activity, Screentime, and Transportation Mode. This section assesses the maternal physical activity level, maternal screentime, and maternal typical mode of transportation.

Maternal Physical Activity Level. This 3-item scale assesses the mother's physical activity level. The scale was modified from the International Physical Activity Questionnaire, a valid and reliable instrument.[248,249] This scale assesses how frequently the mother participates in light, moderate, or vigorous physical activity. Items in this scale reported how frequently in days/week mothers spent participating in the three categories of physical activity.

The IPAQ categorical scoring method was modified to account of relative intensity of activity to enable scoring categories (sedentary, moderate, and high) by weighting vigorous activity higher than moderate activity and walking, and moderate activity as higher than walking.[248] Scores were weighted where the total score was a summation of the number of days spent participating in vigorous activities multiplied by three, participating in moderate activities multiplied by two, and walking for at least ten minutes. The weighted scale has a score range of 0 to 42. Higher scores indicate that the mother participates in more vigorous physical activity per week.

Maternal Screentime. This 1-item scale assesses how much time the mother spends each day participating in total screentime to assess whether the mother met or did not meet screentime guidelines.[280] The item was created *de novo*. Higher scores indicate that the mother spends more time participating in screentime.

Maternal Typical Mode of Transportation. This 1-item scale assesses what mode of transportation is most frequently used by the mother. The item was created *de novo*. Non-

motorized transportation is considered to be the most active, followed by public transportation, with motorcycles and cars being the last active mode of transportation. Response choices (walk and bike, subway, train, bus, and motorcycle and car) are scored 2 to 0, respectively. A higher score indicates that the mother uses a mode of transportation that requires more physical activity when traveling to do errands.

Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use. This section assesses value placed on physical activity for self (mother) and child, encouragement and facilitation of physical activity, importance of modeling physical activity, importance of not modeling sedentary behavior, mother and child co-physical activity, modeling physical activity, and modeling sedentary behavior. Most items were adapted from the following validated and reliable existing surveys: Parental Support, Importance, and Enjoyment Scales, the Physical and Nutritional Home Environment Inventory, the Healthy Home Survey, the Home Environment Survey, and the Chicago Neighborhood Inventory.[250-252,281] Most items below had 5-likert type response choices (strongly disagree, disagree, neither, agree, strongly agree) and were scored as 1 to 5, respectively, except those that required the mother to report the frequency of activity in the home. For items reporting frequency, 7-likert type frequency response choices (almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday) were scored as 0 to 7, respectively. The Likert-type response choices were scored as 1 to 5, respectively. Scale scores were determined by averaging the responses. This section includes 8 scales.

Value Placed on Physical Activity for Self. This 2-item scale describes the value that the mother places on physical activity for herself. A higher score indicates that the mother places greater value on being physically active for herself.

Value Placed on Physical Activity for Child. This 2-item scale describes the value that the mother places on physical activity for her child. A higher score indicates that the mother places greater value on being physically active for her child.

Encouragement and Facilitation of Physical Activity. This 5-item scale assesses whether or not the mother encourages the child to be physically active. A higher score indicates greater mother encouragement of child physical activity.

Importance of Modeling Physical Activity. This 2-item scale assesses whether the mother places value on modeling physical activity. The item was created *de novo*. A higher score indicates that the mother places greater value on modeling physical activity for their children.

Importance of Not Modeling Sedentary Behavior. This 1-item scale assesses whether the mother places value on not modeling sedentary behavior. The item was created *de novo*. Higher scores indicate that the mother places greater value on not modeling sedentary behaviors for their children.

Mother and Child Co-Physical Activity Frequency. This 2-item scale assesses how frequently the mother and child participate in co-physical activity. The scale was created *de novo*. Higher scores indicate that mothers do more modeling of physical activity with their child.

Modeling Physical Activity. This 2-item scale assesses how frequently the mother models moderate and vigorous physical activity. Higher scores indicate that mothers do more modeling of physical activity with their child.

Modeling Sedentary Behavior. This 2-item scale assesses how frequently the mother models moderate and vigorous physical activity. Higher scores indicate that mothers do more modeling of physical activity with their child.

Maternal Sleep Time and Quality. The questions in this section assess maternal sleep time and maternal sleep quality. The scales were adapted from a validated, shortened version of the Pittsburgh Sleep Quality Index.[254,255]

Maternal Sleep Time. This 1-item scale assesses the duration of sleep of the mother at night during a given week in hours and minutes. Higher scores indicate that the mother is sleeping more. Scores can be used to determine whether the mother is meeting or not meeting recommendations for sleep.

Maternal Sleep Quality. This 1-item scale assesses the quality of sleep of the mother in a given month. This item had 5-likert type response choices (very bad, bad, OK, good, very good) and were scored as 1 to 5, respectively. Higher scores indicate that the mother perceives her sleep quality as better.

Maternal Dietary Intake. This section assesses maternal fruit, vegetable and fiber intake, maternal dietary fat intake, and maternal beverage intake. The items were adapted from valid and reliable scales, including: the Block Fruit-Vegetable-Fiber Screener, the Block Dietary Fat Screener, Block Kids' Screener, Fast Food/Beverage screener and an adapted beverage screener.[222,256,257] All items required the mother to report the frequency of activity in the home.

Maternal Fruit, Vegetable, and Fiber Intake. This 7-item scale is used to assess maternal intake of fruits, vegetables, and fiber. The frequency response choices (less than 1 time a week, 1 day a week, 2 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week, more than 1 time a day) were scored as 0 to 8, respectively. The score is calculated by summing the items; the score can be divided by 7 to assess daily intake. The scores can be used to calculate the following nutrient intakes according to prediction equations: fruit/vegetable servings per day, and estimates for vitamin C, potassium, magnesium, and dietary fiber intake.

Maternal Dietary Fat Intake. This 17-item scale is used to assess maternal intake of dietary fat. The frequencies response choices (1 time a month or less, 2 to 3 times a month, 1 to 2 times a week, 3 to 4 times a week, 5 or more times a week) were scored as 1 to 5, respectively. The score is calculated by summing the 17 items. The scores can be used to calculate the following nutrient intake according to prediction equipment: total fat, saturated fat, percent fat, and dietary cholesterol.

Maternal Beverage Intake. This 7-item scale is used to assess maternal intake of sugar-sweetened beverages. The frequencies response choices (less than 1 time a week, 1 day a week, 2 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week, more than 1 time a day) were scored as 0 to 8, respectively. The score is calculated by summing the 7 items; the score can be divided by 7 to assess daily intake. The scores can be used to calculate the following nutrient intake according to prediction equipment: sugar from sugar-sweetened beverages, calories from sugar-sweetened beverages, servings of sugar-sweetened beverages per day, maternal beverage intake of sugar,

maternal beverage intake of calories, maternal milk intake per day, and maternal fruit and vegetable intake per day.

Maternal Eating Behaviors. These scales assess dimensions of the mother's eating style including disinhibited eating, emotional eating, dietary restraint, and food adventurousness. The scales were adapted from existing valid and reliable scales, including: the Three-Factor Eating Questionnaire, Food Adventurousness Scale, and the Food Neophobia Scale.[259-264] The scales have been shortened based on factor analysis and previous research to reduce participant burden.[259-261] All items had 4-likert type response choices (definitely false, mostly false, mostly true, definitely true) and were scored as 1 to 4, respectively. Scale scores were determined by averaging the responses.

Disinhibited Eating. This 3-item sub-scale assesses a mother's temporary loss of control over eating behaviors. Higher scores indicate greater disinhibited eating.

Emotional Eating. This 3-item sub-scale how emotions influence a mother's urge to eat or overeat. Higher scores indicate greater emotional eating.

Dietary Restraint. This 4-item sub-scale assesses intention of the mother to restrict or regulate her intake to prevent weight gain. The 4-items are averaged for an overall score with a range of 1-4. Higher scores indicate greater dietary restraint.

Food Adventurousness. This 2-item scale assesses the mother's acceptance of new/unfamiliar foods. Higher scores indicate greater food adventurousness.

Maternal Feeding Practices. This section is to describe the feeding practices of the mother. This section will examine healthy eating modeling, use of food and non-food rewards during meals, overt control of intake, covert control of intake, pressures used during child eating, and restriction over child food choices. The scales were adapted from

valid and reliable pre-existing surveys, including the Parent Feeding Style Questionnaire, the Child Feeding Questionnaire, the Caregiver's Feeding Styles Questionnaire, the Project EAT survey, the FEEDS survey, the Physical and Nutritional Home Environment Survey, and the Overt/Covert Control Scale.[265,267,270,271,282] All items had 5-likert type response choices (strongly disagree, disagree, neither, agree, strongly agree) and were scored as 1 to 5, respectively. Scale scores were determined by averaging the responses.

Healthy Eating Modeling. This 4-item scale assesses maternal modeling of healthy eating. A higher score indicates greater mother modeling of healthy eating behaviors.

Use of Food and Non-Food Rewards During Meals. The scale uses two subscales to determine whether the mother uses rewards (foods [instrumental feeding] or non-food) as strategy to get their child to eat. The Use of Food Rewards sub-scale includes 3 items. A higher score indicates greater frequency of using food rewards for child eating and behavior. The Use of Non-Food Rewards sub-scale includes 2 items. A higher score indicates greater frequency of using non-food rewards for child eating and behavior.

Overt Control of Intake. This 4-item scale assesses whether the mother overtly controls their child's food intake. A higher score indicates greater overt control of child food intake.

Covert Control of Intake. This 1-item scale assesses whether the mother covertly controls their child's food intake. A higher score indicates greater covert control of child food intake.

Pressures Child to Eat. This 3-item scale assesses whether or not the mother pressures their child to eat. A higher score indicates greater maternal pressures for child to eat.

Restricts Child Food Choices. This 2-item scale assesses whether or not the mother restricts the child's food intake of salty and sweet foods. A higher score indicates greater restriction of the child's food choices.

Maternal Outcome Expectations for Healthy Behaviors. This section assesses maternal outcome expectations for healthy eating and physical activity. The scales were adapted from a previously validated and reliable scale: the Parental Support, Importance, and Enjoyment Scales.[283] All items had 5-likert type response choices (strongly disagree, disagree, neither, agree, strongly agree) and were scored as 1 to 5, respectively. Scale scores were determined by averaging the responses.

Maternal Outcome Expectations for Healthy Eating. This 6-item subscale assesses maternal outcome expectations for healthy eating. Higher scores indicate that the mother has greater outcome expectations for healthy eating.

Maternal Outcome Expectations for Physical Activity. This 6-item subscale assesses maternal outcome expectations for physical activity. Higher scores indicate that the mother has greater outcome expectations for physical activity.

Maternal Self-Efficacy for Promoting Healthy Behaviors. This section assesses maternal self-efficacy for promoting healthy behaviors that include promoting obesity protective behaviors in children, better child eating and weight management, increased child physical activity, and better maternal health behaviors. Items were created *de novo* based on HomeStyles Health guide topics. All items had 4-likert type response choices (not at all confident, not confident, quite confident, very confident) and were scored as 1 to 4, respectively. Scale scores were determined by averaging the responses.

Self-Efficacy for Promoting Obesity Protective Behaviors in Children. This 12-item subscale addresses maternal self-efficacy for promoting obesity protective behaviors. Higher scores indicate greater confidence in promoting obesity protective behaviors in children.

Self-Efficacy for Child Eating and Weight Management. This 7-item subscale addresses maternal self-efficacy for promoting child eating and weight management. Higher scores indicate greater confidence in promoting better child eating and weight management.

Self-Efficacy for Child Physical Activity. This 3-item subscale addresses maternal self-efficacy for promoting child physical activity. Higher scores indicate greater confidence in promoting increased child physical activity.

Self-Efficacy for Parent Health Behaviors. This 5-item subscale addresses maternal self-efficacy for participating in positive parent health behaviors. Higher scores indicate greater confidence in participating in positive parent health behaviors.

Maternal Psychographic Characteristics. This purpose of this section is to assess the weight- and health-related psychographics of mothers of young children. This section includes the following constructs: personal organization, need for cognition, confidence in parenting skills, perceived stress, and self-efficacy of stress management. The scales were adapted from previously validated and reliable scales, including: the Confusion, Hubbub and Order Scale, the Need for Cognition scale, the Perceived Stress Scale, and the parenting satisfaction and efficacy measure.[275-279] All items, except those relating to stress, had 5-likert type response choices (strongly disagree, disagree, neither, agree, strongly agree) and were scored as 1 to 5, respectively. For items relating to stress, which include perceived stress and self-efficacy of stress management, 4 likert-like frequency

response choices (not at all, several days, more than half the days, nearly every day) were scored as 1 to 4, respectively. Scale scores were determined by averaging the responses.

Personal Organization. This 4-item scale describes parent planning and personal organization. Higher scores indicate the mother has greater planning and personal organization.

Need for Cognition. This 1-item scale assesses the mother's need for cognition. Higher scores indicate that the mother has a greater need for cognition.

Confidence in Parenting Skills. This 1-item scale assesses the mother's confidence in their parenting skills. Higher scores indicate that the mother has more confidence in their parenting skills.

Perceived Stress. This 2-item scale assesses how often the mother is able to manage stress. Higher scores indicate the mother has more control over stress.

Self-Efficacy of Stress Management. This 2-item scale assesses the mother's self-efficacy over managing stress. Higher scores indicate the mother has greater self-efficacy in managing stress.

Child Intrapersonal Characteristics

This section is to describe the child's characteristics. Factors relating to child characteristics include child demographic characteristics, child health status, child BMI percentile for age, child physical activity and sedentary behaviors, child beverage intake, child eating styles, and child sleep time and quality. See Table 8 for a description of the validity and reliability of scales used. See Appendix A for all survey items, response choices and scoring methodology of the HOMES survey.

Table 8: HOMES Survey- Child Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Child Demographic Characteristics	1	5	N/A	N/A	N/A	N/A	N/A
Child Health Status	2	3	Health Related Quality of Life Scale (HRQOL)[53,101]	4	Likert-type agreement responses	Varies.	Numerous studies have confirmed the validity and reliability of the HRQOL Scale.[53,101]
Child BMI Percentile for Age	1		N/A	N/A	N/A	N/A	N/A
Child Physical Activity and Sedentary Behaviors	3	8	Parental Measures- Support, Enjoyment, and Importance Scale[249,272]	4 scales; exact number of items is unknown	Yes/No; Likert-type frequency responses; continuous variables	Parents of children in grades 4-12.	Test-retest reliability varied from r=0.67 to r=0.81.[249,272]
			International Physical Activity Questionnaire[248]	27 (long form); 7 (short form)	Frequency responses	Varies.	Repeatable data has been reproduced in both the short and long form (Spearman's p clustered around 0.8).[248]
			Items created *de novo*	N/A	N/A	N/A	N/A
Child Beverage Intake	1	5	Block Kid's Food Screener[222]	41	Frequency responses	Adolescents between the ages of 10-17.	De-attenuated correlations ranged from 0.52-0.87.[222]
			Fast Food/Beverage Screener[257]	22	Frequency responses	Adolescents between the ages of 11-18.	Spearman correlations and kappa statistics were >0.6 for most items.[257]

Table 8 continued: HOMES Survey- Child Intrapersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Child Eating Styles	3	8	Child Eating Behavior Questionnaire[284]	35	Likert-type frequency responses	Parents of young children.	Good internal validity with child BMI. A longitudinal study found that the subscales had significant correlations between the two time points, with correlation values ranging from r=0.44 to r=0.55.[284]
			Self-Regulation in Feeding Questionnaire[285]	8	Likert-type agreement responses	Children between the ages of 3-8.	The internal consistency for this scale was good (Cronbach's α=0.87).[285]
Child Sleep Time and Quality	2	3	Pittsburgh Sleep Index[254,255]	24	Open-ended hours of sleep; agreement responses	Adults, including those with chronic disease.	Acceptable measures of internal consistency and validity were obtained in the original study (kappa=0.75).[254,255]

Child Demographic Characteristics. This section is to describe the demographic characteristics of respondent mothers' young child being reported on. The section contains 5-items, including: sex, birth date, ethnicity/race, if the respondent mother gave birth to the child, and birth country.

Child Health Status. This section is to describe the child's mental and physical health. This section includes 2 scales, including child health status, child quality of life, using 3 items to assess child health. The scales were adopted from a previously validated and reliable survey: the Centers for Disease Control and Prevention's Health-Related Quality of Life questionnaire.[110,123] Numerous studies have confirmed the validity and reliability of the Health Related Quality of Life Scale.[53,101]

Child Health Status. The first scale includes 1-item that addresses the mother's perceptions regarding their child's health. The item had 5-likert type response choices (poor, fair, good, very good, excellent) that were scored as 1 to 5, respectively. A higher score indicates that mothers rate their child's overall health as being better.

Child Quality of Life. The second scale includes 2-items that address the child's quality of life in terms of how frequently the child's physical and mental health were not good in the past month. Response choices (0 days to 31 days) were scored as 0 to 31, respectively. The 2-items are averaged for an overall score. A lower score indicates a mother perceives that their child's quality of life (both physical and mental) is better.

Child BMI Percentile for Age. This section is to describe the child's height and weight, which was used to calculate child z score and BMI percentile for age. The data collected from mothers include: the child's height, verification for height (i.e. does the child's head reach the door knob), the child's weight, and verification of height and weight (actually

measured or not). Note that not all participants submitted anthropometric data for their child as it was asked in a separate survey.

Child Physical Activity and Sedentary Behaviors. This section assesses child physical activity level, and child screentime.

Child Physical Activity Level. This 3-item scale assesses the child's physical activity level. The scale was modified from the International Physical Activity Questionnaire, a validated and reliable instrument to include age-appropriate activities.[248,249] This scale assesses how frequently the child participates in light, moderate, or vigorous physical activity. Items in this scale reported how frequently in days/week the child spends participating in the three categories of physical activity.

The IPAQ categorical scoring methodology was modified to account for the relative intensity of activity to enable scoring categories (sedentary, moderate, and high) by weighting vigorous activity higher than moderate activity and walking, and moderate activity as higher than walking.[248] Scores were weighted where the total score was a summation of the number of days spent participating in vigorous activities multiplied by three, participating in moderate activities multiplied by two, and walking for at least ten minutes. The weighted scale has a score range of 0 to 42. Higher scores indicate that the child participates in more vigorous physical activity per week.

Child Screentime. This 1-item scale assesses the length of time per day, in hours and minutes, the child spends participating in screentime in a given week. The 1-item was created *de novo*. The score is calculated by converting the total reported time into minutes. The 1-item can be used to determine whether or not their child met or exceeded the recommendations put forth by the American Academy of Pediatrics.

Child Beverage Intake. This 5-item questionnaire assesses the child's intake of sugar-sweetened beverages (soda, fruit drinks, etc.), juice (fruit and vegetable), and milk. This questionnaire was modified from preexisting valid and reliable scales: the Block Kid's Screener and the Fast Food/Beverage Screener.[222,257] The frequencies response choices (less than 1 time a week, 1 day a week, 2 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week, more than 1 time a day) were scored as 0 to 8, respectively. The score was calculated by summing the 7 items. Scores are broken down to determine servings per day of fruit/vegetable juice, sugar-sweetened beverages, and milk. These scores can be used to estimate intake of sugar and calories from sugar-sweetened beverages in a given day.

Child Eating Styles. This section is to determine whether the child partakes in food neophobia, emotional eating, or self-regulation while eating in three sub-scales. The scales were adapted from previously validated and reliable scales, including the Children's Eating Behavior Questionnaire and from the Self-Regulation in Feeding Questionnaire.[284,285] All items had 5-likert type response choices (strongly disagree, disagree, neither, agree, strongly agree) and were scored as 1 to 5, respectively. Scale scores were determined by averaging the responses.

Food Neophobia. This 4-item sub-scale assesses the child's acceptance of new or unfamiliar foods. Higher scores indicate the mother perceives their child has greater food neophobia.

Emotional Eating. This 2-item sub-scale assesses the influence of a child's emotions over the urge to eat or overeat. Higher scores indicate that the mother perceives the child has greater emotional eating.

Self-Regulation. This 2-item sub-scale assesses how well a child is able to respond to satiety signals to regulate eating. Higher scores indicate that the mother perceives child to have more eating-self regulation.

Child Sleep Time and Quality. This section assesses the sleep time and sleep quality of the mother's child. The scales were adapted from a validated, shortened version of the Pittsburgh Sleep Quality Index.[254,255]

Child Hours of Sleep. This 2-item scale assesses the duration of sleep of the child at night and during the day in a given week. Mothers reported the average hours and minutes of sleep that their child sleeps per night. A score is calculated by summing the number of hours for the 2-items for day and night sleep each day. Scores can be used to determine whether the child is meeting or not meeting recommendations for sleep.

Child Sleep Quality. This 1-item scale assesses the quality of sleep of the child in a given month. This item had 5-likert type response choices (very bad, bad, OK, good, very good) that were scored as 1 to 5, respectively. Higher scores indicate that the mother perceives the child's sleep quality is better.

Interpersonal Characteristics

Interpersonal characteristics focus on formal and informal social networks and social support systems. Interpersonal characteristics of the home environment to be examined in this study include family meal cognitions, family meal behaviors, and family and household interactions and organization. See Table 9 for a description of the validity and reliability of scales used to describe interpersonal characteristics. See Appendix A for all survey items, response choices and scoring methodology of the HOMES survey.

Table 9: HOMES Survey- Interpersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Family Meal Cognitions	6	12	Project EAT Survey[268]	12	Frequency responses	Adolescents and young adults.	The test-retest reliabilities for individual items ranged from r=0.54 to r=0.70.[252,269]
			Physical and Nutritional Environment Inventory[252,269]	75	Yes/No; Count; Likert-type agreement response	N/A	N/A
			Storfer-Isser[286]	9	Likert-type frequency responses	Parents of children between the ages of 2-6.	The domains showed adequate discriminant validity where the correlations ranged from r=0.11 to r=0.72. The time and energy subscales had correlations ranging from r=0.35 to r=0.55.[286]
			Items Created *de novo*	N/A	N/A	N/A	N/A
Family Meal Behaviors	3	9	Family Mealtime Questionnaire[287]	13	Open-ended responses; 0-7 days	N/A	N/A
			Project EAT Survey[268]	12	Frequency responses	Adolescents and young adults.	The test-retest reliabilities for individual items ranged from r=0.54 to r=0.70.[252,269]
			Physical and Nutritional Environment Inventory[252,269]	75	Yes/No; Count; Likert-type agreement response	N/A	N/A

Table 9 continued: HOMES Survey- Interpersonal Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Family Meal Behaviors, Continued			Healthy Homes Survey[251]	113	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 3-8.	The majority of domains showed near perfect agreement between the test and re-test (Kappa statistics were 0.36-0.88; percent agreement ranged from 42%-98%).[251]
			Items Created *de novo*	N/A	N/A	N/A	N/A
Family and Household Interactions and Organization	3	11	Family Environment Survey[288]	90	Likert-type agreement responses	Mothers of obese children between the ages of 8-16.	Each subscale displayed adequate test-retest reliability over 8 weeks and 12 weeks (0.80 and 0.75, respectively) with adequate internal consistency (average α=0.73).[288]
			Confusion, Hubbub, and Order Scale (CHAOS)[275]	15	Likert-Type True/False	Families from psychiatric population and stroke rehabilitation, and college students	Good reliability in various samples (Cronbach's α=0.92).[275]
			Parental Measures- Support, Enjoyment, and Importance Scale[249,272]	4 scales; exact number of items is unknown	Yes/No; Likert-type frequency responses; continuous variables	Parents of children in grades 4-12.	Test-retest reliability varied from r=0.67 to r=0.81.[249,272]
			Items Created *de novo*	N/A	N/A	N/A	N/A

Family Meal Cognitions. This section includes 6 scales and assesses importance placed on family meals, family meal atmosphere, family meal planning, effort of cooking, time and energy for family meals, and meal preparation self-efficacy. All items had 5-point Likert type response choices (i.e., strongly disagree, disagree, neither, agree, strongly agree; scored 1 to 5, respectively. Scale scores are determined by averaging item response.

Importance Placed on Family Meals. This 3-item scale assesses the importance and value placed on family meals by the mother. Two items were adapted from the Project EAT survey and one item was created *de novo*.[269] A higher score indicates that there is more value placed on the importance of family meals.

Family Meal Atmosphere. This 2-item scale assesses how positive the family meal environment is in the home. The items were adapted from the Project EAT survey and the Physical Nutritional Home Environment Inventory.[252,269] A higher score indicates that there is a more positive family meal environment.

Family Meal Planning. This 2-item scale assesses how much planning and preparation usually goes into family meals. The items were adapted from the Project EAT survey or created *de novo*.[268,287] Higher scores indicate greater family meal planning.

Effort of Cooking. This 2-item scale assesses whether the mother believes it is worth putting effort into family meals. These 2-items were created *de novo*. A higher score indicates that the mother is more willing to put effort into family meals.

Time and Energy for Family Meals. This 2-item scale assesses whether the mother perceives that they have enough time and energy to prepare healthy foods for their

children. The two items were adapted from Storfer-Isser.[286] A higher score indicates that the mother has more time and energy for family meals.

Meal Preparation Self-Efficacy. This 1-item scale assesses the mother's meal preparation self-efficacy. The item was created *de novo*. A higher score indicates that the mother has greater self-efficacy at preparing meals.

Family Meal Behaviors. This section includes 3 scales and assesses family meal frequency, meal environment frequency, and media use during meals. All items assessed frequency, using these response choices: almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday, which were scored as 0 to 7, respectively.

Family Meals Frequency. This 3-item scale assesses how many meals (i.e., breakfast, lunch, dinner) each week are usually eaten together with the majority of the household members. The scale was adapted from the Family Meal Time Questionnaire.[289] Scores are summed to indicate total meals per week.

Meal Environment Frequency. This 4-item scale assesses how many days/week family meals are eaten in the car, at a fast food restaurant, at a dining room table, and in front of the TV. The items were adapted from the Project EAT survey, the Physical and Nutritional Home Environment Inventory, the Healthy Home Survey, and two were created *de novo*.[252,266,269]

Media Use During Meals Frequency. This 2-item scale assesses the frequency that media devices are turned on during family meals. The items were adapted from the Project EAT survey.[269] The scores are summed in terms of days/week. A higher score indicates that media is used more frequently during meal times.

Family and Household Interactions and Organization. These scales assess interactions of family members, including family support for healthy behaviors, family cohesion, and household organization. Most items below had 5-point Likert type response choices (i.e., strongly disagree, disagree, neither, agree, strongly agree) that were scored 1 to 5, respectively. One of the scales, family supports for healthy behavior had different response choices (i.e., never, rarely, sometimes, most of the time, always) that were scored 1 to 5, respectively. Scale scores were determined by averaging the responses. This section includes 3 scales.

Family Support for Healthy Behaviors. This 4-item scale assesses whether family members support healthy weight-related behaviors (i.e., healthy eating and physical activity). The items were adapted and shortened from existing, validated instruments to reduce participant burden.[249,283,290] Higher scores indicate greater family supports for healthy weight-related behaviors.

Family Cohesion. This 5-item scale assesses the degree of conflict and cohesion within the family. The items were adapted from the Family Environment Survey.[288] Higher scores indicate less conflict and more cohesion within the family.

Household Organization. This 2-item scale assesses how chaotic the home environment is. The items were adapted from the Confusion, Order, and Chaos Scale.[275,291] Higher scores indicate more household organization.

Home Environment Characteristics

This section of the survey is to describe the aspects of the home environment of mothers of young children. Characteristics of the home environment to be examined include the following: home opportunities for physical activity Check-UP (HOP-UP),

sedentary screentime environment, household food availability, household food accessibility, and supermarket accessibility. See Table 10 for a description of the validity and reliability of scales used to describe the home environment characteristics. See Appendix A for all survey items, response choices and scoring methodology of the HOMES survey.

Home Opportunities for Physical Activity Check-UP (HOP-UP).[292] The HOP-UP questionnaire was developed to describe the availability, accessibility, and frequency of use of space and equipment for physical activity.[292] This questionnaire has 5 subscales and 18 total items.[292] The 5-subscales include: Indoor Home Space and Supports for Physical Activity, Outdoor/Yard Space and Supports for Physical Activity, Neighborhood Space and Supports for Physical Activity, Neighborhood Safety, and Frequency of Active Play.[292] All items had 5-point Likert type response choices (i.e., strongly disagree, disagree, neither, agree, strongly agree; scored 1 to 5, respectively) except those that required the mother to report the frequency of activity in the home or those that required the mother to report a count for a specific type of item available in the home. Scales assessing frequency, had these response choices: never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday, which were scored as 0 to 7, respectively. Scale scores are determined by averaging item response.

Indoor Home Space and Supports for Physical Activity.[292] This 6-item scale assesses the space and supports for physical activity available inside the home. Items assess frequency of indoor active play, availability of indoor active play, and a count of items available to

Table 10: HOMES Survey- Home Environment Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Home Opportunities for Physical Activity Check-UP (HOP-UP)[292]	5	18	Home Opportunities for Physical Activity Check-UP (HOP-UP)[292]	18	Likert-type with responses ranging from strongly disagree to strongly agree; frequency; count	Parents of preschool-aged children living in NJ.	Exploratory (Cronbach's α ranged from 0.43 to 0.89) and confirmatory (Cronbach's α ranged from 0.52 to 0.87) factor analysis of the final scale items demonstrated good internal consistency for three scales and acceptable internal consistency for two scales.[292]
Sedentary Screentime Environment	6	23	Physical and Nutritional Home Environment Scale[252]	75	Yes/No; count	N/A	N/A
			Healthy Home Survey (HHS)[251]	113	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 3-8.	Most domains showed near perfect agreement between the test and re-test (Kappa statistics were 0.36-0.88; percent agreement ranged from 42%-98%).[251]
			Home Environment Survey (HES)[250]	126	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 8-12.	Reliability and validity estimates were varied but generally high (0.22-1.00 and 0.07-0.96, respectively).[250]

Table 10 continued: HOMES Survey- Home Environment Characteristics

HOMES Survey Component	Number of Scales	Number of Items Used	Original Scale	Original Number of Items	Answer Choices	Population used for Validity/ Reliability Testing	Validity and Reliability Tests
Food Availability	4	24	Fat and Fruit Vegetable Intake Screener[256]	22	Frequency responses	Adults between the ages of 20-69.	Spearman correlations ranged from 0.6-0.7 for nutrient estimates.[256]
			Block Kid's Food Screener[222]	41	Frequency responses	Adolescents between the ages of 10-17.	De-attenuated correlations ranged from 0.52-0.87.[222]
			Fast Food/Beverage Screener[257]	22	Frequency responses	Adolescents between the ages of 11-18.	Spearman correlations and kappa statistics were >0.6 for most items.[257]
			Sugar-Sweetened Beverage Intake Among College Students[258]	15	Frequency responses	N/A	N/A
Food Accessibility	2	22	Healthy Home Survey[251]	113	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 3-8.	The majority of domains showed near perfect agreement between the test and re-test (Kappa statistics were 0.36-0.88; percent agreement ranged from 42%-98%).[251]
			The Home Environment Survey (HES)[250]	126	Yes/No; Likert-type frequency responses; continuous variables	Families with a child between the ages of 8-12.	Reliability and validity estimates were varied but generally high (0.22-1.00 and 0.07-0.96, respectively).[250]
Supermarket Accessibility	1	1	Items created *de novo*	N/A	N/A	N/A	N/A

facilitate indoor active play.[292] Higher scores indicate the home has more space and support for physical activity.[292]

***Outdoor/Yard Space and Supports for Physical Activity.*[292]** This 4-item scale assesses space and supports for physical activity in the area immediately outside the home (e.g., yard area). Items assess availability and accessibility to outdoor or yard play and a count of items available to facilitative outdoor active play. Higher scores indicate more space and support for physical activity immediately outside of the home.[292]

***Neighborhood Space and Supports for Physical Activity.*[292]** This 4-item scale assesses space and supports for physical activity in the neighborhood.[292] Items assess accessibility and availability of safe and clean neighborhood play areas. Higher scores indicate that the neighborhood has more space and support for physical activity.[292]

***Neighborhood Environment Safety.*[292]** This 2-item scale assesses the safety of the neighborhood in terms of crime and outdoor pests and animals.[292] A higher score indicates greater feelings of neighborhood safety.[292]

***Frequency of Active Play Outdoors.*[292]** This 2-item scale assesses how frequently the family participates in active play outdoors or at recreation centers near their homes.[292] A higher score indicates greater frequency of active play outside of the home.[292]

Sedentary Screentime Environment. The purpose of this section of the survey is to describe media equipment availability in the home and in the child's bedroom, media equipment accessibility, minutes of screentime the child is allowed per day, and the minutes of time the TV is on daily with no one watching.[250-252] The scales were adapted from existing scales (the Physical and Nutrition Home Environment Inventory, the

Healthy Home Survey, and the Home Environment Survey).[250-252] This section of the survey includes 6 scales.[250-252]

Media Equipment Availability in the Home. This 6-item scale assesses total number of devices by type (i.e., TV, DVD player, computer, smart phone, tablet, video games, etc.) that are available in their home. [250-252] Higher scores indicate a greater number of media equipment items available in the home.[250-252]

Media Equipment Availability in the Child's Bedroom. This 8-item scale assesses the total number of devices by type (i.e., TV, DVD player, computer, smart phone, tablet, video games, etc.) available in the child's bedroom.[250-252] Higher scores indicate more media equipment is available to the child in his or her bedroom.[250-252]

Media Equipment Accessibility. This 4-item scale assesses how accessible media equipment in the home is to children.[250-252] This scale has 5-likert type response choices (i.e., strongly disagree, disagree, neither, agree, strongly agree) that were scored 1 to 5, respectively. Scale scores were determined by averaging the item responses. Higher scores indicate a child is more able to access and use media equipment in the home without the help of adults or older children.[250-252]

Minutes of Screentime Child Allowed Per Day.[250-252] This 2-item scale assesses how much time each day mothers allow their children to watch TV or movies, participate in sedentary computer time and active/inactive video game time.[250-252] Scores reflect the summed minutes for the combined items. Higher scores indicate greater screentime allowed daily.[250-252]

Minutes of Time the TV is On Daily with No One Watching. This 1-item scale assesses the total time per day that the TV is on when no one is watching. This scale was created *de novo*.

Household Food Availability. This section describes the household availability of fruits and vegetables, breakfast foods, beverages, and high energy/low nutrient snacks. This section includes 20 items. All items had 8 response choices (i.e., less than 1 serving a week, 1 serving a week, 2 servings a week, 3 servings a week, 4 servings a week, 5 servings a week, 6 servings a week, 7 servings a week, more than 1 serving every day) that were scored 0 to 8, respectively. Scale scores were determined by dividing the response by 7 to report daily servings.

Household Availability of Fruits and Vegetables. This 10-item questionnaire assesses the availability of fruits and vegetables in the home. It was adapted from the Block Fruit-Vegetable-Fiber Screener, a food frequency questionnaire.[256] A study has shown the utility of the Block Screeners in assessing availability of particular food groups in household food inventories.[256,293,294] The modified screener describes the availability of fruits and vegetable servings, milligrams of vitamin C, and grams of dietary fiber in the household food supply.[293,294] Servings and nutrient amounts are calculated using algorithms.[256,293,294] Higher scores indicate greater availability of fruits and vegetables, vitamin C, and fiber in the household.

Household Availability of Breakfast Foods. This 3-item questionnaire assesses the availability of breakfast foods in the home. It was modified from the Block Kids Food Screener, a food frequency questionnaire.[222] Scores are calculated by summing the 3-items. Higher scores indicate greater availability of breakfast foods in a given week.

Household Availability of Beverages. This 7-item questionnaire assesses the availability of sugar-sweetened beverages, juice, and milk in the home. It was modified from the Block Kids' Screener, the fast food/beverage screener, and a survey for college students, a food frequency questionnaire.[257,258,293] The modified screener describes servings of beverages available, and calorie and sugar available from sugar-sweetened beverages in the household supply.[222,293,294] Scores are calculated by summing the 4-items. Higher scores indicate greater availability of sugar-sweetened beverages in a given week. Estimations of nutrient for sugar and calorie availability from beverages are calculated from the screener.[222,293,294]

Household Availability of High Energy/Low Nutrient Snacks. This 4-item questionnaire assesses availability of salty, sweet, and fatty snacks in the home. It was modified from the Dietary Fat Screener and the Block Kids' Screener, which are food frequency questionnaires for estimating intake of these foods by the individual.[222,256,295] A study demonstrated the utility of the Block Screeners to assess availability of particular food groups in household food inventories.[293,294] The questionnaire describes the total fat, saturated fat, and cholesterol available in the household food supply using a scoring algorithm.[222,293-295] Higher scores indicate greater availability of high energy/low nutrient snacks in a given week.

Household Food Accessibility. This section assesses the mothers' policies about which foods children can access independently and which foods are easy for children to see and reach. It includes two scales, child food accessibility and child food access policy, modified from the Healthy Survey and the Home Environment Survey.[250,251] For both scales, food items are broken down as being either nutrient poor (6-items) or nutrient

dense (5-items). The scores for nutrient poor items are summed separately from the nutrient dense items to give two scores per scale.

Child Food Accessibility. This scale includes 12 food items and asks the mother to select the food items they allow children to get without help. Higher scores for the nutrient poor food items indicate children have greater accessibility of nutrient poor foods; higher scores for nutrient dense food items indicates greater accessibility of nutrient dense foods.

Child Food Access Policy. This scale includes the same 12 food items as the Child Food Accessibility scale and asks the mother to indicate if the food item is kept in a location that is easy for the child to see and reach. Higher scores for the nutrient poor food items indicate that mothers covertly control children's food access by placing food items where children can (or cannot) see and reach them.

Supermarket Accessibility. This 1-item scale assesses whether the family has easy access to a large supermarket. This item was created *de novo*. The response choices are a 5-point Likert type scale (i.e., strongly disagree, disagree, neither, agree, strongly agree) that is scored 1 to 5, respectively. Higher scores indicate that the family has greater accessibility to a large supermarket.

DATA ANALYSIS

All data from the survey was cleaned to remove participants that did not meet eligibility (the mother had a child between 2-<9, was the primary food gatekeeper, and the parent completing the survey was the mother), duplicate entries, and participants with missing data. All analyses were completed using PASW Statistics 24.0 SPSS (IBM

Corporation, Chicago, Illinois). All survey questions have undergone content validity and cognitive testing for clarity as appropriate, prior to data collection.

Research Question 1

How do the weight-related characteristics of home environments (i.e., physical environment, household interpersonal, and maternal and child intrapersonal [psychographic, behavioral] characteristics*) of mothers and their young child differ by maternal race/ethnicity?*

Parent weight-related behaviors and cognitions and their home environments may influence childhood obesity risk, yet little is known about how their behaviors, cognitions and environments differ by racial/ethnic groups. Thus, the first aim of this study was to describe the home environments, and weight related cognitions and behaviors of mothers by racial/ethnic group. The first step required for this Research Question was to divide participants into meaningful racial and ethnic categories for analyses. Participants were divided into four major racial and ethnic categories: White, Black, Hispanic or Latino, and Asian/Asian Indian. The second step was to calculate descriptive statistics (i.e., means and standard deviations) to describe the weight-related characteristics of the interpersonal, intrapersonal and environmental characteristics of the mother and her child by race and ethnicity. The third step was to conduct analysis of variance (ANOVA) and Tukey post-hoc tests to determine independent variable differences among and between racial/ethnic categories. Due to the numerous comparisons that occurred, probability level for the main effects (ANOVA) was set at $p \leq 0.01$ to avoid the risk of type I errors. Post-hoc probability was set to 0.05. The findings from this study can aid researchers in the development of programs that are more culturally targeted for those of different

ethnic/racial groups.

Research Question 2

2A. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers with high or low personal acculturation levels? 2B. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers living in a high or low acculturation environment?

Acculturation level is thought to affect certain health outcomes and behaviors, but many gaps remain in our ability to describe the weight-related behaviors and cognitions among those who are less and more acculturated. Thus, the second aim of this study is to describe the home environments, and weight-related cognitions and behaviors of Hispanic mothers by acculturation level.

The first step required for this Research Question was to extract Hispanic participants from the data set and divide them into meaningful groups based on their personal acculturation. The Personal Acculturation scale is a summation score of the following proxy items: country of origin (non-U.S. or U.S.), language of the survey (English or Spanish), and language used most frequently in the home (English or Spanish). Proxy variables were scored where responses associated with higher levels of acculturation (English-language use, survey completed in English, U.S. birth country) were scored a 0 and responses associated with lower levels of acculturation (Spanish-language use, survey completed in Spanish, non-U.S. birth country) were assigned a

score of 1. Participants were categorized as having low personal acculturation (i.e., score 1, 2 or 3) or high personal acculturation (i.e., score 0). The two Hispanic acculturation groups were compared to a control (non-Hispanic Whites) to discern differences.

Few studies have examined the relationship between environmental aspects of acculturation and the home environment. Thus, the next step for this Research Question was to divide participants into meaningful groups based on their acculturation environment. The Acculturation Environment scale is derived from the following variables from the 2015 American Community Survey at the census-tract level: percentage foreign-born individuals, percentage of foreign-born individuals arriving within the years 2010-2015, and percentage of Spanish-speaking households reporting speaking English less than very well.[296-298] The Acculturation Environment score was calculated by awarding 1 point to each variable when the value was at or above the median threshold for the participant's state of residence and 0 points if the value was below the median threshold. The median for percentage of foreign-born individuals living in NJ and AZ in the year 2015 was 16.7% and 10.5%, respectively.[296] The median percentage of foreign-born individuals arriving within the years 2010-2015 living in NJ and AZ in the year 2015 was 6.2% and 5.8%, respectively.[298] The median for percentage of Spanish-speaking households reporting speaking English less than very well in NJ and AZ in the year 2015 was 2.3% and 3.1%, respectively.[297] Participant's acculturation environment score was based on the standardized score for their state. The three scores were summed for a range of 0-3. Participants were categorized as living in a low acculturation environment (i.e., score 1, 2, or 3) or high (i.e., score 0) acculturation environment. The two Hispanic acculturation groups were compared to a control (non-

Hispanic Whites) to discern differences.

Descriptive statistics (i.e., means and standard deviations) were calculated to describe the weight-related characteristics of the interpersonal, intrapersonal, and environmental characteristics of the mother and her child by the mother's personal acculturation and her acculturation environment. Analysis of variance (ANOVA) and Tukey post-hoc tests were conducted to determine independent variable differences among and between acculturation groups. Due to the numerous comparisons that occurred, probability level for the main effects (ANOVA) was be set at $p \leq 0.01$ to avoid the risk of type I errors. Post-hoc probability was set to 0.05. The findings from this study add to the body of evidence describing the weight related cognitions and behaviors of Hispanics of varying acculturation level.

Research Question 3

How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers clustered by their combined acculturation measures?

Research Question 2 found an array of differences between White mothers and Hispanic mothers grouped by their personal acculturation or by acculturation environment. Some differences were the same regardless of acculturation types; however, other differences were not. To explore the notion that there may be an interplay of acculturation types, all six personal acculturation and acculturation environment measures were used to cluster Hispanic mothers. Thus, the third aim of this study was to

explore the combined effect personal and environmental acculturation on maternal weight-related cognitions and behaviors.

The first step required for Research Question 3 was to extract Hispanic participants from the data set for cluster analysis. Wards hierarchical clustering was used to assign Hispanic participants into meaningful groups using the three personal acculturation (i.e., country of origin, language of survey, language used in the home) and three acculturation environment (i.e., % foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well) measures. Cluster analysis is used to merge similar groups together so that the clusters maximize within-group homogeneity and between-group heterogeneity.[299] The two main methods for conducting cluster analysis are hierarchical and non-hierarchical. Hierarchical methods are the preferred as they allow the researcher to use the data to determine the total number of clusters, whereas non-hierarchical cluster methods, like K-means, require the researcher to predetermine the number of clusters in the final solution.[299] In order to identify the ideal number of clusters, Ward's Hierarchical cluster analysis was run.

To determine the ideal number of clusters, the agglomeration schedule and the dendrogram were examined.[299] The agglomeration schedule is used to determine the point at which the difference between the distance coefficients increases dramatically, referred to as the "elbow" in the scree plot.[299] It is critical to identify this point as it represents the point at which the clusters in the following stages have increasing heterogeneity, indicating that subsequent clustering would lead to dissimilarity within groups.[299] From the agglomeration schedule, the elbow was identified to be stage 146. To

determine the ideal number of clusters to be used, the stage at the elbow (146) was subtracted from the sample size (149); this indicates that three is the ideal number of clusters.[299] The dendrogram was used to confirm the number of clusters visually.[299] Three cluster groups were identified from the analysis. The three Hispanic cluster groups were compared to a control (non-Hispanic White) to discern differences.

Descriptive statistics (i.e., means and standard deviations) were calculated to describe the weight-related characteristics of the participant by the mother's composite acculturation score. Analysis of variance (ANOVA) and Tukey post-hoc tests were conducted to determine independent variable differences among and between acculturation groups. Due to the multiple comparisons made, the probability level for the main effects (ANOVA) was set at $p \leq 0.01$ to reduce the risk of type I errors. Post-hoc probability was set to 0.05.

As socioeconomic status is thought to be associated with many differences related to acculturation, a secondary analysis was conducted to control for it. Analysis of covariance (ANCVOA) and Bonferroni post-hoc tests were conducted to determine independent variable differences among and between the acculturation groups while controlling for family affluence score. Due to multiple comparisons made, the probability level for the main effects (ANCOVA) was set at $p \leq 0.01$ to reduce the risk of type I errors. Post-hoc probability was set to 0.05.

CHAPTER FOUR

RESULTS

The purposes of this study were to conduct a comprehensive assessment of the home environments (i.e., physical environment characteristics, household interpersonal and maternal and child intrapersonal [psychographic, behavioral]) of mothers and their young children (aged 2 to <9) and compare them by maternal race/ethnicity and maternal acculturation level. An additional purpose of this study was to examine the relationship between maternal acculturation level and their home environments.

SAMPLE

As seen in Figure 4, of the 5494 individuals who responded to the recruitment notices and visited the survey screener, 5277 completed the study screener. Participants were removed from the sample if they did not complete the screener (n=217), did not meet all inclusion criteria (i.e., aged 20-45 years of age, at least 1 child 2- to 9-years-old, primary food gatekeeper, lived in catchment area of NJ or AZ) (n=3,343), did not consent (n=405), started but did not complete the survey (n=862), or provided implausible answers (i.e., choosing the same answer for all questions or provided a mailing address that could not be verified after repeated attempts to confirm it with the participant) (n=34). Fathers (n=49) were removed because few fathers participated in the survey and prior research has established that their cognitions and behaviors are significantly different from mothers.[300] Parents reporting their race as mixed (n=12), Alaskan Native or Pacific Islander (n=2), and Native American or American Indian (n=2) were excluded due to low response rates; Asians and Asian Indians were combined into the group Asians. The final sample was 568 mothers.

Figure 4: Recruitment Study Sample

Visited Screener Website
(n=5,494)

Completed Screener
(n=5,277)

Excluded due to:
Did not complete screener (n=217)

Eligible to Take Baseline
Survey (n=1,934)

Excluded due to:
Did not meet eligibility criteria (n=3,343)

Completed Baseline Survey
(n=667)

Excluded due to:
Did not give informed consent (n=405)
Did not complete baseline survey (n=862)

Final Baseline Sample
(n=568)

Excluded due to:
Unable to confirm participant address (n=33)
Implausible answers (n=1)
Male (n=49)
Race [Mixed, Native American, Pacific Islander]
(n=16)

MATERNAL DEMOGRAPHICS

As seen in Table 11, mothers were 32.73±5.55SD years old and their children averaged 4.57±1.66SD years. Mothers were predominately White (60%) and Hispanic (26%), with fewer mothers describing themselves as Black (8%) or Asian (6%). Most mothers had at least a baccalaureate degree (48%) or some college/associates degree (38%); few mothers reported having a high school diploma or less (14%). Most mothers lived in dual parent families (82%). Most mothers reported that they worked full-time (46%) or did not work (38%); few mothers worked part-time (17%).

HOME ENVIRONMENTS OF MOTHERS AND THEIR YOUNG CHILDREN BY MATERNAL RACE/ETHNICITY

To address Research Question 1 "*How do the weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of mothers and their young child differ by maternal race/ethnicity?",* mothers were sorted by their reported racial/ethnic group. For the purposes of this analysis, mothers were assigned to racial/ethnic category as follows: White (n=340), Hispanic (n=149), Black (n=46), and Asian (n=33).

Demographic Characteristics by Maternal Race/Ethnicity

Demographic characteristics of the mothers (32.73±5.55SD years old) split by maternal racial/ethnic category are shown in Table 12. ANOVA with Tukey post-hoc tests revealed that compared to other racial/ethnic groups, Hispanic mothers were significantly younger than White, Black and Asian mothers. Asians had a higher education level than all other groups. White mothers also had more education than

Table 11: Maternal Demographics

Characteristic	N	%
Race		
White	340	59.86%
Hispanic	149	26.23%
Black	46	8.10%
Asian and Asian Indian	33	5.81%
Maternal Education		
High school or less	82	14.44%
Some college or associate degree	216	38.03%
Baccalaureate degree or higher	270	47.54%
Parent Employment		
Does not work	214	37.68%
Part-time (less than 30 hours/week)	95	16.73%
Full-time (30 or more hours/week)	259	45.60%
Marital Status		
Single Parents	104	18.31%
Dual Parents	464	81.69%
State		
Arizona	274	48.24%
New Jersey	294	51.76%

Table 12: Demographic Characteristics by Maternal Race/Ethnicity (N=568)

Characteristic	Total Sample (n=568)	White (n=340)	Hispanic (n=149)	Black (n=46)	Asian (n=33)	ANOVA*
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	*p*
Age	32.73±5.55	33.33±5.44	30.73±5.56	33.37±5.98	34.73±3.54	0.000[ADE]
Maternal Education[1]	2.33±0.71	2.39±0.71	2.15±0.70	2.20±0.72	2.73±0.63	0.000[ACEF]
Maternal Hours of Employment[2]						0.861
Does not work	214 (37.68%)	121 (35.59%)	64 (42.95%)	15 (32.61%)	14 (42.42%)	
Part-time (less than 30 hours/week)	95 (16.73%)	62 (18.24%)	17 (11.41%)	10 (21.74%)	6 (18.18%)	
Near Full-time/Full-time (30 or more hours/week)	259 (45.60%)	157 (46.18%)	68 (45.64%)	21 (45.65%)	13 (39.39%)	
Maternal Birth Country[3]						0.000[ACDEF]
United States	487 (85.74%)	322 (94.71%)	108 (72.48%)	40 (86.96%)	17 (51.52%)	
Outside of United States	81 (14.26%)	18 (5.29%)	41 (27.52%)	6 (13.04%)	16 (48.48%)	
Marital Status[4]						0.000[ABEF]
Single Parents	104 (18.31%)	47 (13.82%)	39 (26.17%)	18 (39.13%)	0 (0%)	
Dual Parents	464 (81.69%)	293 (86.18%)	110 (73.83%)	28 (60.87%)	33 (100%)	
Family Affluence Score[5]	5.39±1.75	5.59±1.73	5.05±1.82	4.83±1.62	5.67±1.36	0.001[AB]
Food Insecurity Risk[6]	1.78±0.94	1.72±0.95	1.89±0.92	1.91±0.94	1.61±0.86	0.142
Environmental Health Capital[7]	2.26±0.67	2.28±0.72	2.20±0.56	2.09±0.59	2.52±0.71	0.028

*ANOVA indicate significant (p<0.01) main effects among racial/ethnic group.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and Hispanics.

[B] Whites and Blacks.

[C] Whites and Asians.

[D] Hispanics and Blacks.

[E] Hispanics and Asians.

[F] Blacks and Asians.

[1] Possible score range = 1 to 3; higher scores indicate higher education level.

[2] Possible score range = 1 to 3 for ANOVA; scores of 1, 2, 3 were categorized as does not work, works part-time, and works full-time, respectively.

[3] Possible score range = 1 to 2 for ANOVA; scores of 1, 2 were categorized as the mother being born in the U.S., and outside of the U.S., respectively.

[4] Possible score range = 1 to 2 for ANOVA; scores of 1, 2 were categorized as single parent and dual parent household, respectively.

[5] Family Affluence Scale contains 4-items; scores range from 0 to 9; higher scores indicate greater family affluence.

[6] Possible score range = 1 to 4; higher scores indicate greater food insecurity risk.

[7] Environmental Health Capital uses four geocoded variables (i.e., average community income, number of supermarkets, population density, and percent owner occupied housing) using the participants zip code. 1 point was granted to the home residences with zip code at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 4; higher scores indicate greater Environmental Health Capital.

Hispanic mothers. Maternal hours of paid employment did not differ significantly by maternal race/ethnicity. White and Black mothers were more likely to be born in the U.S. than Hispanic and Asian mothers. Asians were more likely to born outside of the U.S. than Hispanic mothers. White and Asian mothers were more likely to live in dual parent households than Hispanic and Black mothers. Although all mothers had moderate family affluence, White mothers had higher family affluence than Blacks and Hispanics. Food Insecurity Risk and Environmental Health Capital scores did not differ significantly by race/ethnicity.

Maternal Intrapersonal Characteristics by Maternal Race/Ethnicity

Maternal intrapersonal characteristics studied included weight status, health status, physical activity and screentime, behavior modeling and encouragement of physical activity and media use, sleep time and quality, dietary intake, eating behaviors, feeding practices, outcome expectations for healthy behaviors, self-efficacy for promoting healthy behaviors, and psychographics. Means, standard deviations, and significant differences found in ANOVA with Tukey post-hoc among maternal racial/ethnic group are shown in Table 13.

Maternal Weight Status. Maternal weight and height were collected after completion of the baseline survey so that height measuring kits could be sent to participants. Mothers who reported their weight and height status were White (n=131), Hispanic (n=49), Black (n=24), and Asian (n=16). Biologically implausible data were omitted from the analysis (e.g., 1 mother reported data resulting in an implausibly low BMI). Maternal BMI approached significance (p=0.011) by maternal racial/ethnic categories. Current BMI cutoffs for the general population are 25.0 kg/m^2 to <30 kg/m^2, 30 kg/m^2 or higher, for

Table 13: Maternal Intrapersonal Characteristics by Maternal Race/Ethnicity (N=568)

Characteristic	Total Sample (n=568) Mean±SD or N (%)	White (n=340) Mean±SD or N (%)	Hispanic (n=149) Mean±SD or N (%)	Black (n=46) Mean±SD or N (%)	Asian (n=33) Mean±SD or N (%)	ANOVA* p
Maternal Weight Status[1]	28.31±6.90	27.84±6.63	29.82±7.87	30.52±6.98	24.22±2.31	0.011
Maternal Health Status						
Depression Severity[2]	1.61±0.73	1.55±0.75	1.75±0.68	1.47±0.64	1.88±0.72	0.003[A]
Health-Related Quality of Life[3]	3.73±5.41	3.69±5.47	4.34±5.73	2.96±4.94	2.43±3.52	0.195
Maternal Physical Activity, Screentime						
Maternal Physical Activity Level[4]	14.04±9.72	14.74±9.84	12.38±8.29	13.22±11.06	15.55±11.70	0.064
Maternal Screentime (minutes/day)	350.86±278.25	329.47±260.98	411.34±325.47	377.28±267.71	261.36±168.63	0.005[AE]
Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use						
Value Placed on Physical Activity for Self[2]	2.94±1.13	3.01±1.14	2.72±1.09	3.10±1.23	3.05±1.00	0.039
Value Placed on Physical Activity for Child[2]	3.74±0.89	3.88±0.87	3.45±0.88	3.75±0.90	3.64±0.82	0.000[A]
Encouragement and Facilitation of Physical Activity[2]	4.06±0.68	4.16±0.66	3.85±0.65	4.08±0.79	4.01±0.59	0.000[A]
Importance of Modeling Physical Activity[2]	3.90±0.85	4.00±0.79	3.70±0.84	3.87±1.15	3.85±0.84	0.004[A]
Importance of Not Modeling Sedentary Behavior[2]	3.80±0.96	3.84±0.94	3.69±0.94	3.89±0.95	3.85±1.12	0.397
Mother and Child Co-Physical Activity Frequency days/week	3.59±1.84	3.83±1.83	3.15±1.80	3.42±1.98	3.42±1.70	0.002[A]
Modeling Physical Activity days/week	2.53±1.68	2.61±1.68	2.35±1.59	2.63±1.94	2.41±1.70	0.423
Modeling Sedentary Behavior days/week	3.62±2.30	3.42±2.29	4.03±2.17	4.11±2.67	3.08±2.23	0.011
Maternal Sleep Time and Quality						
Sleep Time (hours/day)	7.11±1.24	7.13±1.18	7.02±1.30	7.36±1.33	6.95±1.48	0.359
Sleep Quality[2]	3.21±0.90	3.19±0.94	3.10±0.83	3.28±0.72	3.76±0.83	0.002[CE]
Maternal Dietary Intake						
Fruit and Vegetable (servings/day)	4.47±1.87	4.54±1.84	4.30±1.78	4.28±2.19	4.70±2.14	0.433
Dietary Fiber (grams/day)	18.45±6.44	18.25±6.32	19.02±6.15	18.04±7.45	18.51±7.60	0.640
Sugar-Sweetened Beverages (servings/day)	0.73±0.83	0.69±0.86	0.84±0.78	0.72±0.76	0.59±0.71	0.217
Maternal Eating Behaviors						
Disinhibited Eating[5]	2.04±0.78	2.06±0.78	2.09±0.77	1.85±0.86	1.94±0.72	0.247
Emotional Eating[5]	2.20±0.93	2.24±0.94	2.23±0.91	1.93±0.92	2.01±0.82	0.108
Dietary Restraint[5]	2.43±0.72	2.44±0.70	2.42±0.69	2.28±0.89	2.48±0.74	0.525
Food Adventurousness[5]	3.13±0.73	3.21±0.68	3.03±0.77	2.98±0.84	2.94±0.78	0.009[A]

Table 13, continued: Maternal Intrapersonal Characteristics by Maternal Race/Ethnicity (N=568)

Characteristic	Total Sample (n=568) Mean±SD or N (%)	White (n=340) Mean±SD or N (%)	Hispanic (n=149) Mean±SD or N (%)	Black (n=46) Mean±SD or N (%)	Asian (n=33) Mean±SD or N (%)	ANOVA* p
Maternal Feeding Practices						
Healthy Eating Modeling[2]	3.63±0.78	3.69±0.77	3.46±0.77	3.59±0.91	3.83±0.71	0.011
Use of Food Rewards During Meals[2]	2.38±0.76	2.34±0.73	2.39±0.78	2.35±0.77	2.79±0.82	0.014
Use of Non-Food Rewards During Meals[2]	2.78±0.94	2.76±0.96	2.78±0.90	2.76±0.96	3.02±0.92	0.535
Overt Control of Intake[2]	3.17±0.80	3.05±0.80	3.19±0.72	3.60±0.85	3.70±0.65	0.000[BCDE]
Covert Control of Intake[2]	3.60±1.26	3.68±1.25	3.40±1.30	3.48±1.31	3.73±1.01	0.118
Pressures Child to Eat[2]	2.31±0.96	2.20±0.95	2.51±0.90	2.14±0.97	2.72±1.06	0.000[ACF]
Restricts Child Food Choices[2]	3.81±0.88	3.72±0.93	3.90±0.77	4.08±0.91	3.94±0.66	0.017
Maternal Outcome Expectations for Healthy Behaviors						
Healthy Eating[2]	4.58±0.53	4.57±0.54	4.61±0.49	4.55±0.50	4.59±0.58	0.850
Physical Activity[2]	4.46±0.58	4.45±0.60	4.53±0.52	4.46±0.56	4.35±0.68	0.361
Maternal Self-Efficacy for Promoting Healthy Behaviors						
Obesity Protective Behaviors in Children[5]	3.75±0.69	3.79±0.68	3.56±0.66	3.98±0.82	3.81±0.63	0.001[AD]
Child Eating and Weight Management[5]	3.81±0.71	3.86±0.69	3.62±0.70	4.04±0.82	3.84±0.68	0.001[AD]
Child Physical Activity[5]	3.56±1.00	3.57±1.01	3.40±0.97	3.91±0.98	3.69±0.91	0.020
Parent Health Behaviors[5]	3.33±0.90	3.36±0.88	3.19±0.86	3.48±1.02	3.55±0.81	0.063
Maternal Psychographic Characteristics						
Personal Organization[2]	3.66±0.74	3.69±0.74	3.54±0.75	3.91±0.74	3.51±0.62	0.013
Need for Cognition[2]	3.42±0.95	3.48±0.95	3.18±0.92	3.65±0.97	3.61±0.93	0.002[AD]
Confidence in Parenting Skills[2]	3.90±0.90	3.94±0.88	3.77±0.91	4.17±0.88	3.73±1.10	0.028
Perceived Stress[5]	3.41±0.75	3.43±0.75	3.33±0.74	3.62±0.69	3.30±0.81	0.095
Self-Efficacy of Stress Management[5]	2.84±0.88	2.89±0.89	2.75±0.82	2.85±0.94	2.85±0.93	0.440

*ANOVA indicate significant (p<0.01) main effects among racial/ethnic group.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and Hispanics.

[B] Whites and Blacks.

[C] Whites and Asians.

[D] Hispanics and Blacks.

[E] Hispanics and Asians.

[F] Blacks and Asians.

[1] White (n=131), Hispanic (n=49) Black (n=24), and Asian (n=16) participants who provided anthropometric data.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[3] Possible range 0 to 30; higher scores indicate poorer health-related quality of life.

[4] Possible score range = 0 to 42; higher scores indicate more physical activity.

[5] Possible score range = 1 to 4; higher scores indicate greater expression of the characteristic measured.

overweight, and obesity, respectively; however, it has been found that these cutoffs are inadequate in assessing the risk for type 2 diabetes in Asian populations and their BMI cutoffs need to be adjusted.[301-304] Thus, the cutoffs used to categorize overweight and obesity in Asian populations were 23 kg/m^2 to <27.5 kg/m^2 and 27.5 kg/m^2 or higher, respectively.[301,302,304] Using the average BMI, White, Hispanic, and Asian mothers were overweight, and Black mothers were obese.

Maternal Health Status. White mothers reported significantly lower depression severity than Hispanic mothers. No significant differences were found in Health-Related Quality of Life[110,123] scores by maternal race/ethnicity, with all mothers reporting few days of poor mental and physical health monthly.

Maternal Physical Activity, Screentime. No significant differences were found in maternal physical activity level by maternal race/ethnicity, though all mothers had low physical activity scores (possible range 0 to 42). White and Asian mothers reported significantly fewer total minutes of screentime per day than Hispanic mothers.

Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use. Mothers similarly valued physical activity for themselves moderately. However, White mothers placed significantly higher value on physical activity for children and had higher levels of encouragement and facilitation of children's physical activity than Hispanic mothers.

White mothers reported a higher importance of modeling physical activity behaviors to children and engaged in physical activity with their children more often than Hispanic mothers. No significant differences were identified by maternal race/ethnicity for the importance of not modeling sedentary behaviors. Mothers tended to agree that not

modeling sedentary behavior is important. No significant differences were identified in maternal modeling of physical activity or sedentary behavior by maternal race/ethnicity. Mothers tended to infrequently model physical activity and not sedentary behavior to their child.

Maternal Sleep Time and Quality. Maternal sleep time did not significantly differ by maternal race/ethnicity, with mothers just meeting the recommendations for adult sleep (7-9 hours).[305] Asian mothers reported having higher sleep quality than Whites and Hispanics, although all sleep quality was rated as moderate to moderate-high.

Maternal Dietary Intake. Maternal dietary intake did not significantly differ by maternal racial/ethnic category. Mothers fell below the recommended intake of fruits and vegetables (5 per day) and fiber (25 grams per day) daily.[306] On the positive side, they had low intake of sugar-sweetened beverages.

Maternal Eating Behaviors. Mothers did not significantly differ in their Disinhibited and Emotional Eating, and Dietary Restraint scores by maternal race/ethnicity. Overall, Disinhibited Eating, Emotional Eating, and Dietary Restraint scores were low. However, White mothers scored higher on food adventurous than other groups, with differences being significant for Hispanic mothers.

Maternal Feeding Practices. Most maternal feeding practices were similar across racial/ethnic groups. Mothers moderately modeled healthy eating, but also moderately used covert control over child food intake. Mothers used food and non-food rewards somewhat during meals. Black and Asian mothers used more overt control of child food intake than White and Hispanic mothers. Hispanic and Asian mothers pressured their children to eat more than White mothers.

Maternal Outcome Expectations for Healthy Behaviors. Mothers did not differ significantly in their outcome expectations for healthy eating or physical activity by maternal race/ethnicity. Mothers had high outcome expectations for all healthy behaviors.

Maternal Self-Efficacy for Promoting Healthy Behaviors. White and Black mothers had higher self-efficacy for performing behaviors that protected children from obesity, as well as child eating and weight management behaviors than Hispanic mothers. Mothers had moderate-high self-efficacy for promoting child physical activity and for engaging in weigh-protective behaviors for themselves.

Maternal Psychographic Characteristics. Few differences occurred in maternal psychographic characteristics by race/ethnicity. Mothers reported moderate to moderate-high personal organization and confidence in parenting skills. White and Black mothers reported a higher need for cognition score than Hispanics. Mothers reported moderate perceived stress, but low self-efficacy of their ability to manage stress.

Child Intrapersonal Characteristics by Maternal Race/Ethnicity

Mothers reported that their young children (4.57±1.66SD) were predominately male (51.8%). Children with White and Asian mothers were younger than children with Black mothers; the proportion of children who were male or female did not differ significantly by maternal race/ethnicity.

Child intrapersonal characteristics that were studied included health status, BMI percentiles for age, physical activity and sedentary behaviors, beverage intake, eating styles, and sleep time and quality. Means, standard deviations, and significant differences found in ANOVA with Tukey post-hoc among maternal racial/ethnic group are shown in Table 14.

Table 14: Child Intrapersonal Characteristics by Maternal Race/Ethnicity (N=568)

Characteristic	Total Sample (n=568) Mean±SD or N (%)	White (n=340) Mean±SD or N (%)	Hispanic (n=149) Mean±SD or N (%)	Black (n=46) Mean±SD or N (%)	Asian (n=33) Mean±SD or N (%)	ANOVA* p
Child Age	4.57±1.66	4.53±1.63	4.62±1.72	5.19±1.74	3.84±1.29	0.004[BF]
Child Sex						0.236
Male	294 (51.76%)	178 (52.35%)	83 (55.70%)	20 (43.48%)	13 (39.39%)	
Female	274 (48.24%)	162 (47.65%)	66 (44.30%)	26 (56.52%)	20 (60.61%)	
Child Health Status						
Child Health Status[1]	4.37±0.79	4.51±0.72	4.15±0.87	4.37±0.71	3.94±0.97	0.000[AC]
Child Quality of Life[2]	1.92±3.16	1.98±3.21	1.95±3.55	1.77±2.36	1.42±1.21	0.793
Child Physical Activity and Sedentary Behaviors						
Child Physical Activity Level[3]	25.92±11.50	26.50±11.58	25.05±11.03	25.85±12.80	24.00±10.96	0.455
Child Screentime, minutes/day	295.72±267.77	283.24±269.85	337.55±276.89	282.39±258.48	254.09±196.65	0.152
Child Beverage Intake						
Sugar-Sweetened Beverages (servings/day)	0.32±0.45	0.28±0.45	0.39±0.45	0.45±0.51	0.17±0.25	0.003[EF]
Milk (servings/day)	0.82±0.37	0.84±0.36	0.77±0.38	0.70±0.39	1.04±0.19	0.000[BCEF]
100% Fruit Juice (servings/day)	0.58±0.38	0.53±0.39	0.67±0.37	0.70±0.34	0.50±0.37	0.000[AB]
Vegetable Juice (servings/day)	0.15±0.29	0.10±0.24	0.25±0.35	0.21±0.36	0.18±0.33	0.000[A]
Child Eating Styles						
Food Neophobia[4]	3.07±1.03	3.09±1.05	3.14±0.98	2.88±1.10	2.87±0.93	0.296
Emotional Eating[4]	1.86±0.84	1.84±0.84	1.94±0.84	1.72±0.73	2.03±0.99	0.233
Self-Regulation[4]	3.31±0.98	3.34±0.99	3.27±0.95	3.17±0.94	3.26±1.11	0.659
Child Sleep Time and Quality						
Sleep Time (hours/day)	9.59±1.04	9.70±1.07	9.37±0.97	9.31±0.96	9.64±0.91	0.007[A]
Child Met Sleep Recommendations[5]	128 (22.54%)	92 (27.06%)	23 (15.44%)	7 (15.22%)	6 (18.18%)	0.018
Sleep Quality[2]	4.25±0.76	4.28±0.77	4.21±0.74	4.26±0.83	4.06±0.70	0.411

*ANOVA indicate significant (p<0.01) main effects among racial/ethnic group.
Tukey post-hoc tests indicate significant (p<0.05) between group differences of:
[A] Whites and Hispanics.
[B] Whites and Blacks.
[C] Whites and Asians.
[D] Hispanics and Blacks.
[E] Hispanics and Asians.
[F] Blacks and Asians.
[1] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.
[2] Possible range 0 to 30; higher scores indicate poorer health-related quality of life.
[3] Possible score range = 0 to 42; higher scores indicate more physical activity.
[4] Possible score range = 1 to 4; higher scores indicate greater expression of the characteristic measured.
[5] Possible score range = 0 to 1; children were categorized as meeting sleep recommendations set forth by the National Sleep Foundation[305] if they had 11-14, 10-13, or 9-11 hours of sleep based on age categories (2, 3-5, and 6-9 years of age); scores of 0 and 1 were categorized as either not meeting or meeting recommendations for age, respectively.

Child Health Status. Mothers reported children had good to excellent health regardless of race/ethnicity. White mothers reported their children had a better health status than Hispanics and Asians. No significant differences were found in Child Quality of Life[110,123] score, with mothers reporting that their children had few days of poor mental or physical health monthly.[110,123]

Child BMI Percentile for Age. The weight and height of the child were collected after completion of the survey so that a height measuring kit could be mailed to participants. Few mothers responded (n=221). Children were removed if the parent reported that they did not actually measure their child's height and weight or if measurements were not biologically plausible. To determine biologic plausibility, children's height were compared to age- and sex- specific height mean and SD data used to generate growth charts; data were considered implausible if a parent reported that the child was a height above the 97th percentile mean plus 1 SD or were below the 3rd percentile mean minus 1 SD. Mothers reporting their child's weight status were White (n=39), Hispanic (n=9), Black (n=3), and Asian (n=5). Overall, child BMI was 61.20±27.98SD. No further analyses could be conducted due to small cell sizes across race/ethnicities.

Child Physical Activity and Sedentary Behaviors. Children had moderate physical activity scores and did not differ by maternal race/ethnicity. Children also did not differ in the amount of screentime daily, however, all children exceeded the recommendations for screentime (<1 hour daily of high quality programming for children older than 2 years).[307]

Child Beverage Intake. Sugar-sweetened beverage intake was low overall. However, children of Asian mothers consumed fewer sugar-sweetened beverages than those of

Hispanic or Black. Milk intake was below recommendations, with children of Asian mothers drinking more milk than the children of all other mothers and children of White mothers drinking more than those of Black mothers. Juice intake was within recommendations, with children of White mothers consuming less juice than the children of Hispanic mothers.

Child Eating Styles. Child food neophobia, and self-regulation scores were moderate whereas child emotional eating scores were low. No significant differences were reported in child food neophobia, emotional eating, or self-regulation by maternal race/ethnicity.

Child Sleep Time and Quality. Children did not meet sleep recommendations across maternal racial/ethnic categories.[305] Children of White mothers got significantly more sleep than the children of Hispanic mothers; children of White mothers also tended to meet sleep recommendations more than children of Hispanics, though not significantly. No significant differences were found in sleep quality by maternal race/ethnicity.

Interpersonal Characteristics of Mothers and their Young Children by Maternal Race/Ethnicity

Interpersonal characteristics studied included family meal cognitions, family meal behaviors, and family and household interactions and organization. Means, standard deviations, and significant differences found in ANOVA with Tukey post-hoc among maternal racial/ethnic group are shown in Table 15.

Family Meal Cognitions. No significant differences were found for family meal cognitions by maternal race/ethnicity. Mothers reported that family meals are important and that their family mealtime atmosphere was positive. Mothers tended to agree that they planned for meals ahead of time and that they put effort into preparing meals.

Table 15: Interpersonal Characteristics of Mothers and their Young Children by Maternal Race/Ethnicity (N=568)

Characteristic	Total Sample (n=568) Mean±SD or N (%)	White (n=340) Mean±SD or N (%)	Hispanic (n=149) Mean±SD or N (%)	Black (n=46) Mean±SD or N (%)	Asian (n=33) Mean±SD or N (%)	ANOVA* p
Family Meal Cognitions						
Importance Placed on Family Meals[1]	4.44±0.66	4.48±0.63	4.43±0.68	4.32±0.76	4.20±0.76	0.074
Family Meal Atmosphere[1]	4.06±0.88	4.02±0.90	4.08±0.77	4.37±0.92	3.91±1.01	0.053
Family Meal Planning[1]	3.41±1.04	3.39±1.05	3.37±1.00	3.58±1.09	3.62±0.93	0.401
Effort of Cooking[1]	3.56±0.90	3.50±0.92	3.58±0.84	3.97±0.96	3.52±0.76	0.011
Time and Energy for Family Meals[1]	4.09±0.96	4.07±0.96	4.06±0.91	4.29±1.09	4.06±0.96	0.497
Meal Preparation Self-Efficacy[1]	3.98±0.90	4.00±0.90	3.83±0.88	4.22±0.85	4.06±0.87	0.046
Family Meal Behaviors						
Family Meal Frequency/Week	12.48±4.87	12.88±4.59	11.85±5.01	11.15±5.68	13.03±5.44	0.035
Meal Environment Frequency/Week						
Unhealthy Meal Location	3.77±3.93	2.97±3.41	5.30±4.42	4.61±4.53	3.91±3.49	0.000[AB]
In the Car	0.58±1.46	0.36±1.02	1.15±2.15	0.52±1.24	0.39±1.00	0.000[ADE]
At Fast Food Restaurant	0.92±1.29	0.70±1.08	1.31±1.45	1.07±1.58	1.12±1.58	0.000[A]
In Front of TV	2.27±2.46	1.90±2.38	2.84±2.51	3.02±2.59	2.39±2.18	0.000[AB]
At Dining Room Table	4.75±2.47	5.08±2.29	4.05±2.65	4.43±2.75	4.88±2.29	0.000[A]
Media Use During Meals Frequency/Week						
Media Use (TV)	3.41±2.66	3.20±2.68	3.81±2.58	3.80±2.66	3.21±2.61	0.087
Media Use (Tablet, Video Games, etc.)	1.65±2.39	1.37±2.22	2.24±2.66	1.61±2.47	1.91±2.34	0.002[A]
Household Interactions and Organization						
Family Support for Healthy Eating[1]	3.57±1.35	3.57±1.35	3.52±1.38	3.85±1.43	3.52±1.10	0.527
Family Support for Physical Activity[1]	3.72±1.36	3.75±1.37	3.66±1.35	4.10±1.30	3.17±1.25	0.023
Family Cohesion[1]	4.03±0.75	4.04±0.76	3.93±0.71	4.42±0.67	3.87±0.84	0.001[BDF]
Household Organization[1]	3.49±1.09	3.41±1.07	3.60±1.11	3.78±1.14	3.45±1.09	0.078

*ANOVA indicate significant (p<0.01) main effects among racial/ethnic group.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and Hispanics.

[B] Whites and Blacks.

[C] Whites and Asians.

[D] Hispanics and Blacks.

[E] Hispanics and Asians.

[F] Blacks and Asians.

[1] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

Mothers felt that they had the time and energy to prepare meals for their children and had a high self-efficacy for having the skills needed to prepare healthy foods.

Family Meal Behaviors. No significant differences were identified among maternal race/ethnicity for weekly family meal frequency. Mothers reported frequent family meals, averaging about 2 meals daily. With regard to family meal locations, Whites reported eating fewer meals weekly in locations associated with less healthy intakes than Hispanics and Black. For example, Hispanic mothers reported eating family meals in the car more days per week than all other groups. Hispanic mothers also reported eating family meals more often at fast food restaurants and in front of the TV than Whites. Compared to White mothers, Hispanic mothers ate family meals at the dining room table fewer days per week. Although the frequency of TV use during meals did not differ by maternal race/ethnicity, Hispanic mothers reported greater use of media devices (i.e., tablet, video game) during meals more than White mothers.

Family and Household Interactions and Organization. Few differences were found for this component of the survey. Overall, mothers reported fairly good support from their families for healthy eating and physical activity as well as household organization. Family cohesion scores were higher for Black mothers than for all other groups.

Home Environment Characteristics of Mothers and their Young Children by Maternal Race/Ethnicity

Characteristics of the home environment studied included the Home Opportunities for Physical Activity Check-UP, sedentary screentime environment, household food availability, household food accessibility, and supermarket accessibility.

Means, standard deviations, and significant differences found in ANOVA with Tukey post-hoc among maternal racial/ethnic group are shown in Table 16.

Home Opportunities for Physical Activity Check-UP (HOP-UP). Few differences were found among racial/ethnic groups on these scales except for between Hispanic and White mothers. Hispanic mothers reported lower availability of indoor/home, outdoor/yard, and neighborhood space and supports for physical activity than White mothers. Hispanics reported having lower neighborhood environment safety than White and Asian mothers.

Sedentary Screentime Environment. Findings indicate that all mothers had high availability of media equipment (i.e., 9 devices or more). White mothers reported significantly less media equipment available in their children's bedrooms and lower media equipment accessibility than Hispanic and Black mothers. Additionally, in Asian homes, there was less media in children's bedrooms than in Hispanic homes and less media equipment accessibility than in Black mothers' homes. Total screentime allowed for children per day and total time TV was on daily did not differ by race/ethnicity.

Household Food Availability. There were no significant differences in household food availability for any food group by maternal race/ethnicity. Mothers reported servings/person/day of fruits/vegetables, sugar-sweetened beverage, and high energy/low nutrient snacks were about 6, 0.25, and 2, respectively.

Household Food Accessibility. There were no significant differences in food accessibility by maternal race/ethnicity. Mothers allowed children greater access to nutrient dense foods than nutrient poor foods. Additionally, mothers had policies in place

Table 16: Home Environment Characteristics of Mothers and their Young Children by Maternal Race/Ethnicity (N=568)

Characteristic	Total Sample (n=568) Mean±SD or N (%)	White (n=340) Mean±SD or N (%)	Hispanic (n=149) Mean±SD or N (%)	Black (n=46) Mean±SD or N (%)	Asian (n=33) Mean±SD or N (%)	ANOVA* p
Home Opportunities for Physical Activity (PA) Check-UP						
Indoor/Home Space and Supports for Physical Activity[1]	3.32±0.86	3.39±0.80	3.11±0.93	3.46±0.97	3.27±0.89	0.005[A]
Outdoor/Yard Space and Supports for Physical Activity[1]	4.37±0.68	4.45±0.59	4.20±0.81	4.39±0.76	4.15±0.68	0.002[A]
Neighborhood Space and Supports for Physical Activity[1]	4.03±1.00	4.12±0.99	3.77±1.02	4.07±1.05	4.17±0.65	0.003[A]
Neighborhood Environment Safety[1]	3.42±0.88	3.50±0.85	3.17±0.86	3.29±1.00	3.80±0.87	0.000[AE]
Frequency of Active Outdoor Play[1]	2.59±0.97	2.62±0.98	2.44±0.88	2.61±1.07	2.97±1.11	0.029
Sedentary Screentime Environment						
Media Equipment Availability in the Home	10.97±4.81	11.08±4.77	10.77±4.81	12.11±4.58	9.12±5.17	0.048
Media Equipment Availability in the Child's Bedroom	1.44±1.65	1.22±1.62	1.87±1.68	2.00±1.62	1.06±1.32	0.000[ABE]
Media Equipment Accessibility[1]	2.53±1.19	2.37±1.18	2.74±1.13	3.16±1.24	2.38±1.00	0.000[ABF]
Minutes of Screentime Child Allowed per Day	457.42±673.41	426.40±663.70	580.37±780.78	454.89±518.03	225.45±188.75	0.022
Minutes of Time the TV is on Daily with No One Watching	130.96±210.83	124.28±209.21	134.90±201.63	176.74±263.49	118.18±185.91	0.444
Household Food Availability						
Fruit/Vegetables (servings/person/day)	5.96±2.06	6.03±2.03	5.74±2.21	5.79±2.12	6.47±1.42	0.213
Sugar-Sweetened Beverages (servings/person/day)	0.24±0.26	0.22±0.26	0.26±0.23	0.27±0.29	0.27±0.26	0.212
High Energy/Low Nutrient Snacks (servings/person/day)	2.01±1.82	1.90±1.75	2.17±1.90	2.01±1.97	2.36±1.85	0.303
Household Food Accessibility						
Child Access to Nutrient Poor Foods[2]	0.96±1.47	0.91±1.43	1.07±1.58	0.91±1.36	1.00±1.52	0.723
Child Access to Nutrient Dense Foods[3]	2.43±1.74	2.57±1.72	2.30±1.76	2.09±1.72	1.97±1.76	0.063
Child Food Access Policy to Nutrient Poor Foods[2]	0.74±1.27	0.61±1.17	0.96±1.45	0.87±1.24	0.91±1.38	0.025
Child Food Access Policy to Nutrient Dense Foods[3]	1.65±1.71	1.50±1.65	1.89±1.72	1.80±1.83	1.85±1.95	0.096
Supermarket Accessibility[1]	4.03±1.08	4.09±1.05	3.81±1.16	4.22±0.99	4.03±0.95	0.033

*ANOVA indicate significant (p<0.01) main effects among racial/ethnic group.
Tukey post-hoc tests indicate significant (p<0.05) between group differences of:
[A] Whites and Hispanics.
[B] Whites and Blacks.
[C] Whites and Asians.
[D] Hispanics and Blacks.
[E] Hispanics and Asians.
[F] Blacks and Asians.
[1] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.
[2] Possible score range = 0 to 6; higher scores indicate greater expression of the characteristic measured.
[3] Possible score range = 0 to 5; higher scores indicate greater expression of the characteristic measured.

that allowed children to independently access nutrient dense foods more so than nutrient poor foods.

Supermarket Accessibility. No significant differences were found in maternal access to supermarkets. All mothers reported that supermarkets were easily accessible to them.

HOME ENVIRONMENTS OF MOTHERS AND THEIR YOUNG CHILDREN BY ACCULTURATION LEVEL

To address Research Question "*2A. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers with high or low personal acculturation levels?"* And "*2B. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers living in a high or low acculturation environment levels?",* Hispanic mothers were sorted by their personal and acculturation environment scores into high and low scoring groups. For Research Question 2A, White mothers (n=340) were compared with Hispanic mothers who were assigned to either high or low personal acculturation (n=95, n=54, respectively). For Research Question 2B, White mothers (n=340) were compared with Hispanic mothers who were assigned to either living in a high or low acculturation environment (n=35, n=114, respectively). The goal of this question was to further explore the differences noted between White mothers and Hispanic mothers in Research Question 1 to investigate the possible role that acculturation may play in these differences.

Hispanic Mothers and Personal Acculturation

The personal acculturation score for Hispanic mothers was based on the language that the survey was completed in, the language that is spoken most frequently in the home, and the country of birth. Hispanic mothers having a personal acculturation score of 1, 2 or 3 were categorized as low personal acculturation and those scoring 0 were categorized as high personal acculturation. A summary of the categorization of mothers by the two personal acculturation factors is in Table 17. Overall, few mothers were categorized as having low acculturation (n=54). Of the low acculturation mothers, the vast majority spoke Spanish in the home and were born outside of the U.S.; half completed the survey in Spanish. Of the 41 Hispanics born outside of the U.S., most immigrated from Mexico (38%) and the Dominican Republic (11%), with few immigrating from Peru, Colombia, Cuba, Ecuador, Costa Rica, Guatemala, and Puerto Rico (7%, 6%, 4%, 4%, 2%, 2%, and 2%, respectively).

Demographic Characteristics by Personal Acculturation. Demographic characteristics for White, high personal acculturation Hispanic, and low personal acculturation Hispanic mothers are shown in Table 18. ANOVA with Tukey post-hoc tests revealed few demographic differences among the three groups of mothers. In general, White mothers tended to be older than high personal acculturation Hispanic mothers and more educated than both groups of Hispanic mothers. A greater proportion of high personal acculturation Hispanic and White mothers worked than low personal acculturation Hispanic mothers. Most mothers were in dual parent households with a greater percent of White mothers tending to be in dual parent households than high personal acculturation Hispanic mothers. Affluence was moderate for all mothers but was significantly lower for low personal acculturation Hispanic mothers than White

Table 17: Hispanics Grouped by Personal Acculturation (n=149)

Characteristic	High Acculturation[1] (n=95)	Low Acculturation[1] (n=54)	t-test *p*
Language of Survey			0.000
English	95 (100.00%)	27 (50.00%)	
Spanish	0 (0.00%)	27 (50.00%)	
Language used in Home			0.000
English	95 (100.00%)	9 (16.67%)	
Spanish	0 (0.00%)	45 (83.33%)	
Country of Birth			0.000
U.S.	95 (100.00%)	13 (24.07%)	
Outside of U.S.	0 (0.00%)	41 (75.93%)	
Colombia	0 (0.00%)	3 (5.55%)	
Costa Rica	0 (0.00%)	1 (1.85%)	
Cuba	0 (0.00%)	2 (3.70%)	
Dominican Republic	0 (0.00%)	6 (11.11%)	
Ecuador	0 (0.00%)	2 (3.70%)	
Guatemala	0 (0.00%)	1 (1.85%)	
Mexico	0 (0.00%)	21 (38.89%)	
Peru	0 (0.00%)	4 (7.41%)	
Puerto Rico	0 (0.00%)	1 (1.85%)	

[1]Personal acculturation uses three variables (i.e., language of survey, language used in the home, and country of birth), 1 point was granted when the participant had a low acculturation score for that item (i.e., completed survey in Spanish, uses Spanish in the home, born outside of the U.S.). Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

Table 18: Demographic Characteristics by Personal Acculturation (N=489)

Characteristic	White (n=340)	Hispanic Personal Acculturation		ANOVA* p
		High[1] (n=95)	Low[1] (n=54)	
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Age	33.33±5.44	30.31±5.23	31.48±6.07	0.000[A]
Maternal Education[2]	2.39±0.71	2.19±0.69	2.09±0.73	0.003[AB]
Maternal Hours of Employment[3]				0.002[BC]
Does not work	121 (35.59%)	33 (34.74%)	31 (57.41%)	
Part-time (less than 30 hours/week)	62 (18.24%)	8 (8.42%)	9 (16.67%)	
Near Full-time/Full-time (30 or more hours/week)	157 (46.18%)	54 (56.84%)	14 (25.93%)	
Marital Status[4]				0.001[A]
Single Parents	47 (13.82%)	29 (30.53%)	10 (18.52%)	
Dual Parents	293 (86.18%)	66 (69.47%)	44 (81.48%)	
Family Affluence Score[5]	5.59±1.73	5.23±1.82	4.74±1.77	0.002[B]
Food Insecurity Risk[6]	1.72±0.95	1.91±0.92	1.87±0.91	0.184
Environmental Health Capital[7]	2.28±0.72	2.24±0.56	2.13±0.55	0.327

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic personal acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high personal acculturation Hispanics.

[B] Whites and low personal acculturation Hispanics.

[C] High acculturation personal Hispanics and low personal acculturation Hispanics.

[1] Personal acculturation uses three variables (i.e., language of survey, language used in the home, and country of birth), 1 point was granted when the participant had a low acculturation score for that item (i.e., completed survey in Spanish, uses Spanish in the home, born outside of the U.S.). Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 3; higher scores indicate higher education level.

[3] Possible score range = 1 to 3 for ANOVA; scores of 1, 2, 3 were categorized as does not work, works part-time, and works full-time, respectively.

[4] Possible score range = 1 to 2 for ANOVA; scores of 1, 2 were categorized as single parent and dual parent household, respectively.

[5] Family Affluence Scale contains 4-items; scores range from 0 to 9; scores of 0 to 3, 4 to 6, and 7 to 9 were categorized as having low, middle, and high family affluence, respectively.

[6] Possible score range = 1 to 4; higher scores indicate greater food insecurity risk.

[7] Environmental Health Capital uses four geocoded variables (i.e., average community income, number of supermarkets, population density, and percent owner occupied housing) using the participants zip code. 1 point was granted to the home residences with zip code at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 4; scores of 0 to 1, 2, and 3 to 4 were categorized as having low, middle, and high environmental-health capital, respectively.

mothers. All mothers reported a low risk of food insecurity and had moderate levels of environmental health capital.

Maternal Intrapersonal Characteristics by Personal Acculturation. Intrapersonal characteristics studied included weight status, health status, physical activity and screentime, behavior modeling and encouragement of physical activity and media use, sleep time and quality, dietary intake, eating behaviors, feeding practices, outcome expectations for healthy behaviors, self-efficacy for promoting healthy behaviors, and psychographics. Data for the intrapersonal characteristics are reported in Table 19.

Maternal Weight Status. All mothers who reported height and weight provided biologically plausible data. This included 131 White, 38 high personal acculturation Hispanic mothers, and 11 low personal acculturation Hispanic mothers. Mothers in all groups were overweight (i.e., BMI>25), with high personal acculturation Hispanic mothers reaching the threshold to be considered obese. Groups did not differ significantly.

Maternal Health Status. All mothers reported few days of poor mental and physical health monthly.[110,123] Mothers reported low depression severity scores. Groups did not differ significantly.

Maternal Physical Activity, Screentime. All mothers had low physical activity scores and did not differ significantly from each other. Screentime for all mothers was much higher than the 1- to 2-hour limit recommended daily. White mothers had the fewest minutes of daily screentime, which was significantly less than high personal acculturation Hispanic mothers.

Table 19: Maternal Intrapersonal Characteristics by Personal Acculturation (N=489)

Characteristic	White (n=340)	Hispanic Personal Acculturation		ANOVA*
		High[1] (n=95)	Low[1] (n=54)	*p*
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Maternal Weight Status[2]	27.84±6.63	29.94±8.47	29.40±5.67	0.240
Maternal Health Status				
Depression Severity[3]	1.55±0.75	1.73±0.68	1.78±0.67	0.024
Health-Related Quality of Life[4]	3.69±5.47	4.18±5.81	4.62±5.62	0.450
Maternal Physical Activity, Screentime				
Maternal Physical Activity Level[5]	14.74±9.84	12.53±8.17	12.11±8.58	0.038
Maternal Screentime (minutes/day)	329.47±260.98	439.90±366.94	361.11±230.16	0.003[A]
Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use				
Value Placed on Physical Activity for Self[3]	3.01±1.14	2.70±1.17	2.75±0.95	0.028
Value Placed on Physical Activity for Child[3]	3.88±0.87	3.52±0.88	3.32±0.86	0.000[AB]
Encouragement and Facilitation of Physical Activity[3]	4.16±0.66	3.88±0.63	3.79±0.67	0.000[AB]
Importance of Modeling Physical Activity[3]	4.00±0.79	3.71±0.86	3.69±0.81	0.001[AB]
Importance of Not Modeling Sedentary Behavior[3]	3.84±0.94	3.65±0.90	3.76±1.03	0.230
Mother and Child Co-Physical Activity Frequency days/week	3.83±1.83	3.32±1.85	2.87±1.68	0.000[AB]
Modeling Physical Activity days/week	2.61±1.68	2.44±1.57	2.19±1.62	0.190
Modeling Sedentary Behavior days/week	3.42±2.29	4.27±2.11	3.61±2.23	0.005[A]
Maternal Sleep Time and Quality				
Sleep Time (hours/day)	7.13±1.18	6.79±1.36	7.40±1.10	0.008[AC]
Sleep Quality[3]	3.19±0.94	3.00±0.84	3.28±0.79	0.125
Maternal Dietary Intake				
Fruit and Vegetable (servings/day)	4.54±1.84	4.25±1.87	4.38±1.63	0.364
Dietary Fiber (grams/day)	18.25±6.32	18.86±6.46	19.30±5.60	0.419
Sugar-Sweetened Beverages (servings/day)	0.69±0.86	0.94±0.85	0.66±0.60	0.027
Maternal Eating Behaviors				
Disinhibited Eating[6]	2.06±0.78	2.11±0.78	2.04±0.74	0.850
Emotional Eating[6]	2.24±0.94	2.19±0.92	2.31±0.89	0.732
Dietary Restraint[6]	2.44±0.70	2.33±0.68	2.57±0.71	0.126
Food Adventurousness[6]	3.21±0.68	2.97±0.82	3.13±0.66	0.014

Table 19 continued: Maternal Intrapersonal Characteristics by Personal Acculturation (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Personal Acculturation High[1] (n=95) Mean±SD or N (%)	Low[1] (n=54) Mean±SD or N (%)	ANOVA* p
Maternal Feeding Practices				
Healthy Eating Modeling[3]	3.69±0.77	3.39±0.80	3.59±0.69	0.004[A]
Use of Food Rewards During Meals[3]	2.34±0.73	2.48±0.83	2.23±0.65	0.112
Use of Non-Food Rewards During Meals[3]	2.76±0.96	2.87±0.93	2.62±0.82	0.283
Overt Control of Intake[3]	3.05±0.80	3.20±0.76	3.19±0.65	0.150
Covert Control of Intake[3]	3.68±1.25	3.67±1.18	2.93±1.39	0.000[BC]
Pressures Child to Eat[3]	2.20±0.95	2.52±0.94	2.49±0.83	0.003[A]
Restricts Child Food Choices[3]	3.72±0.93	3.93±0.68	3.85±0.92	0.094
Maternal Outcome Expectations for Healthy Behaviors				
Healthy Eating[3]	4.57±0.54	4.55±0.52	4.72±0.41	0.121
Physical Activity[3]	4.45±0.60	4.44±0.54	4.68±0.44	0.018
Maternal Self-Efficacy for Promoting Healthy Behaviors				
Obesity Protective Behaviors in Children[6]	3.79±0.68	3.59±0.65	3.52±0.69	0.003[AB]
Child Eating and Weight Management[6]	3.86±0.69	3.65±0.71	3.56±0.70	0.002[AB]
Child Physical Activity[6]	3.57±1.01	3.41±0.88	3.39±1.11	0.231
Parent Health Behaviors[6]	3.36±0.88	3.23±0.85	3.12±0.89	0.111
Maternal Psychographic Characteristics				
Personal Organization[3]	3.69±0.74	3.50±0.74	3.61±0.78	0.106
Need for Cognition[3]	3.48±0.95	3.24±0.91	3.07±0.93	0.003[B]
Confidence in Parenting Skills[3]	3.94±0.88	3.74±0.98	3.83±0.77	0.132
Perceived Stress[6]	3.43±0.75	3.25±0.79	3.45±0.63	0.110
Self-Efficacy of Stress Management[6]	2.89±0.89	2.70±0.84	2.82±0.78	0.178

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic personal acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high personal acculturation Hispanics.

[B] Whites and low personal acculturation Hispanics.

[C] High acculturation personal Hispanics and low personal acculturation Hispanics.

[1] Personal acculturation uses three variables (i.e., language of survey, language used in the home, and country of birth), 1 point was granted when the participant had a low acculturation score for that item (i.e., completed survey in Spanish, uses Spanish in the home, born outside of the U.S.). Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] White (n=131), and high and low personal acculturation Hispanics (n=38 and n=11, respectively) who provided anthropometric data.

[3] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[4] Possible range 0 to 30; higher scores indicate poorer health-related quality of life.

[5] Possible score range = 0 to 42; higher scores indicate more physical activity.

[6] Possible score range = 1 to 4; higher scores indicate greater expression of the characteristic measured.

Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use.
White mothers scored significantly higher on most modeling and encouragement of
physical activity and media use scales (i.e., value of physical activity for child,
encouragement and facilitation of child's physical activity, importance of modeling
physical activity, and mother and child co-physical activity) than both high and low
personal acculturation Hispanic mothers. High and low personal acculturation Hispanic
mothers did not differ on any measure.

Maternal Sleep Time and Quality. White mothers barely met sleep recommendations of
7 to 9 hours nightly.[305] High personal acculturation mothers did not meet this minimum
whereas low personal acculturation mothers met recommendations.[305] High personal
acculturation Hispanics slept significantly fewer hours than other mothers. All mothers
reported moderate sleep quality.

Maternal Dietary Intake. Mothers fell below the recommended intake of fruits and
vegetables (5 per day) and fiber (25 grams per day) daily.[306] Overall, mothers had low
intake of sugar-sweetened beverages. Maternal intake of fruits and vegetables, sugar-
sweetened beverages, and dietary fiber did not significantly differ among the three groups
of mothers.

Maternal Eating Behaviors. Disinhibited Eating, Emotional Eating, and Dietary
Restraint scores tended to be low. Food Adventurousness scores were moderate. Groups
of mothers tended to not differ significantly on any of these measures.

Maternal Feeding Practices. White mothers modeled healthy eating more and pressured
children to eat significantly less than high personal acculturation Hispanic mothers. Low

personal acculturation Hispanic mothers covertly controlled children's intake less than other mothers.

Maternal Outcome Expectations for Healthy Behaviors. Mothers had high outcome expectations for both heathy eating and physical activity. No significant differences were found for outcome expectations among the three groups of mothers.

Maternal Self-Efficacy for Promoting Healthy Behaviors. Mothers had fairly moderate self-efficacy for engaging in all behaviors. White mothers had greater self-efficacy for performing obesity protective behaviors in children and for child eating and weight management than both high and low personal acculturation Hispanic mothers. Mothers did not differ in their self-efficacy for promoting child physical activity or for parent health behaviors.

Maternal Psychographic Characteristics. Mothers scored somewhat positively on personal organization and confidence in their parenting skills. They reported moderate perceived stress, but somewhat low self-efficacy for their ability to manage their stress. The only differences in psychographic characteristics noted were with regard to need for cognition. White mothers had a higher need for cognition than low personal acculturation Hispanic mothers.

Child Intrapersonal Characteristics by Personal Acculturation. Mean child age was 4 to 5 years. Sex was nearly evenly distributed (52% boys). Child intrapersonal characteristics studied included health status, physical activity and sedentary behaviors, beverage intake, eating styles, and sleep time and quality. Data for the children's intrapersonal characteristics of the child are shown in Table 20.

Table 20: Child Intrapersonal Characteristics by Personal Acculturation (N=489)

Characteristic	White (n=340)	Hispanic Personal Acculturation High[1] (n=95)	Low[1] (n=54)	ANOVA* p
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Child Age	4.53±1.63	4.86±1.74	4.18±1.59	0.046
Child Sex				0.640
Male	178 (52.35%)	51 (53.68%)	32 (59.26%)	
Female	162 (47.65%)	44 (46.32%)	22 (40.74%)	
Child Health Status				
Child Health Status[2]	4.51±0.72	4.19±0.87	4.07±0.87	0.000[AB]
Child Quality of Life[3]	1.98±3.21	2.08±3.98	1.71±2.65	0.803
Child Physical Activity and Sedentary Behaviors				
Child Physical Activity Level[4]	26.50±11.58	25.61±10.78	24.07±11.48	0.321
Child Screentime, minutes/day	283.24±269.85	356.68±317.60	303.89±182.70	0.067
Child Beverage Intake				
Sugar-Sweetened Beverages (servings/day)	0.28±0.45	0.49±0.48	0.22±0.32	0.000[AC]
Milk (servings/day)	0.84±0.36	0.81±0.33	0.69±0.45	0.016[B]
100% Fruit Juice (servings/day)	0.53±0.39	0.60±0.36	0.78±0.36	0.000[BC]
Vegetable Juice (servings/day)	0.10±0.24	0.18±0.29	0.37±0.42	0.000[ABC]
Child Eating Styles				
Food Neophobia[2]	3.09±1.05	3.08±0.98	3.26±0.97	0.488
Emotional Eating[2]	1.84±0.84	2.03±0.89	1.79±0.74	0.112
Self-Regulation[2]	3.34±0.99	3.11±0.92	3.56±0.94	0.021
Child Sleep Time and Quality				
Sleep Time (hours/day)	9.70±1.07	9.21±0.93	9.62±0.99	0.001[A]
Child Met Sleep Recommendations[5]	92 (27.06%)	9 (9.47%)	14 (25.93%)	0.001[A]
Sleep Quality[2]	4.28±0.77	4.18±0.70	4.28±0.81	0.512

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic personal acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high personal acculturation Hispanics.

[B] Whites and low personal acculturation Hispanics.

[C] High acculturation personal Hispanics and low personal acculturation Hispanics.

[1] Personal acculturation uses three variables (i.e., language of survey, language used in the home, and country of birth), 1 point was granted when the participant had a low acculturation score for that item (i.e., completed survey in Spanish, uses Spanish in the home, born outside of the U.S.). Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[3] Possible score range = 0 to 30; higher scores indicate poorer health-related quality of life.

[4] Possible score range = 0 to 42; higher scores indicate more physical activity.

[5] Possible score range = 0 to 1; children were categorized as meeting sleep recommendations set forth by the National Sleep Foundation[305] if they had 11-14, 10-13, or 9-11 hours of sleep based on age categories (2, 3-5, and 6-9 years of age); scores of 0 and 1 were categorized as either not meeting or meeting recommendations for age, respectively.

Child Health Status. Mothers reported that their child's health status was very good; however, White mothers reported their children had significantly better health status than both groups of Hispanic mothers. Child Quality of Life scores[110,123] were similar across groups with mothers reporting children had few days of poor mental or physical health monthly.

Child Physical Activity and Sedentary Behaviors. All mothers reported that their children had low physical activity scores, with no differences among groups. All children exceeded daily screentime recommendations (<1 hour daily of high quality programming for children older than 2 years).[307]

Child Beverage Intake. Children infrequently drank sugar-sweetened beverages, milk, and fruit and vegetable juice. Children of high acculturation Hispanic mothers consumed significantly fewer sugar-sweetened beverages than children of other mothers. Children of low personal acculturation Hispanics consumed less milk than Whites and consumed more fruit and vegetable juice than both other groups.

Child Eating Styles. Overall, child food neophobia, and self-regulation scores were moderate whereas child emotional eating scores were low. Groups did not differ significantly on any of these measures.

Child Sleep Time and Quality. Only 24% of children met sleep-for-age recommendations, however, more children of White mothers met sleep-for-age recommendations than children of high acculturation Hispanic mothers (27%, 9%, respectively).[305] Children of White mothers slept significantly longer than children of high personal acculturation Hispanics. However, all mothers reported that their children had high sleep quality.

Interpersonal Characteristics of Mothers and their Young Children by Personal Acculturation. Interpersonal characteristics studied included family meal cognitions, family meal behaviors, and family and household interactions and organization. Data for the interpersonal characteristics are shown in Table 21.

Family Meal Cognitions. All mothers reported similar family meal cognitions. Mothers agreed that family meals are important and that their family mealtime atmosphere was positive. Mothers were fairly neutral about whether they planned for meals ahead of time and put effort into preparing meals. Mothers felt that they had the time and energy to prepare meals for their children and had a moderate self-efficacy for having the skills needed to prepare healthy foods.

Family Meal Behaviors. Overall, mothers reported that they shared frequent family meals. Compared to Whites, low personal acculturation Hispanic mothers reported significantly fewer total family meals weekly but had more family meals at unhealthy locations (i.e., in the car, at a fast food restaurant, in front of the TV) and fewer meals at healthy locations (i.e., the dining room table). Both groups of Hispanic mothers ate more meals at fast food restaurants and in front of the TV than Whites. Between acculturation groups, low personal acculturation Hispanics had more family meals at unhealthy locations (i.e., car) and fewer family meals at the dining table than high personal acculturation Hispanics. High personal acculturation Hispanic mothers tended to use media devices (i.e., tablet, video game) during meals significantly more than White mothers.

Family and Household Interactions and Organization. Overall, mothers reported neutral about having support from their families for healthy eating and physical activity.

Table 21: Interpersonal Characteristics by Personal Acculturation (N=489)

Characteristic	White (n=340)	Hispanic Personal Acculturation		ANOVA*
		High[1] (n=95)	Low[1] (n=54)	p
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Family Meal Cognitions				
Importance Placed on Family Meals[2]	4.48±0.63	4.38±0.75	4.54±0.52	0.265
Family Meal Atmosphere[2]	4.02±0.90	4.05±0.74	4.15±0.82	0.573
Family Meal Planning[2]	3.39±1.05	3.31±0.97	3.49±1.04	0.573
Effort of Cooking[2]	3.50±0.92	3.58±0.83	3.59±0.86	0.642
Time and Energy for Family Meals[2]	4.07±0.96	3.98±0.91	4.19±0.91	0.404
Meal Preparation Self-Efficacy[2]	4.00±0.90	3.80±0.89	3.88±0.86	0.125
Family Meal Behaviors				
Family Meal Frequency/Week	12.88±4.59	12.51±4.54	10.70±5.60	0.007[B]
Meal Environment Frequency/Week				
Unhealthy Meal Location	2.97±3.41	4.41±3.39	6.87±5.49	0.000[ABC]
In the Car	0.36±1.02	0.45±1.00	2.39±2.96	0.000[BC]
At Fast Food Restaurant	0.70±1.08	1.32±1.32	1.30±1.66	0.000[AB]
In Front of TV	1.90±2.38	2.64±2.34	3.19±2.76	0.000[AB]
At Dining Room Table	5.08±2.29	4.74±2.30	2.85±2.82	0.000[BC]
Media Use During Meals Frequency/Week				
Media Use (TV)	3.20±2.68	4.06±2.48	3.35±2.69	0.020
Media Use (Tablet, Video Games, etc.)	1.37±2.22	2.47±2.70	1.83±2.55	0.000[A]
Household Interactions and Organization				
Family Support for Healthy Eating[2]	3.57±1.35	3.38±1.34	3.75±1.42	0.267
Family Support for Physical Activity[2]	3.75±1.37	3.49±1.36	3.94±1.30	0.123
Family Cohesion[2]	4.04±0.76	3.90±0.67	3.97±0.78	0.267
Household Organization[2]	3.41±1.07	3.42±1.06	3.93±1.13	0.004[BC]

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic personal acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high personal acculturation Hispanics.

[B] Whites and low personal acculturation Hispanics.

[C] High acculturation personal Hispanics and low personal acculturation Hispanics.

[1] Personal acculturation uses three variables (i.e., language of survey, language used in the home, and country of birth), 1 point was granted when the participant had a low acculturation score for that item (i.e., completed survey in Spanish, uses Spanish in the home, born outside of the U.S.). Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

Mothers also reported that they had moderate family cohesion and household organization. Low personal acculturation Hispanics reported higher household organization scores than their comparators.

Home Environment Characteristics of Mothers and their Young Children by Personal Acculturation. Characteristics of the home environment studied included the Home Opportunities for Physical Activity Check-UP, sedentary screentime environment, household food availability, household food accessibility, and supermarket accessibility. Table 22 reports home environment characteristics findings.

Home Opportunities for Physical Activity Check-UP (HOP-UP). Overall, Hispanic mothers were less likely to live in environments that supported physical activity than Whites. For example, low personal acculturation Hispanic mothers had fewer indoor/home space and support for physical activity than Whites, and fewer outdoor/yard space and support for physical activity compared to others. Hispanics in both groups also had less neighborhood space and support for physical activity and perceived their neighborhood to be less safe than Whites. All mothers reported low (<3 days/week) frequency of active outdoor play weekly.

Sedentary Screentime Environment. Overall, mothers reported that their homes were replete with media devices. Low personal acculturation Hispanics had fewer media devices available in their homes than other mothers. Additionally, high personal acculturation Hispanic mothers tended to live in environments that facilitated screentime (i.e., media equipment in child's bedroom, media equipment accessibility) more than Whites. Mothers reported that they allowed their children to participate in excessive amounts of screentime (greater than 7 hours daily).

Table 22: Environmental Characteristics by Personal Acculturation (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Personal Acculturation		ANOVA* p
		High[1] (n=95) Mean±SD or N (%)	Low[1] (n=54) Mean±SD or N (%)	
Home Opportunities for Physical Activity Check-UP				
Indoor/Home Space and Supports for Physical Activity[2]	3.39±0.80	3.17±0.89	3.01±1.00	0.002[B]
Outdoor/Yard Space and Supports for Physical Activity[2]	4.45±0.59	4.33±0.74	3.97±0.90	0.000[BC]
Neighborhood Space and Supports for Physical Activity[2]	4.12±0.99	3.80±1.02	3.70±1.02	0.001[AB]
Neighborhood Environment Safety[2]	3.50±0.85	3.25±0.82	3.03±0.91	0.000[AB]
Frequency of Active Outdoor Play	2.62±0.98	2.48±0.90	2.36±0.85	0.120
Sedentary Screentime Environment				
Media Equipment Availability in the Home	11.08±4.77	11.88±5.05	8.81±3.65	0.001[BC]
Media Equipment Availability in the Child's Bedroom	1.22±1.62	2.02±1.72	1.61±1.58	0.000[A]
Media Equipment Accessibility[2]	2.37±1.18	2.86±1.15	2.54±1.08	0.002[A]
Minutes of Screentime Child Allowed per Day	426.40±663.70	580.89±790.00	579.44±771.62	0.084
Minutes of Time the TV is on Daily with No One Watching	124.28±209.21	137.37±209.04	130.56±189.71	0.857
Household Food Availability				
Fruit/Vegetables (servings/person/day)	6.03±2.03	5.60±2.20	5.98±2.21	0.206
Sugar-Sweetened Beverages (servings/person/day)	0.22±0.26	0.30±0.25	0.20±0.19	0.015
High Energy/Low Nutrient Snacks (servings/person/day)	1.90±1.75	2.34±1.85	1.88±1.97	0.097
Household Food Accessibility				
Child Access to Nutrient Poor Foods[3]	0.91±1.43	1.23±1.72	0.80±1.26	0.121
Child Access to Nutrient Dense Foods[4]	2.57±1.72	2.39±1.77	2.13±1.76	0.181
Child Food Access Policy to Nutrient Poor Foods[3]	0.61±1.17	1.11±1.54	0.70±1.25	0.003[A]
Child Food Access Policy to Nutrient Dense Foods[4]	1.50±1.65	2.08±1.71	1.56±1.72	0.011[A]
Supermarket Accessibility[2]	4.09±1.05	3.80±1.14	3.83±1.21	0.031

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic personal acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high personal acculturation Hispanics.

[B] Whites and low personal acculturation Hispanics.

[C] High acculturation personal Hispanics and low personal acculturation Hispanics.

[1] Personal acculturation uses three variables (i.e., language of survey, language used in the home, and country of birth), 1 point was granted when the participant had a low acculturation score for that item (i.e., completed survey in Spanish, uses Spanish in the home, born outside of the U.S.). Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[3] Possible score range = 0 to 6; higher scores indicate greater expression of the characteristic measured.

[4] Possible score range = 0 to 5; higher scores indicate greater expression of the characteristic measured.

Household Food Availability. Mothers reported that they had adequate (at least 5 servings/person/day) availability of fruits/vegetables in their homes, moderate availability (2 servings/person/day) of high energy/low nutrient snacks, and low availability (less than 1 serving/person/day) of sugar-sweetened beverages. There were no significant differences in household food availability.

Household Food Accessibility. There were no significant differences in child access to nutrient poor or nutrient dense foods between Whites and Hispanics grouped by personal acculturation. However, high personal acculturation Hispanics had policies in place that would allow their children to independently access nutrient dense and nutrient poor foods more than Whites.

Supermarket Accessibility. Mothers reported that supermarkets were easily accessible to them. There were no significant differences in supermarket accessibility among groups.

Summary of Personal Acculturation Results. Most significant differences occurred between Whites and Hispanics (either low or high personal acculturation or both) rather than between the two Hispanic acculturation groups. For intrapersonal characteristics, most of the differences occurred with variables associated with maternal encouragement of physical activity and self-efficacy for promoting healthy behaviors, with White mothers tending to score higher and both Hispanic groups scoring similarly. Few differences were found on intrapersonal measures between acculturation groups. One difference was for maternal sleep time, with high acculturation Hispanics scoring lower than low acculturation Hispanics and Whites. Another difference found was for covert control of children's dietary intake, with low personal acculturation Hispanic mothers scoring lower than high acculturation Hispanic and White mothers.

For intrapersonal characteristics of the child, one of the major differences occurred in child health status, with White mothers tending to score higher than both Hispanic groups. The only difference in child characteristics between Hispanic acculturation groups was for child beverage intake of sugar-sweetened beverages, and fruit and vegetable juice, with high personal acculturation Hispanics scoring higher for sugar-sweetened beverages and low personal acculturation Hispanics scoring higher on fruit and vegetable juice intake than other mothers.

For interpersonal characteristics, all of the differences occurred in family meal behaviors, with White mothers having more total meals together and fewer meals in less healthy locations (i.e., total number of meals in an unhealthy location, meals at a fast food restaurant) than both Hispanic groups. The only differences in interpersonal characteristics between acculturation groups was found in the family meal environment, with low personal acculturation Hispanics having more meals in unhealthy locations and in the car and fewer meals at the dining room table than high personal acculturation Hispanics and Whites.

Finally, most of the differences found in home environments occurred in the physical activity and media environments. White mothers perceived their neighborhood environment to be safer and had more neighborhood space and support for physical activity scores than both Hispanic groups. The only differences that occurred between Hispanic groups was in their indoor/home and for their total media equipment available in the home, where low personal acculturation Hispanics scored lower than high acculturation Hispanic and White mothers.

Hispanic Mothers and Acculturation Environment

The acculturation environment score was based on three census tract variables measuring the percentage of residencies inhabited by foreign-born individuals, foreign-born individuals arriving within the years 2010-2015, and percentage of Spanish-speaking individuals who speak English less than very well. For each of the three variables, mothers living in a census tract where the percentage of residents who were foreign-born, and/or foreign-born arriving within the years 2010-2015, and/or were Spanish-speaker who spoke English less than very well exceeded the state median as of 2015[296-298] were categorized as living in a low acculturation environment (score = 1 for each of the 3 variables). In cases where the percentage was below the state median, scores were 0. The 3 variables were summed to create score with a range of 0 to 3. Mothers were categorized based on their summed score as living in a low acculturation environment (i.e., score 1, 2 or 3) or high acculturation environment (i.e., score 0). A summary of the categorization of mothers by the three acculturation environment factors is in Table 23. Overall, most mothers were categorized as living in a low acculturation environment (n=128).

Demographic Characteristics by Acculturation Environment. Demographic characteristics for the White, Hispanics in a high acculturation environment, and Hispanics in a low acculturation environment are shown in Table 24. ANOVA with Tukey post-hoc tests revealed few demographic differences among the three groups of mothers. White mothers tended to be older than Hispanic mothers living in a low acculturation environment. Hispanics living in a low acculturation environment tended to have lower education levels than both other groups of mothers; however, mothers did not

Table 23: Hispanics Grouped by Acculturation Environment (n=149)

Characteristic	High Acculturation[1] (n=21)	Low Acculturation[1] (n=128)	t-test p
% Foreign-Born[2]			0.000
High acculturation	21 (0.00%)	30 (23.44%)	
Low acculturation	0 (0.00%)	98 (76.56%)	
% Foreign-Born Arriving within the years 2010-2015[2]			0.000
High acculturation	21 (0.00%)	58 (45.31%)	
Low acculturation	0 (0.00%)	70 (54.69%)	
% Spanish-Speaking Households Speaking English Less than Very Well[2]			0.000
High acculturation	21 (0.00%)	24 (18.75%)	
Low acculturation	0 (0.00%)	104 (81.25%)	

[1]Acculturation environment uses three geocoded variables (i.e., % foreign-born, % foreign-born arriving within the years 2010-2015, % Spanish-speaking households speaking English less than very well). 1 point was granted to the home residences with zip codes at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2]Participants grouped as having high acculturation lived in a census tract with a percentage below the median that of the participants' state (NJ or AZ) of residence. Participants grouped as having low acculturation lived in a census tract with a percentage at or above the median that of the participants' state (NJ or AZ) of residence.

Table 24: Demographic Characteristics by Acculturation Environment (N=489)

Characteristic	White (n=340)	Hispanic Acculturation Environment High[1] (n=21)	Hispanic Acculturation Environment Low[1] (n=128)	ANOVA* p
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Age	33.33±5.44	31.43±5.02	30.62±5.65	0.000[B]
Maternal Education[2]	2.39±0.71	2.57±0.60	2.09±0.70	0.000[BC]
Maternal Hours of Employment[3]				0.626
Does not work	121 (35.59%)	10 (47.62%)	54 (42.19%)	
Part-time (less than 30 hours/week)	62 (18.24%)	2 (9.52%)	15 (11.72%)	
Near Full-time/Full-time (30 or more hours/week)	157 (46.18%)	9 (42.86%)	59 (46.09%)	
Marital Status[4]				0.003[B]
Single Parents	47 (13.82%)	4 (19.05%)	35 (27.34%)	
Dual Parents	293 (86.18%)	17 (80.95%)	93 (72.66%)	
Family Affluence Score[5]	5.59±1.73	6.05±1.69	4.89±1.79	0.000[BC]
Food Insecurity Risk[6]	1.72±0.95	1.95±1.02	1.88±0.90	0.180
Environmental Health Capital[7]	2.28±0.72	2.48±0.68	2.16±0.52	0.069

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic environmental acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high environmental acculturation Hispanics.

[B] Whites and low environmental acculturation Hispanics.

[C] High environmental acculturation Hispanics and low environmental acculturation Hispanics.

[1] Acculturation environment uses three geocoded variables (i.e., % foreign-born, % foreign-born arriving within the years 2010-2015, % Spanish-speaking households speaking English less than very well). 1 point was granted to the home residences with zip codes at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 3; higher scores indicate higher education level.

[3] Possible score range = 1 to 3 for ANOVA; scores of 1, 2, 3 were categorized as does not work, works part-time, and works full-time, respectively.

[4] Possible score range = 1 to 2 for ANOVA; scores of 1, 2 were categorized as single parent and dual parent household, respectively.

[5] Family Affluence Scale contains 4-items; scores range from 0 to 9; scores of 0 to 3, 4 to 6, and 7 to 9 were categorized as having low, middle, and high family affluence, respectively.

[6] Possible score range = 1 to 4; higher scores indicate greater food insecurity risk.

[7] Environmental Health Capital uses four geocoded variables (i.e., average community income, number of supermarkets, population density, and percent owner occupied housing) using the participants zip code. 1 point was granted to the home residences with zip code at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 4; scores of 0 to 1, 2, and 3 to 4 were categorized as having low, middle, and high environmental-health capital, respectively.

differ in their hours of employment. Most mothers were in dual parent households with White mothers tending to be in dual parent households more than Hispanics in a low acculturation environment. Affluence was moderate for all mothers but was significantly lower for Hispanics in a low acculturation environment than both other groups of mothers. All mothers reported a low risk of food insecurity and had moderate levels of environmental-health capital.

Maternal Intrapersonal Characteristics by Acculturation Environment.

Intrapersonal characteristics studied included weight status, health status, physical activity and screentime, behavior modeling and encouragement of physical activity and media use, sleep time and quality, dietary intake, eating behaviors, feeding practices, outcome expectations for healthy behaviors, self-efficacy for promoting healthy behaviors, and psychographics. Data for intrapersonal characteristics are reported in Table 25. White mothers and Hispanic mothers in a high acculturation environment differed on one measurement.

Maternal Weight Status. No significant differences were found for BMI among groups. All mothers who reported height and weight provided biologically plausible data. This included 131 White, 11 Hispanics living in a high acculturation environment, and 38 Hispanics in a low acculturation environment. Mothers in all groups were overweight, with Hispanics living in a low acculturation environment reaching the threshold to be considered obese.

Maternal Health Status. No significant differences were found for Health-Related Quality of Life[110,123] or depression severity scores among groups. All mothers reported

Table 25: Maternal Intrapersonal Characteristics by Acculturation Environment (N=489)

| Characteristic | White (n=340) | Hispanic Acculturation Environment | | ANOVA* |
| | | High[1] (n=21) | Low[1] (n=128) | p |
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Maternal Weight Status[2]	27.84±6.63	25.29±4.92	30.45±8.04	0.059
Maternal Health Status				
Depression Severity[3]	1.55±0.75	1.74±0.78	1.75±0.66	0.026
Health-Related Quality of Life[4]	3.69±5.47	4.25±7.90	4.35±5.33	0.500
Maternal Physical Activity, Screentime				
Maternal Physical Activity Level[5]	14.74±9.84	10.19±6.95	12.73±8.46	0.020
Maternal Screentime (minutes/day)	329.47±260.98	408.57±308.97	411.80±329.26	0.013
Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use				
Value Placed on Physical Activity for Self[3]	3.01±1.14	2.74±1.10	2.71±1.09	0.029
Value Placed on Physical Activity for Child[3]	3.88±0.87	3.71±0.97	3.41±0.86	0.000[B]
Encouragement and Facilitation of Physical Activity[3]	4.16±0.66	4.06±0.78	3.81±0.62	0.000[B]
Importance of Modeling Physical Activity[3]	4.00±0.79	3.79±0.89	3.68±0.83	0.001[B]
Importance of Not Modeling Sedentary Behavior[3]	3.84±0.94	3.76±0.89	3.68±0.96	0.268
Mother and Child Co-Physical Activity Frequency days/week	3.83±1.83	3.57±1.66	3.09±1.82	0.000[B]
Modeling Physical Activity days/week	2.61±1.68	2.45±1.54	2.34±1.60	0.268
Modeling Sedentary Behavior days/week	3.42±2.29	4.38±2.09	3.97±2.18	0.018
Maternal Sleep Time and Quality				
Sleep Time (hours/day)	7.13±1.18	7.01±1.18	7.02±1.32	0.646
Sleep Quality[3]	3.19±0.94	3.19±0.87	3.09±0.82	0.551
Maternal Dietary Intake				
Fruit and Vegetable (servings/day)	4.54±1.84	4.17±1.92	4.32±1.77	0.373
Dietary Fiber (grams/day)	18.25±6.32	18.00±6.50	19.19±6.10	0.330
Sugar-Sweetened Beverages (servings/day)	0.69±0.86	0.54±0.55	0.89±0.80	0.040
Maternal Eating Behaviors				
Disinhibited Eating[6]	2.06±0.78	2.33±0.85	2.04±0.75	0.274
Emotional Eating[6]	2.24±0.94	2.41±1.08	2.21±0.87	0.640
Dietary Restraint[6]	2.44±0.70	2.41±0.71	2.42±0.69	0.925
Food Adventurousness[6]	3.21±0.68	2.95±0.84	3.04±0.76	0.027

Table 25 continued: Maternal Intrapersonal Characteristics by Acculturation Environment (N=489)

Characteristic	White (n=340)	Hispanic Acculturation Environment High[1] (n=21)	Low[1] (n=128)	ANOVA* p
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Maternal Feeding Practices				
Healthy Eating Modeling[3]	3.69±0.77	3.43±0.75	3.47±0.77	0.012
Use of Food Rewards During Meals[3]	2.34±0.73	2.63±0.87	2.35±0.76	0.214
Use of Non-Food Rewards During Meals[3]	2.76±0.96	2.95±0.89	2.75±0.90	0.656
Overt Control of Intake[3]	3.05±0.80	3.56±0.66	3.13±0.71	0.010[A]
Covert Control of Intake[3]	3.68±1.25	3.67±1.20	3.36±1.32	0.048
Pressures Child to Eat[3]	2.20±0.95	2.49±1.02	2.51±0.89	0.003[B]
Restricts Child Food Choices[3]	3.72±0.93	3.88±0.77	3.91±0.78	0.108
Maternal Outcome Expectations for Healthy Behaviors				
Healthy Eating[3]	4.57±0.54	4.68±0.42	4.60±0.50	0.587
Physical Activity[3]	4.45±0.60	4.54±0.48	4.52±0.53	0.368
Maternal Self-Efficacy for Promoting Healthy Behaviors				
Obesity Protective Behaviors in Children[6]	3.79±0.68	3.53±0.74	3.57±0.65	0.004[B]
Child Eating and Weight Management[6]	3.86±0.69	3.69±0.82	3.60±0.68	0.002[B]
Child Physical Activity[6]	3.57±1.01	3.14±0.88	3.45±0.98	0.102
Parent Health Behaviors[6]	3.36±0.88	3.08±0.91	3.21±0.86	0.119
Maternal Psychographic Characteristics				
Personal Organization[3]	3.69±0.74	3.52±0.70	3.55±0.76	0.154
Need for Cognition[3]	3.48±0.95	3.43±0.98	3.14±0.90	0.003[B]
Confidence in Parenting Skills[3]	3.94±0.88	3.86±0.73	3.76±0.94	0.145
Perceived Stress[6]	3.43±0.75	3.48±0.78	3.30±0.73	0.235
Self-Efficacy of Stress Management[6]	2.89±0.89	2.79±0.97	2.74±0.79	0.246

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic environmental acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high environmental acculturation Hispanics.

[B] Whites and low environmental acculturation Hispanics.

[C] High environmental acculturation Hispanics and low environmental acculturation Hispanics.

[1] Acculturation environment uses three geocoded variables (i.e., % foreign-born, % foreign-born arriving within the years 2010-2015, % Spanish-speaking households speaking English less than very well). 1 point was granted to the home residences with zip codes at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] White (n=131), and high and low environmental acculturation Hispanics (n=11 and n=38, respectively) who provided anthropometric data.

[3] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[4] Possible range 0 to 30; higher scores indicate poorer health-related quality of life.

[5] Possible score range = 0 to 42; higher scores indicate more physical activity.

[6] Possible score range = 1 to 4; higher scores indicate greater expression of the characteristic measured.

few days of poor mental and physical health.[110,123] Mothers also reported a low depression severity.

Maternal Physical Activity, Screentime. All mothers had low physical activity scores and did not differ from each other. Screentime for all mothers was much higher than the 1- to 2-hour limit recommended daily. No differences were found for minutes of screentime daily among groups of mothers.

Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use. White mothers scored significantly higher on most modeling and encouragement of physical activity and media use scales (i.e., value of physical activity for child, encouragement and facilitation of child's physical activity, importance of modeling physical activity, and mother and child co-physical activity) than Hispanics in a low acculturation environment. Hispanics in a high and low acculturation environment did not differ on any measure.

Maternal Sleep Time and Quality. White and Hispanic mothers barely met sleep recommendations of 7 to 9 hours nightly, regardless of Hispanic acculturation environment.[305] All mothers reported moderate sleep quality.

Maternal Dietary Intake. Mothers did not meet the recommendations for intake of fruits and vegetables (5 per day) and fiber (25 grams per day) daily.[306] Overall, mothers had low intake of sugar-sweetened beverages. Intake of fruits and vegetables, and dietary fiber did not significantly differ among the three groups.

Maternal Eating Behaviors. Overall, Disinhibited Eating, Emotional Eating, and Dietary Restraint scores were low, and Food Adventurousness scores were moderate. White and Hispanic mothers did not significantly differ on any of these measures.

Maternal Feeding Practices. Mothers tended to be similar in their feeding practices, regardless of the acculturation environment of Hispanic mothers. Overall, mothers tended to model healthy eating, and tended to use restriction to control children's food choices as well as overt and covert control of children's intake but tended not to use rewards during meals. However, White mothers were less likely to use overt control of child intake than Hispanic mothers in a high acculturation environment, and less likely to pressure their child to eat than Hispanic mothers in a low acculturation environment. High and low acculturation Hispanic mothers did not differ on any measure.

Maternal Outcome Expectations for Healthy Behaviors. Mothers had high outcome expectations for both healthy eating and physical activity. No significant differences were found in outcome expectations for healthy eating or physical activity among the three groups of mothers

Maternal Self-Efficacy for Promoting Healthy Behaviors. Mothers had moderate-high self-efficacy for promoting all healthy behaviors. White mothers had greater self-efficacy for performing obesity protective behaviors in children and for child eating and weight management than Hispanic mothers in a low acculturation environment. Mothers did not differ in their self-efficacy for promoting child physical activity or for parent health behaviors.

Maternal Psychographic Characteristics. Mothers had moderate-high personal organization and confidence in their parenting skills. Mothers reported moderate perceived stress, but low self-efficacy for stress management. Only one psychographic characteristic, need for cognition, showed significant difference among the groups—

White mothers had a higher need for cognition than Hispanics living in a low acculturation environment.

Child Intrapersonal Characteristics by Acculturation Environment. Mean child age was 4 to 5 years. Sex was nearly evenly distributed (52% boys). Child intrapersonal characteristics that were studied included health status, physical activity and sedentary behaviors, beverage intake, eating styles, and sleep time and quality. Data for the intrapersonal characteristics of the child are shown in Table 26. White mothers and Hispanic mothers in a high acculturation environment differed on one measurement.

Child Health Status. White mothers reported that their children had significantly better health status than Hispanic mothers in a low acculturation environment. Child Quality of Life scores[110,123] were similar across groups with mothers reporting that their children had few days of poor mental or physical health monthly.

Child Physical Activity and Sedentary Behaviors. All mothers reported that their children had low physical activity scores, with no differences among groups. Also, all mothers reported that their children exceeded the recommendations for screentime (<1 hour daily of high quality programming for children older than 2 years),[307] with low acculturation children getting one hour more than children in both other groups.

Child Beverage Intake. Children infrequently drank sugar-sweetened beverages, milk, and fruit and vegetable juice. Children of low environment acculturation mothers consumed more fruit and vegetable juice than children of mothers in both other groups.

Child Eating Styles. Child food neophobia, and self-regulation scores were moderate whereas child emotional eating scores were low. Groups did not differ significantly on any of these measures.

Table 26: Child Intrapersonal Characteristics by Acculturation Environment (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	High[1] (n=21) Mean±SD or N (%)	Low[1] (n=128) Mean±SD or N (%)	ANOVA* p
Child Age	4.53±1.63	5.39±1.62	4.49±1.71	0.058
Child Sex				0.657
Male	178 (52.35%)	13 (61.90%)	70 (54.69%)	
Female	162 (47.65%)	8 (38.10%)	58 (45.31%)	
Child Health Status				
Child Health Status[2]	4.51±0.72	4.19±0.93	4.14±0.86	0.000[B]
Child Quality of Life[3]	1.98±3.21	1.07±0.97	2.09±3.79	0.423
Child Physical Activity and Sedentary Behaviors				
Child Physical Activity Level[4]	26.50±11.58	26.38±10.24	24.84±11.17	0.372
Child Screentime, minutes/day	283.24±269.85	307.14±205.59	342.54±287.24	0.110
Child Beverage Intake				
Sugar-Sweetened Beverages (servings/day)	0.28±0.45	0.29±0.31	0.41±0.47	0.028
Milk (servings/day)	0.84±0.36	0.78±0.43	0.76±0.37	0.108
100% Fruit Juice (servings/day)	0.53±0.39	0.54±0.41	0.69±0.36	0.001[B]
Vegetable Juice (servings/day)	0.10±0.24	0.10±0.18	0.27±0.37	0.000[BC]
Child Eating Styles				
Food Neophobia[2]	3.09±1.05	3.02±1.06	3.16±0.96	0.733
Emotional Eating[2]	1.84±0.84	2.05±0.79	1.92±0.85	0.369
Self-Regulation[2]	3.34±0.99	3.00±1.00	3.32±0.94	0.293
Child Sleep Time and Quality				
Sleep Time (hours/day)	9.70±1.07	9.57±0.81	9.34±1.00	0.007[B]
Child Met Sleep Recommendations[5]	92 (27.06%)	1 (4.76%)	22 (17.19%)	0.009[A]
Sleep Quality[5]	4.28±0.77	4.38±0.59	4.19±0.76	0.382

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic environmental acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high environmental acculturation Hispanics.

[B] Whites and low environmental acculturation Hispanics.

[C] High environmental acculturation Hispanics and low environmental acculturation Hispanics.

[1] Acculturation environment uses three geocoded variables (i.e., % foreign-born, % foreign-born arriving within the years 2010-2015, % Spanish-speaking households speaking English less than very well). 1 point was granted to the home residences with zip codes at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[3] Possible score range = 0 to 30; higher scores indicate poorer health-related quality of life.

[4] Possible score range = 0 to 42; higher scores indicate more physical activity.

[5] Possible score range = 0 to 1; children were categorized as meeting sleep recommendations set forth by the National Sleep Foundation[305] if they had 11-14, 10-13, or 9-11 hours of sleep based on age categories (2, 3-5, and 6-9 years of age); scores of 0 and 1 were categorized as either not meeting or meeting recommendations for age, respectively.

Child Sleep Time and Quality. Only 24% of children met sleep-for-age recommendations, however, more children of White mothers met sleep-for-age recommendations than children of Hispanic mothers in a high acculturation environment (27%, 17%, respectively).[305] However, children of White mothers slept significantly more hours daily than the children of Hispanics living in a low acculturation environment. All groups reported that their children had high sleep quality.

Interpersonal Characteristics of Mothers and their Young Children by Acculturation Environment. Interpersonal characteristics studied included family meal cognitions, family meal behaviors, and family and household interactions and organization. Data for the interpersonal characteristics are shown in Table 27.

Family Meal Cognitions. Mothers across all three groups reported similar family meal cognitions. Mothers agreed about the importance of family meals and felt that their family mealtime atmosphere was positive. Regarding meal preparation, mothers agreed that they planned for meals ahead of time and put effort into preparing meals. Regarding meal preparation skills, mothers agreed that they had the time and energy required for meal preparation and had high self-efficacy for their ability to prepare healthy meals.

Family Meal Behaviors. All mothers reported that they shared at least 1 meal daily with their family. Overall, Hispanics in a low acculturation environment had meals more frequently in unhealthy locations (i.e., in the car, at a fast food restaurant, in front of the TV), used media devices more frequently during meals, and had fewer meals in healthy locations (i.e., dining room) than Whites. Between acculturation groups, Hispanics in a low acculturation environment had more meals in the car and fewer meals at the dining room table weekly than Hispanics in a high acculturation environment. White mothers

Table 27: Interpersonal Characteristics by Acculturation Environment (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Acculturation Environment		ANOVA* p
		High[1] (n=21) Mean±SD or N (%)	Low[1] (n=128) Mean±SD or N (%)	
Family Meal Cognitions				
Importance Placed on Family Meals[2]	4.48±0.63	4.73±0.33	4.39±0.71	0.058
Family Meal Atmosphere[2]	4.02±0.90	4.19±0.70	4.07±0.78	0.601
Family Meal Planning[2]	3.39±1.05	3.33±1.10	3.38±0.98	0.975
Effort of Cooking[2]	3.50±0.92	3.33±0.93	3.63±0.82	0.247
Time and Energy for Family Meals[2]	4.07±0.96	3.93±0.94	4.08±0.91	0.788
Meal Preparation Self-Efficacy[2]	4.00±0.90	3.88±0.86	3.82±0.89	0.137
Family Meal Behaviors				
Family Meal Frequency/Week	12.88±4.59	13.10±4.31	11.65±5.10	0.038
Meal Environment Frequency/Week				
Unhealthy Meal Location	2.97±3.41	3.29±3.42	5.63±4.49	0.000[BC]
In the Car	0.36±1.02	0.38±1.53	1.28±2.22	0.000[BC]
At Fast Food Restaurant	0.70±1.08	0.81±0.81	1.39±1.51	0.000[B]
In Front of TV	1.90±2.38	2.10±2.49	2.96±2.50	0.000[B]
At Dining Room Table	5.08±2.29	5.90±1.48	3.75±2.68	0.000[BC]
Media Use During Meals Frequency/Week				
Media Use (TV)	3.20±2.68	3.67±2.83	3.83±2.54	0.068
Media Use (Tablet, Video Games, etc.)	1.37±2.22	1.76±2.34	2.32±2.71	0.001[B]
Household Interactions and Organization				
Family Support for Healthy Eating[2]	3.57±1.35	3.12±1.39	3.58±1.37	0.326
Family Support for Physical Activity[2]	3.75±1.37	3.36±1.30	3.71±1.36	0.443
Family Cohesion[2]	4.04±0.76	3.91±0.89	3.93±0.68	0.310
Household Organization[2]	3.41±1.07	3.60±1.22	3.61±1.09	0.191

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic environmental acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high environmental acculturation Hispanics.

[B] Whites and low environmental acculturation Hispanics.

[C] High environmental acculturation Hispanics and low environmental acculturation Hispanics.

[1] Acculturation environment uses three geocoded variables (i.e., % foreign-born, % foreign-born arriving within the years 2010-2015, % Spanish-speaking households speaking English less than very well). 1 point was granted to the home residences with zip codes at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

and Hispanic mothers in a high acculturation environment did not differ on any measurement.

Family and Household Interactions and Organization. Overall, mothers reported fairly good support from their families for healthy eating and physical activity. Mothers also reported that they had moderate-high family cohesion. Mothers reported that they had moderate-high household organization.

Home Environment Characteristics of Mothers and their Young Children by Acculturation Environment. Characteristics of the home environment studied included the Home Opportunities for Physical Activity Check-UP, sedentary screentime environment, household food availability, household food accessibility, and supermarket accessibility. Data for the home environment characteristics are shown in Table 28. White mothers and Hispanic mothers in a high acculturation environment did not differ on any measurement.

Home Opportunities for Physical Activity Check-UP (HOP-UP). Overall, Hispanic mothers in a low acculturation environment tended to live in environments that did not support physical activity compared to both other groups of mothers. For example, Hispanics in a low acculturation environment had fewer indoor/home, outdoor/yard, and neighborhood space and support for physical activity, and also perceived their neighborhood to be less safe than Whites. Hispanics in a low acculturation environment also had fewer outdoor/yard space and supports and perceived their neighborhoods to be less safe than Hispanics living in a high acculturation environment. All mothers had a low (<3 days/week) frequency of active outdoor play weekly.

Table 28: Environmental Characteristics by Acculturation Environment (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Acculturation Environment High[1] (n=21) Mean±SD or N (%)	Low[1] (n=128) Mean±SD or N (%)	ANOVA* p
Home Opportunities for Physical Activity (PA) Check-UP				
Indoor/Home Space and Supports for Physical Activity[2]	3.39±0.80	3.37±1.06	3.07±0.91	0.001[B]
Outdoor/Yard Space and Supports for Physical Activity[2]	4.45±0.59	4.65±0.42	4.12±0.84	0.000[BC]
Neighborhood Space and Supports for Physical Activity[2]	4.12±0.99	4.11±0.93	3.71±1.03	0.000[B]
Neighborhood Environment Safety[2]	3.50±0.85	3.67±0.76	3.09±0.85	0.000[BC]
Frequency of Active Outdoor Play	2.62±0.98	2.45±0.82	2.43±0.89	0.156
Sedentary Screentime Environment				
Media Equipment Availability in the Home	11.08±4.77	11.86±5.89	10.59±4.62	0.432
Media Equipment Availability in the Child's Bedroom	1.22±1.62	2.05±2.13	1.84±1.60	0.000[B]
Media Equipment Accessibility[2]	2.37±1.18	2.90±1.30	2.71±1.11	0.004[B]
Minutes of Screentime Child Allowed per Day	426.40±663.70	455.00±633.41	600.94±802.62	0.057
Minutes of Time the TV is on Daily with No One Watching	124.28±209.21	87.86±75.04	142.62±214.62	0.464
Household Food Availability				
Fruit/Vegetables (servings/person/day)	6.03±2.03	5.91±2.62	5.71±2.14	0.332
Sugar-Sweetened Beverages (servings/person/day)	0.22±0.26	0.22±0.25	0.27±0.23	0.177
High Energy/Low Nutrient Snacks (servings/person/day)	1.90±1.75	1.99±2.07	2.20±1.88	0.274
Household Food Accessibility				
Child Access to Nutrient Poor Foods[3]	0.91±1.43	1.10±1.37	1.07±1.61	0.537
Child Access to Nutrient Dense Foods[4]	2.57±1.72	2.43±1.50	2.27±1.81	0.248
Child Food Access Policy to Nutrient Poor Foods[3]	0.61±1.17	0.62±0.97	1.02±1.51	0.007[B]
Child Food Access Policy to Nutrient Dense Foods[4]	1.50±1.65	1.38±1.24	1.98±1.78	0.020
Supermarket Accessibility[1]	4.09±1.05	4.05±1.20	3.77±1.16	0.018

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic environmental acculturation groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and high environmental acculturation Hispanics.

[B] Whites and low environmental acculturation Hispanics.

[C] High environmental acculturation Hispanics and low environmental acculturation Hispanics.

[1] Acculturation environment uses three geocoded variables (i.e., % foreign-born, % foreign-born arriving within the years 2010-2015, % Spanish-speaking households speaking English less than very well). 1 point was granted to the home residences with zip codes at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 3; scores of 0, and 1-3 were scored as having high and low acculturation, respectively.

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

[3] Possible score range = 0 to 6; higher scores indicate greater expression of the characteristic measured.

[4] Possible score range = 0 to 5; higher scores indicate greater expression of the characteristic measured.

Sedentary Screentime Environment. Overall, mothers reported that their homes were replete with media devices. Hispanics in a low acculturation environment tended to live in environments that facilitated screentime (i.e., media equipment in child's bedroom, media equipment accessibility) more than Whites.

Household Food Availability. All mothers reported that they had adequate (at least 5 servings/person/day) availability of fruits/vegetables in their homes, moderate (2 servings/person/day) availability of high energy/low nutrient snacks, and low availability (less than 1 serving/person/day) of sugar-sweetened beverages. Mothers in the three groups did not differ in their household food availability.

Household Food Accessibility. There were no significant differences in child access to nutrient poor or nutrient dense foods between Whites and Hispanics grouped by acculturation environment. However, White mothers had policies in place that allowed children to access more nutrient poor foods independently than Hispanics in a low acculturation environment. Mothers did not differ in their policies regarding their children's independent access to nutrient dense foods.

Supermarket Accessibility. All mothers reported that supermarkets were easily accessible to them. No significant differences were found in accessibility to supermarkets.

Summary of Acculturation Environment Results

Most significant differences occurred between Whites and Hispanics living in a low acculturation environment. For intrapersonal characteristics, most of the differences occurred in maternal encouragement of physical activity and self-efficacy for promoting healthy behaviors, with White mothers tending to score higher than Hispanic mothers

living in a low acculturation environment. No differences occurred on intrapersonal

measures between acculturation groups.

For intrapersonal characteristics of the child, few differences were noted, with

White mothers tending to score their children's health status higher than Hispanics in a

low acculturation environment. Additionally, children of Hispanics in a low acculturation

environment tended to consume more fruit juice than children of White mothers. Only

one difference was noted between acculturation groups for characteristics of the child—

that of child vegetable juice intake, with low acculturation Hispanics consuming more

than other groups.

For interpersonal characteristics, most differences occurred in family meal

behaviors, with White mothers having fewer meals in unhealthy locations (i.e., in front of

the TV) than Hispanics in a low acculturation environment. The only differences noted

between acculturation groups were that Hispanics in a low acculturation environment had

fewer family meals at the dining room table and more family meals in the car than

Hispanics in a high acculturation environment and White mothers.

Finally, the only differences noted in the home environment occurred in the

physical activity and screentime environments, and household food access policies.

Hispanics in a low acculturation environment had fewer indoor/home, outdoor/yard, and

neighborhood space and supports and had more media equipment available in the

bedroom and greater media equipment accessibility than Whites. Additionally, Hispanics

in low acculturation environments had policies in place that allowed their children to

access more nutrient poor foods than Whites. The only differences between acculturation

groups were for neighborhood environment safety and outdoor/yard space and support

for physical activity, with Hispanics living in a low acculturation environment scoring lower than White and Hispanic mothers living in a high acculturation environment.

HOME ENVIRONMENTS OF MOTHERS AND THEIR YOUNG CHILDREN BY ACCULTURATION CLUSTERS

To address Research Question "3. *How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers* clustered by their combined acculturation measures?*",* White mothers were compared to Hispanic mothers who were grouped using Ward's hierarchical cluster analysis procedures using the clusters using the 3 personal and 3 environmental acculturation items from Research Question 2. The goal of this research question was to further explore how both acculturation types in combination were linked to the home environments of mothers and their young children.

Hispanic Mothers and Acculturation Clusters

Ward's cluster analysis was conducted using the 6 acculturation variables (i.e., 3 personal acculturation and 3 acculturation environment items) from Research Question 2 to create acculturation groups. Cluster analysis is used to merge similar groups together so that the clusters maximize within-group homogeneity and between-group heterogeneity.[299] To determine the ideal number of clusters, the agglomeration schedule and the dendrogram were examined.[299] The agglomeration schedule is used to determine the point at which the difference between the distance coefficients increases dramatically, referred to as the "elbow" in the scree plot.[299] From the agglomeration schedule, the elbow was identified to be stage 146. To determine the ideal number of clusters to be

used, the stage at the elbow (146) was subtracted from the sample size (149), thereby indicating that three was the ideal number of clusters.[299] The dendrogram was used to confirm the number of clusters visually.[299] A three cluster analysis was then conducted using Ward's clustering to create acculturation groups.

A summary of the cluster groups is shown in Table 29. ANOVA with Tukey post-hoc tests revealed that the total acculturation scores differed significantly for all pairwise comparisons of clusters, indicating that each cluster uniquely represents a different clustering of the acculturation variables. Cluster 1 mothers were the least acculturated, Cluster 2 where somewhat acculturated, and Cluster 3 mothers were the most acculturated.

Mothers in the least acculturated cluster (Cluster 1) had a total acculturation score of 4.3 on a 6-point scale. An examination of the three personal acculturation variables indicated that most Cluster 1 mothers completed the survey in Spanish, spoke Spanish at home, and were born outside the U.S. Most Cluster 1 mothers also lived in areas where the percent of foreign-born, percent of foreign-born arriving with 2010-2015, and percent of households speaking English less than very well was at or above the median.

Somewhat acculturated mothers (Cluster 2) scored near, but below, the mid-point on the 6-point acculturation scale (i.e., 2.51). Cluster 2 was similar to the least acculturated cluster with regard to environmental acculturation in that the majority lived in areas where the percent of foreign-born, percent of foreign-born arriving with 2010-2015, and percent of households speaking English less than very well was at or above the median. Cluster 2 mothers, however, differed from the least acculturated cluster on

Table 29: Hispanics Clustered by Acculturation Score (n=149)

Characteristic	Cluster 1[1] (n=46)	Cluster 2[1] (n=65)	Cluster 3[1] (n=38)	ANOVA* p
Total Acculturation Score[2]	4.30±1.31	2.51±0.56	0.63±0.63	0.000[ABC]
Personal Acculturation Score[3]	2.28±0.86	0.12±0.33	0.00±0.00	0.000[AB]
Environmental Acculturation Score[4]	2.02±0.95	2.38±0.58	0.63±0.63	0.000[ABC]
Language of Survey				0.000[AB]
English	19 (41.30%)	65 (100.00%)	38 (100.00%)	
Spanish	27 (58.70%)	0 (0.00%)	0 (0.00%)	
Language used in Home				0.000[AB]
English	3 (6.52%)	63 (96.92%)	38 (100.00%)	
Spanish	43 (93.48%)	2 (3.08%)	0 (0.00%)	
Country of Birth				0.000[AB]
U.S.	11 (23.91%)	59 (90.77%)	38 (100.00%)	
Outside of U.S.	35 (76.09%)	6 (9.23%)	0 (0.00%)	
% Foreign-Born				0.000[ABC]
Below Median	13 (28.26%)	0 (0.00%)	38 (100.00%)	
At or Above Median	33 (71.74%)	65 (100.00%)	0 (0.00%)	
% Foreign-Born Arriving Within 2010-2015				0.089
Below Median	22 (47.83%)	31 (47.69%)	26 (68.42%)	
At or Above Median	24 (52.17%)	34 (52.31%)	12 (31.58%)	
% Spanish-Speaking Households Speaking English Less than Very Well				0.000[BC]
Below Median	10 (21.74%)	9 (13.85%)	26 (68.42%)	
At or Above Median	36 (78.26%)	56 (86.15%)	12 (31.58%)	

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic Cluster groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Cluster 1 and Cluster 2.

[B] Cluster 1 and Cluster 3.

[C] Cluster 2 and Cluster 3.

[1] Ward's Hierarchical Cluster Analysis was used to assign Hispanics to clusters based on acculturation (i.e., 3 personal measures [language of survey, language used in home, country of birth] and 3 environmental measures based on census tract [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]).

[2] Possible score range = 0-6; higher scores indicate lower total acculturation level.

[3] Possible score range = 0-3; higher scores indicate lower personal acculturation level.

[4] Possible score range = 0-3; higher scores indicate lower acculturation environment level.

personal acculturation measures in that all or nearly all completed the survey in English, spoke English at home, and were born in the U.S.

The most acculturated cluster (Cluster 3), achieve an acculturation score of less than one on the 6-point acculturation measure. With regard to environmental acculturation, Cluster 3 was the opposite of Clusters 1 and 2 in that the majority lived in areas where percent of foreign-born, percent of foreign-born arriving with 2010-2015, and percent of households speaking English less than very well was below the median. Cluster 3 was similar to the somewhat acculturated mothers in Cluster 2 with regard to personal acculturation in that all mothers completed the survey in English, spoke English in their home and were born in the U.S.

In summary, mothers clustered had either predominately low personal and low environmental acculturation (Cluster 1 [n=46]), high personal and low environmental acculturation (Cluster 2 [n=65]), or high personal and high environmental acculturation (Cluster 3 [n=38]).

Demographic Characteristics by Acculturation Clusters. Demographic characteristics for White, and Hispanics Clusters are shown in Table 30. Some demographic differences were found between Whites and Hispanics in Clusters 1 and 2, the least and somewhat acculturated clusters. Whites and Hispanics in Cluster 3, the most acculturated cluster, did not differ on any demographic characteristic assessed. In general, all mothers reported a similar age. Mothers reported moderate family affluence, moderate environmental health capital, and low food insecurity risk. Mothers did not differ in their reported food insecurity risk or environmental health capital. However, White mothers had a higher socioeconomic status (i.e., higher education level, greater family affluence score)

Table 30: Demographic Characteristics by Hispanics Clustered by Acculturation (N=489)

Characteristic	White (n=340)	Hispanic Clusters Cluster 1[1] (n=46)	Cluster 2[1] (n=65)	Cluster 3[1] (n=38)	ANOVA* p
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	
Age	33.33±5.44	31.13±6.07	30.26±5.18	31.05±5.64	0.000[B]
Maternal Education[2]	2.39±0.71	1.98±0.71	2.11±0.73	2.45±0.55	0.000[ABE]
Maternal Hours of Employment[3]					0.002[ADE]
Does not work	121 (35.59%)	28 (60.87%)	23 (35.38%)	13 (34.21%)	
Part-time (less than 30 hours/week)	62 (18.24%)	8 (17.39%)	5 (7.69%)	4 (10.53%)	
Near Full-time/Full-time (30 or more hours/week)	157 (46.18%)	10 (21.74%)	37 (56.92%)	21 (55.26%)	
Marital Status[4]					0.002[B]
Single Parents	47 (13.82%)	8 (17.39%)	21 (32.31%)	10 (26.32%)	
Dual Parents	293 (86.18%)	38 (82.61%)	44 (67.69%)	28 (73.68%)	
Family Affluence Score[5]	5.59±1.73	4.57±1.66	4.98±1.88	5.76±1.70	0.000[ABE]
Food Insecurity Risk[6]	1.72±0.95	1.89±0.88	1.85±0.94	1.97±0.94	0.287
Environmental Health Capital[7]	2.28±0.72	2.11±0.57	2.12±0.48	2.45±0.60	0.044

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic Cluster groups.

Tukey post-hoc tests indicate significant (p<0.05) between group differences of:

[A] Whites and Cluster 1.

[B] Whites and Cluster 2.

[C] Whites and Cluster 3.

[D] Cluster 1 and Cluster 2.

[E] Cluster 1 and Cluster 3.

[F] Cluster 2 and Cluster 3.

[1] Ward's Hierarchical Cluster Analysis was used to assign Hispanics to clusters based on acculturation (i.e., 3 personal measures [language of survey, language used in home, country of birth] and 3 environmental measures based on census tract [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]).

[2] Possible score range = 1 to 3; higher scores indicate higher education level.

[3] Possible score range = 1 to 3 for ANOVA; scores of 1, 2, 3 were categorized as does not work, works part-time, and works full-time, respectively.

[4] Possible score range = 1 to 2 for ANOVA; scores of 1, 2 were categorized as single parent and dual parent household, respectively.

[5] Family Affluence Scale contains 4-items; scores range from 0 to 9; scores of 0 to 3, 4 to 6, and 7 to 9 were categorized as having low, middle, and high family affluence, respectively.

[6] Possible score range = 1 to 4; higher scores indicate greater food insecurity risk.

[7] Environmental Health Capital uses four geocoded variables (i.e., average community income, number of supermarkets, population density, and percent owner occupied housing) using the participants zip code. 1 point was granted to the home residences with zip code at or above the median threshold for the participants' state (NJ or AZ) of residence or 0 points if the value was below the median threshold. Variable scores were summed with a possible score range of 0 to 4; scores of 0 to 1, 2, and 3 to 4 were categorized as having low, middle, and high environmental-health capital, respectively.

compared to Hispanics in Clusters 1 and 2. Few demographic differences were seen among the Hispanic clusters, however, Hispanics in Cluster 3 tended to have a higher socioeconomic status (i.e., higher education level, and higher family affluence scores) than those in Cluster 1, the least acculturated cluster.

Maternal Intrapersonal Characteristics by Acculturation Clusters. Maternal intrapersonal characteristics data are reported in Table 31. Whites and Cluster 3, the most acculturated cluster, differed only on one measure. Most differences were seen between Whites and Cluster 1, the least acculturated cluster. Few differences were seen among the Hispanic cluster groups.

Maternal Weight Status. Whites and Hispanic Clusters 1 and 3 were overweight, whereas Hispanic Cluster 2 reached the threshold to be considered obese. Mothers did not significantly differ in their BMI.

Maternal Health Status. No significant differences were found for Health-Related Quality of Life[110,123] or depression severity scores among the four groups. All mothers reported few days of poor mental and physical health.[110,123] Mothers also reported a low depression severity.

Maternal Physical Activity, Screentime. All mothers had low physical activity scores and did not differ from each other. Mothers reported that they spent over 5 hours in screentime daily and did not differ from each other.

Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use. Hispanic Clusters 1 and 2, the least and somewhat acculturated clusters of Hispanics, scored lower on nearly all of the modeling and encouragement of physical activity and media use scales (i.e., value placed on physical activity for the child, encouragement and

Table 31: Maternal Intrapersonal Characteristics by Hispanics Clustered by Acculturation (N=489)

Characteristic	White (n=340)	Hispanic Clusters Cluster 1[1] (n=46)	Cluster 2[1] (n=65)	Cluster 3[1] (n=38)	ANOVA* p	ANCOVA** p
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)		
Maternal Weight Status[2]	27.84±6.63	28.89±6.09	31.74±9.09	27.46±6.29	0.086	0.186
Maternal Health Status						
Depression Severity[3]	1.55±0.75	1.72±0.62	1.74±0.67	1.79±0.77	0.058	0.113
Health-Related Quality of Life[4]	3.69±5.47	4.57±5.84	4.31±5.07	4.10±6.72	0.676	0.908
Maternal Physical Activity, Screentime						
Maternal Physical Activity Level[5]	14.74±9.84	11.91±8.67	13.14±8.45	11.63±7.63	0.064	0.069
Maternal Screentime (minutes/day)	329.47±260.98	362.94±229.95	422.08±337.77	451.58±396.60	0.013	0.017
Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use						
Value Placed on Physical Activity for Self[3]	3.01±1.14	2.79±0.98	2.72±1.15	2.62±1.14	0.056	0.060
Value Placed on Physical Activity for Child[3]	3.88±0.87	3.25±0.86	3.46±0.93	3.67±0.76	0.000[AB]	0.000[AB]
Encouragement and Facilitation of Physical Activity[3]	4.16±0.66	3.77±0.66	3.88±0.60	3.87±0.72	0.000[AB]	0.000[AB]
Importance of Modeling Physical Activity[3]	4.00±0.79	3.66±0.80	3.69±0.88	3.75±0.83	0.003[AB]	0.008
Importance of Not Modeling Sedentary Behavior[3]	3.84±0.94	3.70±1.07	3.72±0.82	3.63±1.00	0.436	0.562
Mother and Child Co-Physical Activity Frequency days/week	3.83±1.83	2.82±1.61	3.31±1.94	3.30±1.75	0.001[A]	0.001[A]
Modeling Physical Activity days/week	2.61±1.68	2.07±1.49	2.49±1.56	2.46±1.75	0.207	0.173
Modeling Sedentary Behavior days/week	3.42±2.29	3.68±2.22	4.21±2.16	4.14±2.13	0.029	0.042
Maternal Sleep Time and Quality						
Sleep Time (hours/day)	7.13±1.18	7.38±1.11	6.84±1.41	6.87±1.27	0.078	0.059
Sleep Quality[3]	3.19±0.94	3.37±0.77	2.97±0.75	3.00±0.96	0.078	0.059
Maternal Dietary Intake						
Fruit and Vegetable (servings/day)	4.54±1.84	4.36±1.64	4.41±1.75	4.04±2.02	0.410	0.426
Dietary Fiber (grams/day)	18.25±6.32	19.44±5.61	19.39±6.21	17.87±6.68	0.351	0.352
Sugar-Sweetened Beverages (servings/day)	0.69±0.86	0.73±0.61	0.96±0.81	0.77±0.88	0.125	0.213
Maternal Eating Behaviors						
Disinhibited Eating[6]	2.06±0.78	2.07±0.71	1.97±0.78	2.30±0.78	0.229	0.209
Emotional Eating[6]	2.24±0.94	2.32±0.81	2.06±0.92	2.43±0.97	0.230	0.242
Dietary Restraint[6]	2.44±0.70	2.55±0.73	2.32±0.69	2.43±0.65	0.347	0.300
Food Adventurousness[6]	3.21±0.68	3.03±0.64	3.10±0.80	2.91±0.84	0.034	0.037
Maternal Feeding Practices						
Healthy Eating Modeling[3]	3.69±0.77	3.57±0.71	3.46±0.80	3.35±0.79	0.014	0.022
Use of Food Rewards During Meals[3]	2.34±0.73	2.27±0.68	2.30±0.73	2.68±0.91	0.037	0.041
Use of Non-Food Rewards During Meals[3]	2.76±0.96	2.64±0.83	2.77±0.90	2.97±0.96	0.450	0.356

Table 31 continued: Maternal Intrapersonal Characteristics by Hispanics Clustered by Acculturation (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Clusters Cluster 1[1] (n=46) Mean±SD or N (%)	Cluster 2[1] (n=65) Mean±SD or N (%)	Cluster 3[1] (n=38) Mean±SD or N (%)	ANOVA* p	ANCOVA** p
Maternal Feeding Practices, Continued						
Overt Control of Intake[3]	3.05±0.80	3.30±0.61	3.07±0.69	3.28±0.86	0.072	0.093
Covert Control of Intake[3]	3.68±1.25	2.74±1.41	3.75±1.15	3.61±1.15	0.000[ADE]	0.000[ADE]
Pressures Child to Eat[3]	2.20±0.95	2.50±0.84	2.38±0.86	2.74±1.01	0.002[C]	0.002[C]
Restricts Child Food Choices[3]	3.72±0.93	3.88±0.93	3.91±0.75	3.92±0.62	0.214	0.282
Maternal Outcome Expectations for Healthy Behaviors						
Healthy Eating[3]	4.57±0.54	4.72±0.40	4.61±0.49	4.50±0.56	0.202	0.211
Physical Activity[3]	4.45±0.60	4.68±0.44	4.48±0.54	4.42±0.53	0.061	0.066
Maternal Self-Efficacy for Promoting Healthy Behaviors						
Obesity Protective Behaviors in Children[6]	3.79±0.68	3.50±0.69	3.57±0.66	3.63±0.64	0.008[A]	0.009[A]
Child Eating and Weight Management[6]	3.86±0.69	3.51±0.70	3.65±0.70	3.69±0.71	0.003[A]	0.006[A]
Child Physical Activity[6]	3.57±1.01	3.43±1.09	3.34±0.93	3.46±0.89	0.343	0.303
Parent Health Behaviors[6]	3.36±0.88	3.11±0.94	3.24±0.84	3.19±0.82	0.223	0.213
Maternal Psychographic Characteristics						
Personal Organization[3]	3.69±0.74	3.63±0.81	3.57±0.76	3.40±0.67	0.121	0.107
Need for Cognition[3]	3.48±0.95	3.07±0.95	3.18±0.88	3.31±0.93	0.009[A]	0.014
Confidence in Parenting Skills[3]	3.94±0.88	3.85±0.79	3.72±0.98	3.76±0.94	0.244	0.271
Perceived Stress[6]	3.43±0.75	3.49±0.63	3.21±0.79	3.33±0.76	0.125	0.128
Self-Efficacy of Stress Management[6]	2.89±0.89	2.85±0.80	2.70±0.80	2.70±0.87	0.298	0.349

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic cluster groups.
**ANCOVA indicate significant (p<0.01) main effects among Whites and Hispanic cluster groups while controlling for family affluence score.
Between group differences for ANOVA (using Tukey post-hoc tests) and ANCOVA (using Bonferroni post-hoc tests) indicate significant (p<0.05) between group differences of:
[A] Whites and Cluster 1.
[B] Whites and Cluster 2.
[C] Whites and Cluster 3.
[D] Cluster 1 and Cluster 2.
[E] Cluster 1 and Cluster 3.
[F] Cluster 2 and Cluster 3.
[1] Ward's Hierarchical Cluster Analysis was used to assign Hispanics to clusters based on acculturation (i.e., 3 personal measures [language of survey, language used in home, country of birth] and 3 environmental measures based on census tract [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]).
[2] White (n=131), and high and low composite acculturation Hispanics (n=10 and n=10, respectively) who provided anthropometric data.
[3] Possible score range = 1 to 5; higher scores indicate great expression of the characteristic measured.
[4] Possible range 0 to 30; higher scores indicate poorer health-related quality of life.
[5] Possible score range = 0 to 42; higher scores indicate more physical activity.
[6] Possible score range = 1 to 4; higher scores indicate greater expression of the characteristic measured.

facilitation of physical activity, and importance of modeling physical activity) than White mothers. Additionally, Hispanic Cluster 1, the least acculturated cluster of Hispanics, scored lower than Whites on frequency of mother and child co-physical activity. No significant differences were seen among Hispanic cluster groups on any measure. Further analysis with ANCOVA revealed that, even after controlling for family affluence scores, significant differences persisted between Whites and Cluster 1 and Cluster 2. The only measure where significance no longer occurred was importance of modeling physical activity; however, there was a near significant ($p=0.06$) difference between Whites and Cluster 2 only.

Maternal Sleep Time and Quality. Whites and Hispanic Cluster 1 barely met sleep recommendations of 7 to 9 hours nightly, and Hispanic Clusters 2 and 3 were just shy of meeting recommendations.[305] All mothers reported moderate sleep quality. No significant differences occurred on sleep measures.

Maternal Dietary Intake. Mothers fell below the recommended intake of fruits and vegetables (5 per day) and fiber (25 grams per day) daily.[306] Mothers also reported low intake of sugar-sweetened beverages. Intake of fruits and vegetables, dietary fiber, and sugar-sweetened beverages did not significantly differ among the four groups.

Maternal Eating Behaviors. Mothers reported low scores for Disinhibited Eating, Emotional Eating, and Dietary Restraint and moderate scores for Food Adventurousness. Whites and Hispanic cluster groups did not significantly differ on any of these measures.

Maternal Feeding Practices. All mothers tended to have similar feeding practices. However, Hispanics in Cluster 1, the least acculturated cluster of Hispanics, tended to use less covert control of their children's intake than all other mothers. Additionally,

Hispanic Cluster 3, the most acculturated cluster of Hispanics, were more likely to pressure their children to eat than White mothers. Further analysis with ANCOVA revealed that, even after controlling for family affluence scores, significant differences among the groups remained the same for all measures.

Maternal Outcome Expectations for Healthy Behaviors. No significant differences were found in outcome expectations for healthy eating among the four groups of mothers. The same was true for physical activity outcome expectations.

Maternal Self-Efficacy for Promoting Healthy Behaviors. Mothers had moderate-high self-efficacy for engaging in all healthy behaviors accessed. White mothers had greater self-efficacy for child eating and weight management and promoting obesity protective behaviors in children than Hispanic Cluster 1, the least acculturated cluster of Hispanic mothers. Mothers did not differ in their self-efficacy for promoting child physical activity or for parent health behaviors. Further analysis using ANCOVA revealed that, even after controlling for family affluence scores, significant differences among the groups remained the same for all measures.

Maternal Psychographic Characteristics. Mothers had moderate-high personal organization and confidence in their parenting skills. With regard to stress and stress management, mothers reported moderate perceived stress, but low self-efficacy for their ability to manage their stress. However, need for cognition was significantly different among the groups—White mothers had a higher need for cognition than Cluster 1, the least acculturated cluster of Hispanic mothers.

Child Intrapersonal Characteristics by Acculturation Clusters. Child intrapersonal characteristics are reported in Table 32. Whites and Cluster 3, the high acculturation

Table 32: Child Intrapersonal Characteristics by Hispanics Clustered by Acculturation (N=489)

| Characteristic | White (n=340) | Hispanic Clusters | | | ANOVA* | ANCOVA** |
| | | Cluster 1[1] (n=46) | Cluster 2[1] (n=65) | Cluster 3[1] (n=38) | p | p |
	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)	Mean±SD or N (%)		
Child Age	4.53±1.63	4.17±1.61	4.57±1.75	5.25±1.64	0.025	0.050
Child Sex					0.923	0.918
Male	178 (52.35%)	26 (56.52%)	36 (55.38%)	21 (55.26%)		
Female	162 (47.65%)	20 (43.48%)	29 (44.62%)	17 (44.74%)		
Child Health Status						
Child Health Status[2]	4.51±0.72	4.07±0.90	4.17±0.86	4.21±0.84	0.000[AB]	0.000[AB]
Child Quality of Life[3]	1.98±3.21	1.67±2.53	2.28±4.55	1.72±2.55	0.769	0.742
Child Physical Activity and Sedentary Behaviors						
Child Physical Activity Level[4]	26.50±11.58	23.28±11.78	25.95±11.18	25.66±9.78	0.353	0.337
Child Screentime, minutes/day	283.24±269.85	300.00±176.04	371.08±324.96	325.66±287.13	0.110	0.136
Child Beverage Intake						
Sugar-Sweetened Beverages (servings/day)	0.28±0.45	0.24±0.34	0.47±0.49	0.44±0.45	0.003[BD]	0.003[BD]
Milk (servings/day)	0.84±0.36	0.64±0.46	0.87±0.29	0.74±0.37	0.001[AD]	0.001[AD]
100% Fruit Juice (servings/day)	0.53±0.39	0.83±0.34	0.64±0.34	0.52±0.38	0.000[AE]	0.000[AE]
Vegetable Juice (servings/day)	0.10±0.24	0.43±0.43	0.18±0.30	0.14±0.24	0.000[ADE]	0.000[ADE]
Child Eating Styles						
Food Neophobia[2]	3.09±1.05	3.20±0.96	3.12±1.03	3.11±0.93	0.921	0.863
Emotional Eating[2]	1.84±0.84	1.82±0.75	1.93±0.87	2.11±0.89	0.253	0.258
Self-Regulation[2]	3.34±0.99	3.50±0.91	3.31±0.91	2.93±0.99	0.052	0.044
Child Sleep Time and Quality						
Sleep Time (hours/day)	9.70±1.07	9.57±0.97	9.21±1.02	9.38±0.87	0.007[B]	0.011
Child Met Sleep Recommendations[5]	92 (27.06%)	10 (21.74%)	9 (13.85%)	4 (10.53%)	0.024	0.030
Sleep Quality[2]	4.28±0.77	4.30±0.76	4.12±0.76	4.26±0.69	0.475	0.501

*ANOVA indicate significant ($p<0.01$) main effects among Whites and Hispanic cluster groups.
**ANCOVA indicate significant ($p<0.01$) main effects among Whites and Hispanic cluster groups while controlling for family affluence score.
Between group differences for ANOVA (using Tukey post-hoc tests) and ANCOVA (using Bonferroni post-hoc tests) indicate significant ($p<0.05$) between group differences of:
[A] Whites and Cluster 1.
[B] Whites and Cluster 2.
[C] Whites and Cluster 3.
[D] Cluster 1 and Cluster 2.
[E] Cluster 1 and Cluster 3.
[F] Cluster 2 and Cluster 3.
[1] Ward's Hierarchical Cluster Analysis was used to assign Hispanics to clusters based on acculturation (i.e., 3 personal measures [language of survey, language used in home, country of birth] and 3 environmental measures based on census tract [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]).
[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.
[3] Possible score range = 0 to 30; higher scores indicate poorer health-related quality of life.
[4] Possible score range = 0 to 42; higher scores indicate more physical activity.
[5] Possible score range = 0 to 1; children were categorized as meeting sleep recommendations set forth by the National Sleep Foundation[305] if they had 11-14, 10-13, or 9-11 hours of sleep based on age categories (2, 3-5, and 6-9 years of age); scores of 0 and 1 were categorized as either not meeting or meeting recommendations for age, respectively.

group did not differ on any measure. Most differences were seen between Whites and Clusters 1 and 2, the least and somewhat acculturated clusters. Few differences were seen among the Hispanic cluster groups.

Child Health Status. All mothers reported that their children's health was very good; however, White mothers reported a significantly higher health status for their children than Clusters 1 and 2, the least and somewhat acculturated clusters. Child Quality of Life scores[110,123] were similar across groups with mothers reporting that their children had few days of poor mental or physical health monthly. Further analysis using ANCOVA revealed that, even after controlling for family affluence scores, significant differences among the groups remained the same for all measures.

Child Physical Activity and Sedentary Behaviors. All mothers reported that their children had low physical activity scores. Also, all mothers reported that their children exceeded the recommendations for screentime (<1 hour daily of high quality programming for children older than 2 years).[307] No significant differences were found among the groups for reported child physical activity and sedentary behaviors.

Child Beverage Intake. Children infrequently drank sugar-sweetened beverages, milk, and fruit and vegetable juice. Overall, children of mothers in Cluster 1, the least acculturated cluster, consumed less sugar-sweetened beverages and milk, but more fruit and vegetable juice than children of mothers in other groups. For example, Whites and Hispanics in Cluster 1, reported that their children consumed less sugar-sweetened beverages than Hispanics in Cluster 2, the somewhat acculturated cluster. Additionally, children of mothers in Cluster 1 consumed less milk than children of Whites and mothers in Cluster 2. Mothers in Cluster 1 also reported that their children consumed more fruit

and vegetable juice than children of Whites and mothers in Cluster 3. Further analysis using ANCOVA revealed that, even after controlling for family affluence scores, significant differences among the groups remained the same for all measures.

Child Eating Styles. Mothers reported that their children had moderate food neophobia, and self-regulation scores, but low emotional eating scores. The four groups of mothers did not differ on any of these measures.

Child Sleep Time and Quality. Few mothers reported that their children met age-appropriate sleep recommendations; however, more Whites and the least acculturated Hispanic mothers in Cluster 2 reported that their children met requirements than Hispanics Clusters 1 or 3 (27% vs. 22% vs. 14% vs. 11%, respectively).[305] All groups reported that their children had high sleep quality.

Interpersonal Characteristics of Mothers and their Young Children by Acculturation Clusters. Interpersonal characteristics are reported in Table 33. Few differences were seen between Whites and Clusters 2 and 3, the somewhat and most acculturated clusters. Most differences were seen between Whites and Cluster 1, the least acculturated cluster. Few differences were seen among the Hispanic cluster groups.

Family Meal Cognitions. Mothers did not differ in their family meal cognitions. All mothers agreed that it is important to have family meals and felt that their mealtime atmosphere was positive. Mothers agreed that they tend to plan for meals in advanced and put effort into preparing meals. Mothers agreed that they had had the time and energy to prepare meals. Mothers also agreed that they had high self-efficacy in their ability to prepare healthy foods.

Table 33: Interpersonal Characteristics by Hispanics Clustered by Acculturation (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Clusters Cluster 1[1] (n=46) Mean±SD or N (%)	Cluster 2[1] (n=65) Mean±SD or N (%)	Cluster 3[1] (n=38) Mean±SD or N (%)	ANOVA* p	ANCOVA** p
Family Meal Cognitions						
Importance Placed on Family Meals[2]	4.48±0.63	4.54±0.54	4.37±0.73	4.41±0.73	0.523	0.514
Family Meal Atmosphere[2]	4.02±0.90	4.22±0.81	3.98±0.77	4.11±0.69	0.426	0.457
Family Meal Planning[2]	3.39±1.05	3.45±1.01	3.31±1.00	3.39±0.99	0.916	0.867
Effort of Cooking[2]	3.50±0.92	3.66±0.86	3.58±0.81	3.49±0.87	0.641	0.697
Time and Energy for Family Meals[2]	4.07±0.96	4.26±0.83	4.00±0.91	3.91±1.00	0.341	0.377
Meal Preparation Self-Efficacy[2]	4.00±0.90	3.87±0.88	3.83±0.87	3.78±0.91	0.250	0.266
Family Meal Behaviors						
Family Meal Frequency/Week	12.88±4.59	10.24±5.65	12.37±4.44	12.92±4.75	0.005[AE]	0.012
Meal Environment Frequency/Week						
Unhealthy Meal Location	2.97±3.41	7.70±5.52	4.35±3.09	4.03±3.76	0.000[ABDE]	0.000[ADE]
In the Car	0.36±1.02	2.76±3.05	0.46±1.03	0.39±0.86	0.000[ADE]	0.000[ADE]
At Fast Food Restaurant	0.70±1.08	1.39±1.73	1.20±1.23	1.39±1.44	0.000[ABC]	0.000[ABC]
In Front of TV	1.90±2.38	3.54±2.77	2.69±2.41	2.24±2.17	0.000[A]	0.001[A]
At Dining Room Table	5.08±2.29	2.54±2.80	4.18±2.43	5.66±1.70	0.000[ABDEF]	0.000[ADEF]
Media Use During Meals Frequency/Week						
Media Use (TV)	3.20±2.68	3.35±2.70	4.11±2.41	3.84±2.68	0.057	0.085
Media Use (Tablet, Video Games, etc.)	1.37±2.22	1.78±2.48	2.43±2.78	2.47±2.65	0.001[BC]	0.001[BC]
Household Interactions and Organization						
Family Support for Healthy Eating[2]	3.57±1.35	3.83±1.40	3.38±1.39	3.38±1.30	0.309	0.355
Family Support for Physical Activity[2]	3.75±1.37	3.93±1.31	3.56±1.36	3.49±1.38	0.354	0.373
Family Cohesion[2]	4.04±0.76	3.92±0.77	3.94±0.62	3.91±0.79	0.496	0.600
Household Organization[2]	3.41±1.07	3.93±1.15	3.56±0.99	3.28±1.17	0.010[AE]	0.016

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic Cluster groups.

**ANCOVA indicate significant (p<0.01) main effects among Whites and Hispanic cluster groups while controlling for family affluence score.

Between group differences for ANOVA (using Tukey post-hoc tests) and ANCOVA (using Bonferroni post-hoc tests) indicate significant (p<0.05) between group differences of:

[A] Whites and Cluster 1.

[B] Whites and Cluster 2.

[C] Whites and Cluster 3.

[D] Cluster 1 and Cluster 2.

[E] Cluster 1 and Cluster 3.

[F] Cluster 2 and Cluster 3.

[1] Ward's Hierarchical Cluster Analysis was used to assign Hispanics to clusters based on acculturation (i.e., 3 personal measures [language of survey, language used in home, country of birth] and 3 environmental measures based on census tract [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]).

[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.

Family Meal Behaviors. All mothers reported that they shared at least 1 meal daily with family members weekly. However, mothers in Cluster 1, the least acculturated cluster, had 2 fewer family meals weekly than the other groups. The totals meals consumed in unhealthy locations (i.e., in the car, at fast food restaurants, in front of the TV), was significantly higher for mothers in Cluster 1 than all other groups. Regarding meals consumed in healthy locations, mothers in Cluster 1 had the lowest frequency compared to all other mothers. Additionally, mothers in Cluster 2, the somewhat acculturated cluster, had fewer meals in healthy locations than Whites and mothers in Cluster 3, the most acculturated cluster. Mothers reported that they used (TV or media devices i.e., tablets, video games) at few meals, however, Clusters 2 and 3 were more likely to use media devices during mealtimes than Whites. Further analysis using ANCOVA revealed that, after controlling for family affluence scores, significant differences were no longer found among the groups for total family meal frequency. Additionally, significant differences were no longer found between Whites and Cluster 2 for total unhealthy meal location or for meal frequency at the kitchen table. The same significant differences were found for some measures of family meal location (i.e., in the car, at fast food restaurants, and at the dining room table) and media use at mealtimes.

Family and Household Interactions and Organization. Overall, mothers reported fairly good support from their families for healthy eating and physical activity. Mothers also reported that they had moderate-high family cohesion and household organization. Cluster 1, the least acculturated cluster, reported greater household organization than Whites and Cluster 3, the most acculturated cluster. Further analysis using ANCOVA

revealed that, after controlling for family affluence scores, mothers did not differ in their household organization.

Home Environment Characteristics of Mothers and their Young Children by Acculturation Clusters. Characteristics of the home environment are summarized in Table 34. Whites and Cluster 3 differed only on one measure. Most differences were seen between Whites and Cluster 1, the least acculturated cluster. Few differences were seen among the Hispanic cluster groups.

Home Opportunities for Physical Activity Check-UP (HOP-UP). Overall, Hispanics in Cluster 1, the least acculturated cluster, tended to live in environments that has less space and supports for physical activity. For example, Cluster 1 had fewer indoor/house and neighborhood space and supports than Whites, and fewer outdoor/yard and supports for physical activity than other mothers. Regarding perceived neighborhood safety, Clusters 1 and 2, the least and somewhat acculturated clusters, perceived their neighborhoods as less safe than Whites and Cluster 3, the high acculturated cluster. All mothers had low (<3 days/week) frequency of weekly active outdoor play. Further analysis using ANCOVA revealed that, after controlling for family affluence scores, significant differences were no longer found for neighborhood space and supports for physical activity. Additionally, significant differences were no longer found between Clusters 1 and 3 for outdoor/yard space and supports for physical activity, and between Clusters 2 and 3 for neighborhood environment safety. Significant differences among the groups remained the same for indoor/home space and supports for physical activity.

Sedentary Screentime Environment. Overall, mothers reported many (>8) media devices in their households. However, mothers in Cluster 1, the least acculturated cluster, had

Table 34: Environmental Characteristics by Hispanics Clustered by Acculturation (N=489)

Characteristic	White (n=340) Mean±SD or N (%)	Hispanic Clusters Cluster 1[1] (n=46) Mean±SD or N (%)	Cluster 2[1] (n=65) Mean±SD or N (%)	Cluster 3[1] (n=38) Mean±SD or N (%)	ANOVA* p	ANCOVA** p
Home Opportunities for Physical Activity (PA) Check-UP						
Indoor/Home Space and Supports for Physical Activity[2]	3.39±0.80	2.93±1.04	3.18±0.80	3.21±1.00	0.002[A]	0.008[A]
Outdoor/Yard Space and Supports for Physical Activity[2]	4.45±0.59	3.91±0.91	4.32±0.62	4.33±0.89	0.000[ADE]	0.000[AD]
Neighborhood Space and Supports for Physical Activity[2]	4.12±0.99	3.66±1.08	3.76±0.86	3.90±1.19	0.003[AB]	0.029
Neighborhood Environment Safety[2]	3.50±0.85	3.07±0.90	3.02±0.79	3.57±0.81	0.000[ABEF]	0.000[ABE]
Frequency of Active Outdoor Play[2]	2.62±0.98	2.28±0.77	2.51±0.96	2.49±0.86	0.141	0.201
Sedentary Screentime Environment						
Media Equipment Availability in the Home	11.08±4.77	8.78±3.83	11.48±4.89	11.97±5.13	0.006[ADE]	0.045
Media Equipment Availability in the Child's Bedroom	1.22±1.62	1.67±1.65	2.17±1.66	1.61±1.70	0.000[B]	0.000[B]
Media Equipment Accessibility[2]	2.37±1.18	2.59±1.05	2.71±1.12	2.97±1.25	0.005[C]	0.006[C]
Minutes of Screentime Child Allowed per Day	426.40±663.70	592.17±744.23	547.62±734.21	622.11±910.24	0.155	0.209
Minutes of Time the TV is on Daily with No One Watching	124.28±209.21	125.87±183.32	126.23±195.99	160.66±233.21	0.787	0.614
Household Food Availability						
Fruit/Vegetables (servings/person/day)	6.03±2.03	5.79±2.29	5.93±2.16	5.35±2.19	0.265	0.216
Sugar-Sweetened Beverages (servings/person/day)	0.22±0.26	0.22±0.19	0.28±0.24	0.28±0.26	0.216	0.241
High Energy/Low Nutrient Snacks (servings/person/day)	1.90±1.75	1.98±2.10	2.17±1.64	2.42±2.08	0.309	0.290
Household Food Accessibility						
Child Access to Nutrient Poor Foods[3]	0.91±1.43	0.91±1.33	1.15±1.80	1.13±1.46	0.567	0.578
Child Access to Nutrient Dense Foods[4]	2.57±1.72	2.17±1.79	2.45±1.89	2.18±1.52	0.319	0.455
Child Food Access Policy to Nutrient Poor Foods[3]	0.61±1.17	0.83±1.32	0.94±1.54	1.16±1.46	0.023	0.028
Child Food Access Policy to Nutrient Dense Foods[4]	1.50±1.65	1.63±1.78	2.23±1.84	1.63±1.34	0.016	0.012
Supermarket Accessibility[2]	4.09±1.05	3.80±1.24	3.77±1.17	3.90±1.09	0.064	0.103

*ANOVA indicate significant (p<0.01) main effects among Whites and Hispanic Cluster groups.
**ANCOVA indicate significant (p<0.01) main effects among Whites and Hispanic cluster groups while controlling for family affluence score.
Between group differences for ANOVA (using Tukey post-hoc tests) and ANCOVA (using Bonferroni post-hoc tests) indicate significant (p<0.05) between group differences of:
[A] Whites and Cluster 1.
[B] Whites and Cluster 2.
[C] Whites and Cluster 3.
[D] Cluster 1 and Cluster 2.
[E] Cluster 1 and Cluster 3.
[F] Cluster 2 and Cluster 3.
[1] Ward's Hierarchical Cluster Analysis was used to assign Hispanics to clusters based on acculturation (i.e., 3 personal measures [language of survey, language used in home, country of birth] and 3 environmental measures based on census tract [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]).
[2] Possible score range = 1 to 5; higher scores indicate greater expression of the characteristic measured.
[3] Possible score range = 0 to 6; higher scores indicate greater expression of the characteristic measured.
[4] Possible score range = 0 to 5; higher scores indicate greater expression of the characteristic measured.

fewer total media devices in their homes compared to the other groups. All mothers reported that their children had at least 1 media device available in their bedroom; however, Cluster 2, the somewhat acculturated cluster, reported having about 1 more media device in their children's bedrooms than Whites. Mothers reported that media equipment was somewhat accessible to children in their homes; however, Cluster 3, the most acculturated cluster, reported that media equipment was more accessible in their home than Whites. Further analysis using ANCOVA revealed that, after controlling for family affluence scores, significant differences were no longer found among the groups for total media devices in their households. Significant differences among the groups remained the same for all other measures.

Household Food Availability. Mothers reported that they had adequate (at least 5 servings/person/day) availability of fruits/vegetables in their homes, moderate (2 servings/person/day) availability of high energy/low nutrient snacks, and low availability (less than 1 serving/person/day) of sugar-sweetened beverages. No significant differences were found in household food availability.

Household Food Accessibility. Mothers reported that they had similar food accessibility and food access policies in their home. No significant differences were noted among the four groups.

Supermarket Accessibility. All mothers reported that supermarkets were easily accessible to them. Mothers did not differ in their accessibility to supermarkets.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This chapter discusses findings from the three research questions, as well as study limitations, strengths, and conclusions. It concludes with recommendations for future research.

The goal of this study was to comprehensively examine the weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of mothers and their young children by maternal race/ethnicity and acculturation. The cross-sectional survey data was collected from a large, demographically diverse sample of mothers with young children (aged 2 to 9) and was used to 1) describe how weight-related characteristics of home environments differ by maternal race/ethnicity, 2) describe how weight-related characteristics of home environments of Hispanic mothers and their young children differ by maternal personal acculturation and their acculturation environments, and 3) describe how weight-related characteristics of home environments of Hispanic mothers and their young children differed when clustered on their combined acculturation measures.

SAMPLE CHARACTERISTICS

The 568 mothers who completed the cross-sectional survey were 32.73±5.55SD years and their children were 4.57±1.66SD years with slightly more than half being male (52%). The proportion of White to non-White mothers was similar to national averages; however, the proportion of Hispanics was higher (26% vs. 17.8%) and the proportion of Blacks was lower (8% vs. 13%) than the national averages.[308] The higher proportion of

Hispanics is possibly due to the targeted recruitment of Spanish-speakers or the slightly higher proportion of Hispanics living in recruitment areas (i.e., NJ and AZ, with 20% and 31% of the population being Hispanic, respectively) compared to the national average.[309,310]

Additionally, mothers in this sample were more educated compared to national averages of women over 25, with a higher proportion having at least a baccalaureate degree (48% vs. 34%) or some college (38% vs. 28%), and fewer having a high school diploma or less (14% vs. 38%).[311] The proportion of mothers in this sample who had zero hours of paid employment per week was similar to the national labor force of married mothers with children under 6 years old (38% vs. 36%).[312] More mothers in this sample lived in dual parent households than the national average (82% vs. 69%).[313] This is not surprising due to the fact that this sample is highly educated; in the U.S., there is a socioeconomic gap in marriage rates where individuals with a higher level of education have an increased rate of marriage compared to those with lower education levels.[314]

RESEARCH QUESTION 1

How do the weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of mothers and their young child differ by maternal race/ethnicity?

This study explored how intrapersonal, interpersonal, and home environment characteristics of mothers and their young children differ by maternal race/ethnicity. Maternal racial/ethnic groups were categorized as only White, Hispanic (any race), only Black, and only Asian/Asian Indian. Although significant differences were found in

intrapersonal, interpersonal, and environmental characteristics among mothers of all races, Hispanic mothers tended to significantly differ more frequently from other racial/ethnic groups than did pairwise comparisons not including Hispanic mothers.

Intrapersonal, Interpersonal, and Environmental Characteristics

Socioeconomic Status. Nationally, Hispanic and Black mothers experience lower levels of educational attainment compared to Whites and Asians, which was observed in the study sample.[315] About a third of White and Black mothers in this study reported that they did not work outside the home, which is similar to national averages of all married mothers with children under 6.[312] However, the percentage of Hispanic and Asian mothers who did not work exceeded the national average of married women with children under 6 (43% and 42% vs 36% respectively).[312] Similar to national averages, lower percentages of Blacks and Hispanics with children lived in dual parent households than Whites.[316] Additionally, analyses of national data have found that Hispanics have lower family affluence compared to Whites, this was observed in this study.[317] Compared to national averages of households with children under the age of 6, mothers had a lower risk of food insecurity (17% and 6%, respectively); although nationally, Hispanics and Blacks experience higher rates of food insecurity, no racial/ethnic differences were observed in this study.[318]

Health. Studies have found mixed results when comparing health related quality of life and race/ethnicity.[319,320] Some studies have found that Blacks have more frequent days of poor health than other races and ethnicities whereas other studies have identified no differences[319,320]; this study found that mothers of all racial/ethnic group reported few days of poor mental or physical health. An analysis of NHANES data of adults in the

U.S. found racial/ethnic difference in prevalence of depression where Asians had the lowest prevalence, and Blacks, Hispanics, and Whites have a similar prevalence of depression (3%, 8%, 8%, 9%, respectively)[321]; however, studies have found that mothers with preschool-aged children experience increased prevalence of depression compared to before giving birth.[322] Although all mothers reported low levels of depression, Hispanic mothers reported greater depression severity than White mothers.[322]

Mothers in this study reported that their children had few days of poor mental or physical health. Studies have found that Hispanic children experience poorer health compared to White children[323,324]; conversely, in this study, Hispanic mothers, as well as Asian mothers, reported that their children had fewer days of poor mental or physical health than did Whites.

Physical Activity. National averages have found that about half of adult women between the ages of 25-64 meet federal physical activity guidelines for aerobic activity (150 minutes a week of moderate intensity aerobic physical activity).[325] Averages of children's physical activity across the U.S. show that they also are not meeting national guidelines for physical activity (60 minutes a day of physical activity).[326-328] Similarly, parents and children in this study had low and moderate physical activity levels, respectively. Additionally, although other studies have reported that Hispanics and Blacks have a significantly lower frequency of physical activity than Whites[329-333], this study found no racial/ethnic differences in parent or child physical activity levels.

Parent behaviors and cognitions around physical activity play a critical role in the frequency of physical activity in their children.[334-336] Parents who are more physically active, engage in physical activity more often with their children, and encourage and

value physical activity are more likely to have physically active children. [334-336] In addition, living in safe neighborhoods, having space and supports for physical activity behaviors, restricting sedentary media in children's bedrooms, and less overall sedentary media in the home are associated with more activity.[250,252,292,337]

Hispanic mothers in this study, compared to White mothers, placed less value on physical activity for their children, were less likely to encourage children's physical activity, placed less importance on modeling physical activity, and spent fewer days being physically active with their children. Despite the lower physical activity values, encouragement, and modeling scores of Hispanic mothers and their limited space and support for physical activity, no racial/ethnic differences were identified in either maternal or child physical activity level or frequency of active outdoor play.

Research has reported that greater perceived neighborhood safety, living in a higher socioeconomic neighborhood, and having more supports for physical activity are strong predictors of physical activity.[252,337-341] Hispanics rated their neighborhood safety and space and supports for physical activity lower than Whites, yet their physical activity levels were similar. Although it is not clear why this finding contrasts with reported research, it may be that the Hispanic mothers in the study reported here had greater access to physical activity space and supports and lived in neighborhoods that were safer than those participating in previous studies. Like other studies, the Hispanic participants in this study lived in less safe neighborhoods than Whites, yet unlike previous research they had similar space and supports for physical activity.[342-346] Due to differing methodologies, it is not possible to directly compare the results of previous studies with this one.

Screentime. Households were replete with sedentary media devices, averaging

10.97±4.81SD per home. The American Academy of Pediatrics recommends that no

media devices be available in children's bedrooms.[347] However, similar to findings

reported in other studies, most mothers reported children had at least 1 media device in

their bedrooms (58%),[307,348] with the children of Hispanic and Black mothers[349] having a

greater number of media devices available in their bedroom.

In addition to availability, mothers also reported that their children had low-to-

moderate accessibility of media devices, with Hispanic and Black mothers reporting

significantly greater media equipment accessibility than Whites. Parental limits on the

amount of screentime (i.e., TV/movies, sedentary computer time, active/inactive video

games) children were allowed each day did not differ across racial/ethnic groups,

however limits far exceeded American Academy of Pediatrics recommendations.[347]

Many people living in the U.S., like those in this study, spend significant amounts

of time interacting with sedentary media devices.[350] The average time mothers spent in

screentime was 350.86±278.25SD minutes daily, which is in lower than national data

reporting on adult screentime use.[351] Mothers in this sample may have had lower levels of

screentime because they interpreted the survey item as referring to leisure time media use

(i.e., watch TV or movies, play games on computer or smart phones, or send emails or

text messages), which seems to be supported by the lack of significance in media time

among those who worked full time, part-time, or did not work.

Similar to national data,[350,352] children far exceeded the American Academy of

Pediatrics recommendation of limiting screentime to 1 hour or less per day,[307] with

children of all racial groups spending over 4 hours/day engaged in screentime.[348-352] The

excessive screentime of both mothers and children may be due to their home media environments which contained many media devices and opportunities (i.e., media devices in children's bedroom, parental limits on screentime) that could encourage sedentary behaviors.[300,334] Study findings indicate that it is critical to continue to encourage parents to limit their children's access to media devices in the home media environment so that they may better meet recommendations.[307,348,353]

Sleep. The National Sleep Foundation recommends that adults have 7 to 9 hours of sleep nightly.[354] National averages have shown that 35% of women in the U.S. sleep <7 hours nightly.[355] Mothers in this study slept an average of 7.11±1.24SD hours per night, meeting sleep recommendations, and reported moderate sleep quality. A poll conducted by the National Sleep Foundation found that Asians are least likely to report poor sleep quality compared to other races; similarly, Hispanic and White mothers in this study were more likely to report poorer sleep quality than Asians.[356,357]

Additionally, the American Academy of Sleep Medicine recommends that preschool children sleep 10 to 13 hours per night.[358,359] However, studies have found that young children are not getting adequate amounts of sleep.[360,361] Similarly, mothers in this study reported that their children slept an average of 9.59±1.04SD hours/day. Like other studies, Hispanic mothers reported that their children slept significantly fewer hours nightly than children of Whites.[361-363] It is critical to encourage mothers to create environments that support adequate sleep in children as poor sleep duration is associated with adverse health outcomes, including excess body weight.[358,359,363,364]

Diet-Related Behaviors and Environment. Few adults in the U.S. have adequate intake of fruits and vegetables (13% and 9%, respectively).[365,366] In contrast, mothers in this

study reported intakes that came close to meeting the USDA dietary guidelines for intake of fruits and vegetables, consuming 4.47±1.87SD servings daily their household availability of these foods indicates the potential for fully reaching recommended intake goals. It is not clear why participants' intakes were near recommended intake levels. It may be that mothers over reported intake; adults in the U.S. are unaware of the portion size of a fruits or vegetables set by USDA which could contribute to overestimates.[367] The food frequency instrument used in this study was previously validated and used in many studies, however, it is possible that it lacked precision in that there is no reference point for the serving size of the food items. It is also possible that mothers were influenced by self-report bias knowing that they were participating in a program to improve family health; studies have found that self-report bias can greatly influence reported fruit and vegetable intake.[368] Finally, mothers self-selected for participation in this study and may actually have been attracted to it because they wanted validation for their healthy behaviors.[369-373]

Fewer women in this study consumed one or more sugar-sweetened beverages daily when compared to national averages (32% vs. 45%).[374] National averages show that Hispanic and Black adult women have a higher intake of calories from sugar-sweetened beverages than Whites and Asians, whereas no racial/ethnic differences were found in maternal sugar-sweetened beverage intake in this study.[374] For children, national averages show that beverage consumption patterns are changing in the U.S., where children are consuming fewer sugar-sweetened beverages and less milk, and more water.[375-377] Mothers in this study also reported that their children had low intake of sugar-sweetened beverages and milk. [378] Like other studies, children of Hispanic and Black mothers

consumed more sugar-sweetened beverages and fruit juice than other groups[378]; however, for all children, sugar-sweetened beverage consumption was still low and juice intake was within recommendations (less than 4-6 ounces of juice per day)[379], consuming 0.32±0.45 and 0.58±0.38 servings/day of sugar-sweetened beverages and juice, respectively.[378]

The home food environment also serves a critical role in the development of dietary habits for both parents and children.[380,381] Many studies have found differences in the home food environment by race/ethnicity. An analysis of NHANES data showed that Whites have a higher availability of salty snacks, soft drinks, and low-fat/fat-free milk.[382] Additionally, one study found that Whites have healthier home and food environments than other racial/ethnic groups[372] whereas another study found that Hispanic families had greater availability of fruits, vegetables, and soda than Blacks.[383,384] Contrary to other studies, no differences were found in the home food environment by maternal race/ethnicity.[382,384] The quantity of fruits/vegetables study participants had in their home to meet USDA fruit/vegetable guidelines (5-9 servings of fruits/vegetables per day), reporting 5.96±2.06SD servings/person/day, likely helped participants to meet the USDA dietary intake recommendations.[366,385]

Supermarket accessibility is a facilitator of positive dietary behaviors. Living in areas where supermarkets are less accessible is linked to a higher BMI and lower fruit and vegetable intake.[341] Overall, mothers reported that supermarkets were accessible to them; however, similar to other studies, Hispanics had lower access to supermarkets compared to Whites, but had few differences in the dietary intake of the mothers and their child and no differences in their home food supplies.[90]

Maternal Feeding Practices. Experts recommend that parents utilize non-controlling feeding practices (e.g., modeling healthy eating) and limit controlling feeding practices as they have been associated with excess weight gain and negative eating behaviors.[386,387] Mothers in this study reported low (use of rewards and pressure to eat during meals) and moderate (overt and covert control of intake, restriction of child's food choices) use of negative feeding practices. Studies have identified racial/ethnic differences in parental feeding practices finding that Whites are less likely to use controlling feeding practices, such as restriction and pressure, compared to Hispanics and Asians; researchers have postulated that the differences are likely due to the parents' acculturation level and/or socioeconomic status.[388-390] Similar to previous research, Hispanic mothers in this study were more likely to pressure their children to eat than other races.

Eating Behaviors. Mothers exhibited similar eating behaviors, with low levels of disinhibited, emotional, dietary restraint eating, and moderate levels of food adventurousness; however, Hispanic mothers were less food adventurous than Whites. As food adventurousness is associated with a willingness to try new foods that are unfamiliar, it is possible that being less food adventurous is linked to the mothers' dietary acculturation.[38,105,263]

Young children with high levels of food neophobia are less likely to consume fruits and vegetables and can increase obesity risk.[391-393] Food neophobia is associated with other negative eating behaviors such as emotional eating, less variety of food preference, and negative reactions to food.[391-393] Additionally, having poor self-regulation of dietary intake and being an emotional eater can lead to excess weight gain.[285,394] Children in this study exhibited similar eating styles across racial/ethnic groups, with

mothers reporting their children had moderate food neophobia and self-regulation scores, and low emotional eating scores. Similarly, others have found no racial/ethnic differences in child food neophobia and self-regulation.[393,395]

Family Meal Cognitions and Behaviors. Experts recommend that families share frequent meals together as they are associated with the development of positive dietary habits and increased family bonds.[396,397] Studies have found that Blacks have family meals together less often and Hispanic families share more family meals and have fewer meals in front of the television compared to other racial/ethnic groups.[383,398-400] Conversely, all mothers in this study reported that they have frequent family meals (12.48±4.87SD family meals per week), with no racial/ethnic differences in family meal frequency.[383,398-400] Few studies have examined racial/ethnic differences in family meal location; one study[401] reported Hispanics and Asians ate fewer meals outside of the home than Whites, another study[402] found that Blacks had a greater frequency of fast food meals compared to Whites, while another study[403] found Hispanics ate more meals outside of the home than all other racial/ethnic groups. In this sample, Hispanic and Black mothers had family meals more frequently in unhealthy locations (i.e., in the car, at a fast food restaurant, in front of the TV), and less frequently in healthy locations (i.e., the dining or kitchen table) compared to Whites. Studies have found no differences among race/ethnicity and family meal cognitions.[404] Similarly, despite having differences in family meal location, mothers had similarly positive family meal cognitions in that they agreed that family meals are important and rated their family meal atmosphere positively.

Outcome Expectations and Self-Efficacy for Healthy Behaviors. Outcome expectations are the expected positive and/or negative consequences associated with participating in a particular behavior.[182] Individuals with more positive outcome expectations for a particular behavior are more likely to attempt a behavior change.[182] Maternal outcome expectations for healthy eating and physical activity were high across racial/ethnic groups. Having high outcome expectations for both healthy eating and physical activity likely contributed to the relatively positive diet-related behaviors (e.g., adequate fruit/vegetable intake, low sugar-sweetened beverage intake) and may indicate an increased likelihood this cohort of mothers will be successful in making health behavior changes.

Self-efficacy refers to an individual's self-confidence regarding a particular behavior; having a higher self-efficacy for performing a behavior is associated with attempting and maintaining behavior change.[182] Mothers in this study had moderate self-efficacy for participating in health protective behaviors for themselves as well as promoting obesity protective behaviors in children. Hispanic mothers in this study had lower self-efficacy for promoting childhood obesity protective behaviors than Black and White mothers; this low self-efficacy may be a contributing factor to the findings that Hispanic mothers participated less in many obesity protective behaviors (e.g., feeding practices, family meal environment).[405-408] Spanish-speaking Hispanics living in the U.S. who have high health literacy have higher self-efficacy and participate in more positive behaviors than Spanish-speaking Hispanics who have low health literacy, suggesting that lower self-efficacy for nutrition and physical activity may be related to maternal acculturation.[405-407]

Psychographic Characteristics. Increased perceived stress can lead to chronic health conditions, such as obesity and hypertension.[83,409-411] Additionally, stress is thought to play a role in the racial/ethnic differences associated with weight-related disease. Blacks and Hispanics experience disproportionate rates of chronic stress which often lead to health disparities.[83,409-411] Unlike other studies, neither mothers' stress level nor stress management self-efficacy differed by race/ethnicity.[83,409-411] Conversely, mothers in this study reported their perceived stress levels as moderate and had low self-efficacy with regard to managing their stress. Stress is inversely related to socioeconomic status.[412-414] As minorities tend to experience a greater burden of poverty, it is possible that their socioeconomic status heightens their levels of stress.[412] Unlike other studies, mothers in this study had a similar socioeconomic status (i.e., education level, hours of paid employment, marital status), although some racial/ethnic differences were found, likely leading to similar perceived stress and self-efficacy for stress management.

Need for cognition describes an individual's tendency to enjoy the process of thinking through problems. Studies have found no racial/ethnic differences in need for cognition scores.[415,416] Conversely, Hispanic mothers in this study had lower need for cognition scores compared to Blacks and Whites; having a lower need for cognition could contribute to health disparities because it may make it harder for individuals to follow instructions for maintaining health set out by health care providers.

Conclusions

The results of Research Question 1 highlight key racial/ethnic differences in the intrapersonal, interpersonal, and home environments of mothers and their young children. A comparison among maternal racial/ethnic groups identified variations in the weight-related characteristics of home environments of mothers and their children, especially

between Hispanic and White mothers. This study lends support to other studies examining racial/ethnic differences in that Hispanics tended to differ significantly from Whites, however it is unclear as to whether these differences are related to the maternal ethnicity or if they are confounded by mothers' acculturation.

RESEARCH QUESTION 2

2A. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers with high or low personal acculturation levels?

2B. How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers living in a high or low acculturation environment?

This portion of the study explored how intrapersonal, interpersonal, and home environment characteristics of White mothers differ from Hispanic mothers grouped by their acculturation levels. These comparisons were conducted to explore whether the differences found between White and Hispanic mothers in Research Question 1 were associated with acculturation level.

Hispanic Personal Acculturation and Weight-Related Characteristics of the Home Environment

The personal acculturation score was created using three acculturation proxy variables (i.e., language of survey, language used in home, and country of birth) to assign Hispanic mothers to either low or high personal acculturation (n=95 and 54,

respectively). Hispanic mothers scoring 0 on all personal acculturation variables were categorized as high acculturation whereas those scoring 1 to 3 on personal acculturation were categorized high personal acculturation.

A comparison of White and Hispanic mothers grouped by personal acculturation revealed that they differed with regard to markers of socioeconomic status (i.e., maternal education, hours of employment, and family affluence), with White mothers scoring significantly higher on these markers than low personal acculturation Hispanic mothers. High personal acculturation Hispanics also scored lower than Whites on maternal education. National averages have found that Hispanics have lower educational attainment than Whites,[315] which seems to be similarly low for both Hispanic personal acculturation groups in this study. It is likely that low acculturation Hispanics tended to be less employed than others due to barriers relating to education level, English language fluency, immigration status, and a social network with limited access to more acculturated individuals; however, employment can accelerate the process of acculturation when individuals are exposed to the English language and a more diverse social network leading to an improved socioeconomic status.[157] The similarities in maternal employment level and family affluence between White and high personal acculturation mothers and the higher maternal education level of high vs low personal acculturation mothers suggest that these improvements are linked to increasing acculturation. Hence, a key acculturation tool may be to provide educational and work opportunities for low acculturation audiences. These findings are congruent with reports that Hispanics with lower personal acculturation tend to have a lower socioeconomic status.[109,135,417,418]

Hispanic mothers in this study reported similar Health-Related Quality of Life scores to Whites, regardless of personal acculturation level. Few studies have considered the effects of acculturation on health-related quality of life per se,[419] with one study of post-menopausal women reporting that Hispanics with low acculturation had poorer health-related quality of life, with most differences eliminated after controlling for covariates (i.e., education, marital status, socioeconomic status).[419] Unlike previous research[420,421] where higher levels of acculturation were associated with increased depression, Hispanic mothers in this study reported similar low prevalence of depression. These data suggest that the mothers' acculturation level has limited effect on their health-related quality of life and depression, in contrast to other studies.[412,419-421] The similar health status and depression severity among all three groups may be at least partially due to all mothers having moderate family affluence, as improvement in socioeconomic status is associated with better health.[412]

All mothers rated their children's health as very good; however, White mothers rated their children's health significantly higher than both groups of Hispanic mothers, with low personal acculturation Hispanics reporting the lowest health status for their child. This finding is congruent with other studies[422,423] reporting that maternal acculturation is inversely related to the perceived health status of children. Other studies indicate this difference may be due to maternal nativity, independent of acculturation level. That is, foreign-born Hispanic mothers tend to rate their children's health lower than native-born Hispanics and Whites.[422,423] Further analysis of low acculturation Hispanic mothers in this study indicates that those who were foreign-born (n=41) rated their children's health significantly lower than those who were native-born (n=13) (data

not shown). These data suggest that maternal rating of child health is related to personal acculturation level, with Hispanic mothers born outside of the U.S. rating their child's health poorer than more acculturated Hispanics and Whites.

High acculturation Hispanic adults tend to spend more time in leisure-time physical activity than less acculturated counterparts.[109,136,346,424-426] In contrast, all three groups of mothers in this study had similarly low physical activity levels. Children of Hispanic mothers tend to be more physically active than their parents, with children of less acculturated Hispanics tending to be more physically active than children of more acculturated Hispanics.[427] Similarly, all children were more physically active than their parents; however, no differences were found among children of mothers in the three groups. These data suggest that personal acculturation is not linked to physical activity behaviors of mothers and their children.

Parents who are less acculturated tend to be less likely to model physical activity and participate in co-physical activity than their more acculturated counterparts.[187,346,426] Contrary to previous research, Hispanic mothers in the low and high personal acculturation groups did not differ in their physical activity behavior modeling and encouragement; however, differences were noted between Whites and both Hispanic acculturation groups. For example, compared to Whites, both Hispanic personal acculturation groups tended to value physical activity less for their child, had lower scores for encouragement and physical activity, valued physical activity modeling less, and spent fewer days being physically active. These data suggest that Hispanics, regardless of personal acculturation level, tend to value and encourage physical activity for their children to a lesser extent than Whites.

Few studies have examined the relationship between personal acculturation and physical activity environment. Low personal acculturation Hispanics in this study had fewer indoor/home, and neighborhood physical activity space and supports than Whites and fewer outdoor/yard space and supports than both other groups. These data suggest that acculturation level and the home and neighborhood physical activity environment are related,[344,345,428-430] perhaps because greater acculturation is associated with greater educational attainment leading to higher income and greater access to housing with more amenities, such as parks and sidewalks that support physical activity.[252,337,344,345,431]

Additionally, Hispanics tend to live in less safe neighborhoods than Whites,[342-346] with those who are least acculturated perceiving their neighborhoods as less safe than those with greater acculturation.[344,346] Similarly, both personal acculturation groups of Hispanic mothers lived in neighborhoods that were less safe than Whites, with low personal acculturation Hispanics perceiving their neighborhoods were the least safe. It is possible that the mothers' perceptions of their environment influenced their physical activity level and cognitions, as studies[187,432] of Hispanic mothers show that the parent perception of the safety of the physical activity environment greatly affected their physical activity-related parenting practices (i.e., engagement and promotion of physical activity). Interestingly, despite Hispanic mothers placing a lower value on physical activity and having fewer space and supports for physical activity, all mothers reported similar physical activity levels for themselves and their child. These data draws into question the role that environment has on physical activity level reported by others.[433,434]

Individuals who are most acculturated tend to spend more time engaged in screentime than those who are less acculturated.[135,435,436] This study found high

screentime in all groups and supports previous research[135,435,436] in that high personal

acculturation Hispanics engaged in more screentime than Whites and low personal

acculturation Hispanic mothers. Screentime is an important facilitator to the process of

acculturation as individuals can learn about U.S. culture, behavioral norms, and

language.[437,438] It is possible that Hispanics who used television to aid in their

acculturation continue to use it at a high rate out of habit or to further advance their

acculturation. This increased screentime may partially contribute to the increased risk of

obesity associated with Hispanic acculturation.

Hispanics with greater acculturation tend to not meet recommendations for

sleep.[138,363] It is hypothesized that high acculturated Hispanics sleep fewer hours due to

increased psychosocial stress related to their adaptation to a new lifestyle (e.g., changing

work schedule, decreased social support) and pressures to maintain gains that they have

made.[138] Similarly, high personal acculturation Hispanics had significantly less sleep than

both other study groups. Although studies[138,363] show that high acculturation Hispanics

tend to have poorer sleep quality with more frequent sleep complaints (i.e., trouble falling

asleep, restless sleep, nocturnal awakenings) than low acculturation Hispanics, no

significant differences were noted among Whites and Hispanic acculturation groups.

Although no studies to date have examined the relationship between child sleep

and acculturation, it is probable that children of high acculturation Hispanics would have

similar sleep patterns to their parents, having poorer sleep quality and less sleep than

other groups. In this study, less than a third of the children met sleep-for-age

recommendations, with children of high personal acculturation Hispanics being least

likely to meet recommendations (9%). This difference is likely due to various factors that

are associated with high personal acculturation level, including high media use and low physical activity. These data suggest that the increased accessibility to media devices reported by high acculturation Hispanic mothers may be taking away from children's screentime and not physical activity time.

As acculturation increases, diet quality for Hispanics tends to decrease.[29,135,137,439] For example, individuals with higher acculturation often have a lower intake of fruit, rice and beans, and a higher intake of sugar-sweetened beverages, salty/fatty snacks, and saturated fats.[29,135,137,439] However, in this study, both Hispanic personal acculturation groups had similar intakes of fruits and vegetables to Whites, and all mothers were close to meeting USDA dietary guidelines, having at least 4 servings of daily. This similarity may be related to the study participants' moderate family affluence level, as studies have found that diet quality improves with socioeconomic status,[440] which suggests that affluence related factors (e.g., education, income) may have a greater bearing on dietary intake than acculturation.

High acculturation Hispanics[137,42] tend to consume more sugar sweetened beverages than low acculturation Hispanics. In contrast, all mothers in this study reported that they had a low intake of sugar-sweetened beverages daily. Regardless of maternal acculturation, children tend to have similar dietary intake, with the exception of sugar sweetened beverages and sweets.[441] Similar to adults, children of high acculturation Hispanics tend to consume more sugar-sweetened beverages than children of low acculturation Hispanics.[81] This was congruent with the findings of this study where children of high personal acculturation Hispanics consumed the most sugar-sweetened beverages. Low personal acculturation Hispanics reported a higher intake of fruit juice

for their children, however, it is unclear whether or not the low acculturation group can accurately differentiate between fruit drinks and fruit juice as mothers may confuse these.[442] If the mothers are inaccurately reporting fruit drinks as fruit juice, this could artificially be lowering their children's intake of sugar sweetened beverages. This study's findings suggest that children's beverage intake is influenced by maternal acculturation, with sugar sweetened beverages and milk increasing and juice decreasing as acculturation increases.

Little is known about the relationship between acculturation and the home food environment. In this study, food environments were similar across study groups. These data suggest that personal acculturation level does not influence the home food environment.

Generally, Hispanics[90] tend to live in areas with lower access to supermarkets than Whites, although the relationship of supermarket access to acculturation is unknown. All study groups reported good supermarket access suggesting no effect of Hispanic race/ethnicity or acculturation on supermarket access. The lack of difference among study groups may reflect their moderate socioeconomic status of all mothers as having a lower socioeconomic status is associated with decreased access to supermarkets.[443]

Differences in maternal child feeding practices are thought to be, in part, due to acculturation status,[388-390] where those with greater acculturation tend to participate more in controlling child feeding practices and those with lower acculturation levels tending to use less restrictive practices.[134,444-446] In this study, all mothers tended to not pressure children to eat. However, high acculturation Hispanic mothers pressured children to eat significantly more than White mothers. High and low acculturation mothers scored

similarly on pressuring children to eat thereby calling into question the notion that mothers' child feeding practices differ by increasing acculturation level as reported by others.[134,445,446]

Few studies have examined relationships between personal acculturation and maternal or child eating behaviors. This study's mothers exhibited similar eating behaviors, suggesting that eating behaviors are not affected by maternal personal acculturation. Similar to other research,[395] study data suggest that children's eating behaviors are independent of maternal acculturation level.

The frequency of shared meals in Hispanic families often changes in response to environmental changes (e.g., hectic work that occur with acculturation).[38,105,151,157,447-449] High acculturation Hispanic mothers tend to spend less time preparing meals than their less acculturated counterparts;[157,447] however, in this study, all mothers had similar cognitions and behaviors regarding family meal preparation. These data suggest that acculturation does not affect maternal cognitions regarding family meals and meal preparation.

High acculturation Hispanics tend to consume fewer family meals than low acculturated Hispanics.[157,447] This difference was not observed in this study. However, low personal acculturation Hispanic mothers had significantly fewer family meals than White mothers (11 vs 13 per week).

Few studies have examined the relationship between acculturation and number of family meals at healthy vs less healthy locations. More acculturated Hispanics tend to consume more convenience foods and meals at restaurants than their less acculturated counterparts.[157,447,450] Conversely,[157,447,450] the only differences noted between personal

acculturation groups in this study was that low personal acculturation Hispanic mothers reported fewer family meals at the dining room table, and more total family meals at unhealthy locations and in the car than the high personal acculturation group. Additionally, compared to Whites, both groups of personal acculturation Hispanics had more total family meals in unhealthy locations, at fast food restaurants and in front of the TV. These data suggest that acculturation level affects some aspects of the family meal environment. As acculturation increases, families have fewer total family meals at unhealthy locations and in the car and more meals at healthy locations; however, these data also suggest that frequency of family meals at fast food restaurants and in front of the TV are higher, regardless of personal acculturation. It is likely that as acculturation increases, parents have access to employment opportunities with more traditional working hours that afford them more family time which in turn increases family meals at healthy locations and decreases family meals at unhealthy locations.

Self-esteem and self-efficacy for participating in health behaviors are greatly influenced by Hispanic acculturation.[451-453] Hispanics undergoing the process of acculturation tend to have lower self-esteem and confidence as new immigrants, which rises as their personal acculturation level begins to increase.[451,452] Hispanics who have a higher level of personal acculturation also tend to have higher parenting self-efficacy which can result in positive behavior change, leading to healthier lifestyles.[453] In contrast to previous research, no differences were seen between acculturation groups in this study. However, both low and high personal acculturation Hispanics reported having lower self-efficacy for promoting childhood obesity protective behaviors and child eating and weight management than White mothers. Additionally, all mothers reported a similarly

moderate score for participating in healthy behaviors for themselves. These data suggest that Hispanic mothers have lower self-efficacy for promoting healthy behaviors to their children, regardless of their acculturation level. Future nutrition education initiatives for Hispanic mothers should focus on increasing maternal self-efficacy regarding child obesity protective behaviors and child eating and weight management to improve health outcomes in children.

Hispanics with low personal acculturation tend to experience increased stress, which can contribute to poor health behaviors (e.g., less sleep).[31,411,454] However, Hispanics in this study did not differ from Whites in their perceived stress or self-efficacy of stress management, regardless of personal acculturation.

Need for cognition (i.e., enjoyment of thinking through problems) has been shown to be similar between Whites and Hispanics;[415,416] however, studies have not examined its relationship to acculturation. This study found that lower personal acculturation was associated with lower need for cognition; it is likely that the decreased need for cognition may be associated with the increased pressures and stress and desire for simplicity that are experienced by those who are undergoing the process of acculturation.[153,154]

Conclusions

The results of Research Question 2A highlight key differences in the intrapersonal, interpersonal, and home environments of White and high and low personal acculturation Hispanic mother groups. A comparison by maternal personal acculturation levels identified differences in the weight-related characteristics of home environments of mothers and their children, especially between Whites and low acculturation Hispanics. The fewer differences between Whites and high personal acculturation Hispanics than between Whites and low personal acculturation Hispanics suggests a role for

acculturation and its related effects (e.g., income level, education level, affluence, and housing) in these differences.

This study lends support to other studies that have examined personal acculturation differences. Similar to previous studies, compared to others, low personal acculturation Hispanics tend to have a lower socioeconomic status,[109,135,417,418] report poorer health status for their children,[422,423] and live in less safe neighborhoods,[109,135,344,346,417,418,422,423] whereas high acculturation Hispanics tend to use more controlling feeding practices,[134,445,446] have fewer hours of sleep,[138,363] engage in more screentime,[135,427,42] had more media devices available in their children's bedrooms,[363] and had children who consumed more sugar sweetened beverages.[441]

In contrast to previous research, Hispanic mothers of high and low personal acculturation in this study did not differ in their depression severity,[420,421] health related quality of life,[412,419-421] physical activity level,[109,136,346,424-426] diet quality,[29,135,137,439] and perceived stress and self-efficacy of stress management skills,[31,411,454] and their children did not differ in their physical activity level[427] and amount of screentime.[455] Additionally, in contrast to previous research,[157,447] low personal acculturation Hispanic mothers reported the fewest family meals weekly.

Previously unstudied by personal acculturation level, mothers in this study reported similar eating behaviors, family meal cognitions, home food environments, and access to supermarkets. Additionally, low personal acculturation Hispanics, compared to other groups, had more meals in unhealthy locations, fewer meals in healthy locations, lower need for cognition, lived in environments with fewer physical activity space and supports, and had children who consumed less milk and more juice. High acculturation

Hispanics reported that they lived in environments with greater access to media devices and their children were less likely to meet sleep recommendations.

Although this study has comprehensively examined the relationship between key aspects of the weight-related home environment and personal acculturation, it is still unclear how these differences relate to the acculturation environment. Thus far, few studies have examined the relationship between the acculturation environment and weight-related behaviors of the home environment.

Hispanic Acculturation Environment and Weight-Related Characteristics of the Home Environment

To assess the effect of environmental aspects of acculturation, the acculturation environment score was created using three census tract variables (i.e., percent foreign-born residents living in the census tract, foreign-born residents who arrived within the years 2010-2015 living in the census tract, percent Spanish-speaking residents who report speaking English less than very well living in the census tract)[296-298] to assign Hispanic mothers to either living in a neighborhood that is considered a low (score of 0 on acculturation environment) or high (score of 1, 2 or 3 on acculturation environment) (n=21 and n=128, respectively) acculturation environment. Hispanic mothers living in a low and high acculturation environment were compared to White mothers.

A comparison of White and Hispanic mothers grouped by their acculturation environment revealed that White mothers scoring higher on socioeconomic status markers than Hispanics in a low acculturation environment. These findings are congruent with other studies that have shown Hispanics living in immigrant enclaves (i.e., areas with a high density of immigrants) tend to have a lower socioeconomic status than those

living in more acculturated environments.[456-459] Further analysis found that, compared to those living in low immigrant density areas (n=51), Hispanic mothers living in high immigrant density areas (n=98) tend to be less educated and have lower family affluence (data not shown). These data are in support of previous research,[460] suggesting that as mothers move into more acculturated environments, their family affluence increases. Living in a low acculturation environment can limit the opportunities (e.g., education, family affluence, professional growth) for families, leading to a lower socioeconomic status, and when parents leave these environments, their opportunities for improved socioeconomic status increase.[456-459]

Hispanic and White mothers in this study reported similar Health-Related Quality of Life, regardless of Hispanic acculturation environment. Hispanics living in immigrant enclaves tend to be healthier, perhaps because high density immigrant areas serve to insulate individuals from the prevailing culture and slow health behavior changes that are associated with increasing acculturation (e.g., reduced diet quality and physical activity level).[461,462] Conversely, when compared to Hispanics living in high immigrant density areas (n=98), mothers living in low immigrant density areas (n=51) did not differ in their Health-Related Quality of Life (data not shown). Additionally, all mothers in this reported a similar low depression severity. Unlike previous research[420,463,464] that found that Hispanics living in immigrant enclaves tend to have higher rates of depression, all mothers had similar depression severity. These data suggest that the mothers' acculturation environment has limited effect on their health status and depression severity The similar health status and depression severity among all three groups may be at least

partially due to all mothers having moderate family affluence, as improved

socioeconomic status is linked to better health.[412]

All mothers reported that their children's health status was very good, however,

Hispanic mothers in low acculturation environments reported a lower health status for

their children than White mothers. Few studies have examined the relationship between

acculturation environment and child health status, however, children living in areas that

are highly concentrated with immigrants tend to be healthier than their more acculturated

counterparts.[461] However, when child health-related quality of life scores reported by

Hispanic mothers living in high immigrant density areas (n=98) in this study were

compared to those living in low immigrant density areas (n=51), no differences were

found (data not shown).

Studies examining the relationship between acculturation environment and

physical activity level of children and adults found that those living in areas with a high

proportion of immigrants tend to be less physically active.[459,462,465,466] Conversely, when

compared to Hispanic mothers in this study living in a high acculturation environment,

Hispanic mothers living in a low acculturation environment and their children did not

differ significantly in their physical activity level. These data suggest that the

acculturation environment has limited effect on physical activity behaviors of mothers

and their children.

No studies to date have examined the relationship between parent cognitions and

behaviors regarding physical activity and the acculturation environment, yet it is

recognized that these can play an important role in the frequency of physical activity.[334-336] In this study, Hispanic mothers living in a low acculturation environment tended to

place less value and importance on physical activity for themselves and their child than White mothers. These data suggest that acculturation environment and physical activity cognitions and behaviors are related, and that as mothers move into more acculturated environments, the differences are resolved.

Few studies have examined the relationship between acculturation environment and physical activity environment. In this study, Hispanic mothers living in low acculturation environment were less likely than Whites to have indoor/home, outdoor/yard, and neighborhood space and supports, and perceived their neighborhoods to be less safe. Between group differences were noted for two variables, where Hispanics in low acculturation environments had fewer outdoor/yard space and supports for physical activity and perceived their neighborhood as less safe than Hispanics in high acculturation environments. Individuals residing in immigrant enclaves tend to have fewer space and supports (i.e., fewer recreation facilities, less walkable) and live in neighborhoods perceived to be less safe than more acculturated areas.[459,465] However, when compared to Hispanics living in low density immigrant areas (n=51), those living in high density immigrant areas (n=98) did not differ significantly in their indoor, outdoor/yard, and neighborhood space and supports, however, they did perceive their neighborhood to be significantly less safe (data not shown). These data suggest that Hispanics living in low acculturation environments have less accessibility to physical activity and live in less safe environments compared to Whites and tend to live in less safe neighborhoods than their more acculturated counterparts. It is possible that the physical activity environment plays a greater role on parent's physical activity cognitions

than on their physical activity level, as mothers differed significantly only in their cognitions regarding physical activity.

The relationship between maternal and child screentime use and acculturation environment is unstudied. Although both groups of Hispanic mothers spent more time engaged in screentime than Whites, neither group significantly differed from than Whites. Additionally, mothers in this study did not significantly differ in the reported screentime of their children. These data suggest that the acculturation environment has limited effect on the amount of time that parents and their children spend engaged in screentime. Additionally, when compared to Hispanic mothers who perceived their neighborhood as less safe (n=78), Hispanic mothers who perceived their neighborhood as safe (n=71) reported similar screentime for themselves and their children (data not shown).

All mothers reported that their home environments were filled with sedentary media devices, with no significant differences found among Whites and Hispanics grouped by their acculturation environments. However, children of Hispanics living in low acculturation environments tended to have more media devices available in their room than Whites. In addition, Hispanics in a low acculturation environment reported that media devices were more accessible in their home than Whites. These data suggest that Hispanics living in a low acculturation environment tend to have media devices more readily available in their homes than Whites. It is likely that mothers in a low acculturation environment have more media devices due to a lack of other neighborhood amenities like parks and recreation facilities.[459,465]

The relationship between sleep and acculturation environment is not well understood. White and Hispanic mothers in this study met sleep recommendations, with no difference found between acculturation environments. Additionally, all mothers reported that they had OK sleep quality. These data suggest that the acculturation environment has a limited effect on sleep in Hispanics.

No study to date has examined the relationship between child sleep and acculturation environment. In this study, compared to children of Whites, few children of high acculturation Hispanics were meeting sleep recommendations (27% vs. 17%). However, all mothers reported that their children had good sleep quality, with no differences among children of Whites and Hispanics grouped by their acculturation environments. These data suggest that living in a high acculturation environment may have an effect on Hispanic children meeting sleep recommendations.

The relationship between diet and acculturation environment is currently unknown. All mothers in this study reported a similar intake of fruits and vegetables and dietary fiber and all mothers were close to meeting the USDA dietary guidelines for fruits and vegetables, having at least 4 servings daily. Studies have found that individuals living in immigrant enclaves and areas with language isolation tend to have healthier dietary habits, consuming more fruits and vegetables and fewer snacks.[178,450,459,465,467,468] When diet scores were compared for Hispanics living in high density immigrant areas (n=98) and those living in low density immigrant areas (n=51), mothers did not differ in their intake of fruits and vegetables (data not shown). These data suggest that the acculturation environment has limited effect on maternal diet.

Additionally, mothers reported a similarly low intake of sugar-sweetened beverages (<1 daily). With regard to their children, mothers reported that they had a similarly low intake of sugar-sweetened beverages and milk for their children. However, Hispanic mothers in a low acculturation environment reported that their children consumed more fruit and vegetable juice daily than children of Whites. It is possible that Hispanic mothers living in a low acculturation environment cannot differentiate between fruit drinks and fruit juice and therefore may be underreporting their child's intake of sugar sweetened beverages.[442] These data suggest that acculturation environment is not associated with maternal beverage intake but is associated with child beverage intake of fruit and vegetable juice.

Little is known about the relationship between acculturation environment and the home food environment. In this study, food environments were similar across study groups. These data suggest that acculturation environment does not influence the home food environment.

In this study, no significant differences were found for supermarket accessibility among Whites and Hispanics grouped by acculturation environment. Similarly, compared to Hispanic mothers living in high immigrant density areas (n=98), Hispanics in low density immigrant areas (n=51) reported similar accessibility to supermarkets. These data suggest that the acculturation environment does not influence supermarket accessibility.

The relationship between acculturation environment and feeding practices is currently unknown. Mothers in this study reported a similarly moderate use of healthy eating modeling, covert control of child feeding, and restriction over children's food choices and low use of food and non-food rewards during meals. However, Whites were

less likely to use overt control of child food intake than Hispanic mothers in a high acculturation environment and less likely to use pressure over their children's food choices than Hispanics mothers in a low acculturation environment. These data suggest that acculturation environment has limited effect on most maternal feeding practices.

It is unknown how the acculturation environment affects maternal and child eating behaviors. In this study, mothers exhibited similar eating behaviors, suggesting that eating behaviors are not affected by acculturation environment. Similarly, mothers reported similar eating behaviors for their children, suggesting that their eating behaviors are independent of acculturation environment.

The relationship between acculturation environment and family meal cognitions is understudied. In this study, all mothers reported similar cognitions regarding family meals, scoring moderate to high on all variables. These data suggest that the acculturation environment does not affect maternal cognitions regarding family meals and meal preparation.

Additionally, the effect of the acculturation environment on family meal frequency is unstudied. All mothers in this study reported similar meal frequency. These data suggest that family meal frequency is not affected by acculturation environment.

In this study, Hispanics in low acculturation environments tended to have more meals in unhealthy locations (i.e., in the car, at fast food restaurants, in front of the TV), used more media devices (e.g., tablet, video games, etc.) during meals, and had fewer meals in healthy locations than Whites. Between group differences were noted for Hispanics for two meal locations, where Hispanics in low acculturation environments had more meals in the car and fewer meals at the dining room table than Hispanics in high

acculturation environments. Additionally, areas with high proportion of immigrants tend to have a greater availability of fast food restaurants,[465] where Hispanics living in these areas tend to have more meals in unhealthy locations than those living in more acculturated neighborhoods.[459,469] When compared to Hispanics living in high density immigrant areas (n=98), those living in low density immigrant areas (n=51) tended to consume significantly more meals at the dining room table, however, no differences were noted in their consumption of family meals at unhealthy locations (i.e., fast food restaurants, in the car, in front of the TV) (data not shown). These data suggest that those living in a low acculturation environment are more likely to eat foods in unhealthy locations and less likely to eat in healthy locations.

It is unknown how the acculturation environment affects an individual's self-efficacy for participating in health behaviors. Mothers in this study reported similar self-efficacy for participating in healthy behaviors for themselves. However, Hispanics in low acculturation environments tended to have less self-efficacy for promoting obesity protective behaviors in children and child eating and weight management than Whites. These data suggest that Hispanic mothers living in a low acculturation environment have lower self-efficacy for promoting healthy behaviors to their children. Future nutrition education initiatives should focus on increasing maternal self-efficacy for promoting obesity protective behaviors in their children.

The effect of the acculturation environment on the psychographic characteristics studied are unknown. All mothers in this study reported moderate personal organization and confidence in parenting skills. Mothers reported that they had moderate perceived stress and low self-efficacy of stress management skills. The only variable that differed

by acculturation environment was that for need for cognition where Hispanics living in a low acculturation environment had a lower need for cognition compared to Whites. However, when compared to Hispanics living in a high immigrant density area (n=98), Hispanics living in a low immigrant density area (n=51) did not differ in their need for cognition. It may be that Hispanics in a low acculturation environment had lower need for cognition due to the increased pressure and stress associated with a low acculturation environment,[153,154,456-459] as these neighborhoods often are lower in socioeconomic status.[460]

Conclusions

The results of Research Question 2B discerning differences among Whites and Hispanics grouped by their acculturation environment highlight key differences in the weight-related characteristics of home environments of mothers and their children, especially between Whites and Hispanics in low acculturation environments. The fewer differences between Whites and Hispanics in a high acculturation environment than between Whites and Hispanics in a low acculturation environment suggests a possible role for the acculturation environment and its related effects (e.g., low socioeconomic neighborhoods, income level) in these differences.

Few studies have examined the relationship between acculturation environment and health. This study lends support to previous research that have examined differences in acculturation environment. Similar to previous research, this study found that those living in low acculturation environments tended to be of a lower socioeconomic status, and had children with a lower health status compared to other mothers.[456-461] In contrast to previous research, when compared to others, Hispanics living in a low acculturation environment had similar health status and depression severity,[420,461-464] had a similar

physical activity level for themselves and their child,[459,462,465,466] and had similar dietary intake.[178,450,459,465,467,468]

Most of what was studied in Research Question 2B is novel to the study of the acculturation environment. This study found that Hispanic mothers living in a low acculturation environment tended to place less value and importance on physical activity for themselves and their child and lived in environments that had fewer physical activity space and supports and were less safe than Whites. Additionally, although mothers reported similar amount of screentime for themselves and their children, Hispanic mothers in a low acculturation environment had greater availability of media devices in their child's bedroom and greater accessibility of media devices in their home. Although mothers did not differ in their home and neighborhood food environments, children of low acculturation Hispanics had greater intake of fruit and vegetable juice. Mothers had similar family meal cognitions and frequency of total meals; however, Hispanics in a low acculturation environment tended to have more meals in unhealthy locations and fewer meals in healthy locations than Whites. Although mothers similarly met sleep recommendations and reported good sleep quality for their children, children of high acculturation Hispanics were less likely to meet sleep recommendations.

Thus far, few studies have examined the relationship between the acculturation environment and weight-related behaviors. Many differences occurred between Whites and those living in a low acculturation environment, suggesting that acculturation environment may play a role in the weight-related home environment. This study offers unique findings that can further contribute to the understanding of how the process of acculturation affects health. However, it is still unclear as to whether personal

acculturation, environmental acculturation, or a combination of these factors is driving this process.

RESEARCH QUESTION 3

How do weight-related characteristics of home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) differ among White mothers and Hispanic mothers clustered by their combined acculturation measures?

This research question further examined the links between the combined effects of maternal personal and environmental acculturation on home environments with young children. This research question explored whether differences between White and Hispanic mothers were driven by a combination of personal and environmental acculturation. This research question also explored the notion that socioeconomic status may influence differences among acculturation groups by controlling for family affluence score using ANCOVA.

Hispanic Acculturation Clusters and Weight-Related Characteristics of the Home Environment

Hispanic mothers cluster into 3 groups based on the 6 acculturation characteristics measured (i.e., 3 personal acculturation [language of survey, language used in home, country of birth] and 3 census-tract based acculturation environment items [% foreign-born, % foreign-born arriving within 2010-2015, % Spanish-speaking households speaking English less than very well]). Mothers classified as least acculturated had low personal and low environmental acculturation (Cluster 1 [n=46]), somewhat acculturated mothers had high personal and low environmental acculturation (Cluster 2 [n=65]), and

most acculturated mothers had high personal and high environmental acculturation (Cluster 3 [n=38]).

The tendency for White and the most acculturated Hispanic mother cluster to have similar family affluence and education, coupled with the significant differences between these two groups and the two less acculturated clusters for family affluence, support previous research reporting that socioeconomic status increases with acculturation.[109,135,157,315,417,418,456-459] Lower family affluence among lesser acculturated mothers may be due to less accessibility to education and jobs due to environmental factors (e.g., accessibility to jobs and educational programs) or limits on potential for growth due to personal factors (e.g., language barrier, social networks) that have been reported by others.[456,470,471]

Although the health status of mothers did not differ in any comparisons, mothers in the two less acculturated clusters reported a significantly lower health status for their children than White mothers, even after controlling for family affluence score. These data suggest that acculturation level is linked to child health status, where child health status increases with increasing acculturation. This supports previous research indicating Hispanic mothers with lower acculturation tend to have children with poorer health[422,423] which could be related to having poorer access[472,473] to health care (e.g., insurance, facilities).

With regard to physical activity, the two less acculturated clusters tended to have the lowest physical activity cognitions, even after controlling for family affluence score, suggesting these cognitions increase as acculturation increases. The difference may be due to the fact that the most acculturated cluster lived in a more acculturated environment

with greater access to amenities that facilitate physical activity which may, in turn, improve related values and feelings. Indeed, the two less acculturated clusters had fewer indoor/home, outdoor/yard space, and neighborhood supports for physical activity than Whites. Although, differences only remained between Whites and the least acculturated cluster after controlling for family affluence score. The less acculturated clusters also reported living in less safe neighborhoods. These data suggest that physical activity environments improve as acculturation increases, perhaps due to improved socioeconomic status and greater ability to access more space and supports and safe areas for actively playing in the house and yard.[187,344,345,428-430,474]

Regarding the media environment, mothers reported that their home environments were replete with media devices, however the least acculturated cluster had significantly, though slightly, fewer total media devices (about 9 vs. 11 to 12) in their homes than all other groups. Despite fewer devices available in the home, the least acculturated cluster did not differ from the other clusters in availability of devices in children's bedrooms or children's access to media equipment in the home. Media devices can contribute to the process of acculturation[437,438] (e.g., teaching the prevailing language, cultural norms) and provide a means of entertainment in less safe neighborhoods[475-477] which may account for the small differences in total home media devices.

Although mothers themselves had similar dietary intake, they reported significant differences in their children's beverage intake. Children of least acculturated Hispanic mothers had intakes of sugar-sweetened beverages similar to Whites, with the more acculturated clusters being higher. In contrast, the intake of 100% fruit juice was the opposite—that is, children of White mothers and somewhat acculturated and acculturated

Hispanic mother clusters consumed less of this beverage than the least acculturated group. It is possible that low acculturation mothers did not understand the difference between juice and fruit flavored sugar-sweetened beverages which often feature pictures of fruit on the label and can lead to confusion regarding the content of the product;[478] this may have led to over-reporting of juice intake and underreporting of sugar-sweetened beverages.[442]

In contrast to previous research that suggests that maternal acculturation only influences child intake of sugar-sweetened beverages,[441] data from this study indicate that children's beverage intake of milk and juice also seems to be influenced by maternal acculturation, with the intake of milk increasing and juice decreasing as mothers become more acculturated. Additionally, given that the least acculturated Hispanic mothers had a lower socioeconomic status than other mothers, it is possible that they were more likely to participate in WIC and therefore had greater access to juice from WIC benefits. ; however, since WIC participants[479] tend to report higher intakes of juice and soda than non-WIC participants, but a similar intake of milk for their children; however, these trends were not consistently seen in this sample. After controlling for family affluence score, all significant between-group differences remained, suggesting that the differences were linked to acculturation level independent of affluence level.

Few differences in maternal feeding practices were noted. The most notable was that the least acculturated cluster tended to use covert control of intake less than all other mothers—these differences persisted even after controlling for family affluence score. These data suggest that few parental feeding practices are affected by acculturation. It

may be that low acculturation mothers have home food environments with limited resources and mothers may use covert ways to control the food supply in their homes.[480]

The least acculturated mothers reported less frequent family meals than the most acculturated and White mothers. Similarly, the least acculturated mothers reported the frequency of meals eaten at less healthy locations was about twice as frequent as White and other Hispanic mothers. After controlling for family affluence score, all between group differences remained the same when comparing the least acculturated mothers to other groups. These data suggest that frequency of meals at less healthy locations decreases and meals at healthy locations increases with acculturation. This may be in response to the changes (i.e., work schedule, job type, income level) [29,151,470,471] individuals undergo as they move through process of acculturation where, in the early stages, consuming quick meals may be an easier option. Additionally, low acculturation Hispanics may have fewer space and supports for food access, safe food storage and preparation in their home environments, leading to more frequent meals outside of the home.

Conclusions

The results of Research Question 3 discerning differences among Whites and Hispanic acculturation cluster groups highlight key differences in the intrapersonal, interpersonal, and home environments of mothers and their young children. When parsed into the three acculturation clusters, several differences were noted among White and the two less acculturated clusters. Few differences were noted between Whites and the most acculturated cluster, suggesting that as acculturation increases, weight-related behaviors improve. However, it is still unclear whether this relationship is modulated by

socioeconomic status, as low acculturation Hispanics tend to have a lower socioeconomic status.

Additional analyses using ANCOVA, controlling for family affluence, found similar differences between most variables measured among the groups of mothers, supporting the idea that acculturation, independent of socioeconomic status, influences the weight-related home environment. Most of the differences between analyses that controlled for affluence and those that did not were loss of significance in a few parent and child intrapersonal factors (i.e., importance of modeling physical activity, child sleep length), intrapersonal factors (i.e., family meal frequency), and environmental factors (i.e., neighborhood space and supports for physical activity, and media device availability in the home). The main differences were mostly between Whites and the somewhat acculturated cluster, with differences losing significance for some aspects of family mealtime (i.e., total meal frequency in unhealthy locations, meal frequency at the kitchen table). This suggests that differences between Whites and somewhat acculturated Hispanics may be influenced by socioeconomic status; however, differences between Whites and the least acculturated Hispanic cluster are likely due to acculturation alone. This study supports previous findings[109,135,157,187,315,344,345,417,418,422,423,428-430,456-459,474] and demonstrates the influence of both personal and environmental factors of acculturation, independent of family affluence, on home environments of mothers with young children.

OVERALL CONCLUSIONS

Study finding support previous research,[34,481] indicating many differences exist between White and Hispanic mothers in relation to their weight-related home environments, including maternal intrapersonal (i.e., socioeconomic status, depression

severity, physical activity cognitions, food adventurousness, use of pressure for child to eat, self-efficacy for obesity protective behaviors in children and child eating and weight management, and need for cognition), child intrapersonal (i.e., health status and fruit and vegetable juice intake), interpersonal (i.e., family meal behaviors), and physical environment (i.e., physical activity space and supports, media equipment availability, and children's access to media devices) characteristics. Yet, the contribution of acculturation to these differences remains underreported in the literature.

Further examination of the differences in White and Hispanic mothers in this study revealed differences in the weight-related home environment by personal acculturation, environmental acculturation, and combined personal and environmental acculturation. Both low and high personal acculturation Hispanic mothers differed from Whites on many characteristics, including maternal intrapersonal, child intrapersonal, interpersonal, and environmental factors—but few differences occurred when low and high personal acculturation Hispanic mothers were compared suggesting that differences observed may be cultural differences between Whites and Hispanics and not personal acculturation.

To further examine acculturation and extend the common view of acculturation beyond personal characteristics, the role of acculturation environment was considered. More than half (52%) of mothers having high personal acculturation moved into the low acculturation group when environmental variables were considered (Table 35). Low acculturation environment mothers consistently differed from White and the high acculturation environment mothers in all aspects of their home environments (i.e., maternal and child intrapersonal, interpersonal, and physical environmental

Table 35: Shifting of Acculturation Grouping from Personal Acculturation to Acculturation Environment (N=149)

Characteristics	Personal Acculturation	
	High Acculturation (n=95)	Low Acculturation (n=54)
Acculturation Environment		
High acculturation (n=21)	17	4
Low acculturation (n=128)	78	50

characteristics). Findings suggest that the acculturation environment is linked to the weight-related home environment.

To determine whether the combined personal acculturation and environmental acculturation variables were linked to aspects of mothers' home environment, the variables measuring both personal and environmental were combined and cluster analyzed. Three clusters of Hispanic mothers emerged—least, somewhat, and most acculturated mothers. The cluster analysis revealed numerous differences in the home environments of White mothers and the least acculturated Hispanic mothers. Many of these same differences were noted between White and somewhat acculturated Hispanic mothers, whereas few differences were noted between the White and high acculturation mothers. The observed links tended to remain significant when controlling for affluence between Whites and the least acculturated group, but not between Whites and the somewhat acculturated group.

A comparison of the three acculturation measures (Table 36) found several consistent differences in the home environments of mothers. Regarding maternal intrapersonal factors, White and the low acculturation mothers—regardless of the type of acculturation grouping method—had differed in their physical activity cognitions, self-efficacy for obesity protective behaviors and for child eating and weight management; and need for cognition. In contrast, Whites and high acculturation mothers differed consistently on only one intrapersonal measure—use of pressure for child to eat. Compared to White mothers, regardless of acculturation grouping method, low acculturation mothers consistently reported differences in their children's intrapersonal

Table 36: Comparison of Significant Differences Found in Three Acculturation Measures

Characteristic	Significant differences between groups in Personal Acculturation:			Significant differences between groups in Acculturation Environment:			Significant differences between groups in Acculturation Clustering:					
	White and low PA Hispanic	White and high PA Hispanic	High and low PA Hispanic	White and low EA Hispanic	White and high EA Hispanic	High and low EA Hispanic	White and Cluster 1	White and Cluster 2	White and Cluster 3	Cluster 1 and Cluster 2	Cluster 1 and Cluster 3	Cluster 2 and Cluster 3
Socioeconomic Status												
Maternal Education	X	X		X		X	X	X			X	
Hours of Employment	X	X	X				X			X	X	
Marital Status		X		X				X				
Family Affluence Score	X			X			X	X			X	
Food Insecurity Risk												
Environmental Health Capital												
Health												
Parent Health Status												
Depression Severity												
Health-Related Quality of Life												
Child Health Status												
Child Health Status	X	X		X	X		X*	X*				
Child Quality of Life												
Physical Activity												
Maternal Physical Activity												
Child Physical Activity												
Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use												
Value Placed on Physical Activity for Self[5]												
Value Placed on Physical Activity for Child[3]	X	X		X			X*	X*				
Encouragement and Facilitation of Physical Activity[3]	X	X		X			X*	X*				
Importance of Modeling Physical Activity[3]	X	X		X			X	X				
Importance of Not Modeling Sedentary Behavior[3]												
Mother and Child Co-Physical Activity Frequency days/week	X	X		X			X*					
Modeling Physical Activity days/week												
Modeling Sedentary Behavior days/week		X										
Home Opportunities for Physical Activity Check-UP												
Indoor/Home Space and Supports for Physical Activity	X			X			X*					
Outdoor/Yard Space and Supports for Physical Activity	X		X	X		X	X*			X*	X	
Neighborhood Space and Supports for Physical Activity	X	X		X			X	X				
Neighborhood Environment Safety	X	X		X		X	X*	X*			X*	X
Frequency of Active Outdoor Play												

Table 36 continued: Comparison of Significant Differences Found in Three Acculturation Measures

Characteristic	Significant differences between groups in Personal Acculturation:			Significant differences between groups in Acculturation Environment:			Significant differences between groups in Acculturation Clustering:					
	White and low PA Hispanic	White and high PA Hispanic	High and low PA Hispanic	White and low EA Hispanic	White and high EA Hispanic	High and low EA Hispanic	White and Cluster 1	White and Cluster 2	White and Cluster 3	Cluster 1 and Cluster 2	Cluster 1 and Cluster 3	Cluster 2 and Cluster 3
Screentime												
Maternal Screentime (minutes/day)		X		X								
Child Screentime (minutes/day)												
Sedentary Screentime Environment												
Media Equipment Availability in the Home	X		X				X			X	X	
Media Equipment Availability in the Child's Bedroom		X		X				X*				
Media Equipment Accessibility		X		X					X*			
Minutes of Screentime Child Allowed per Day												
Minutes of Time the TV is on Daily with No One Watching												
Sleep												
Maternal Sleep Time and Quality												
Sleep Time (hours/day)		X	X									
Sleep Quality												
Child Sleep Time and Quality												
Child Met Sleep Recommendations		X			X							
Sleep Quality												
Diet Related Behaviors and Environment												
Maternal Dietary Intake												
Fruit and Vegetable (servings/day)												
Dietary Fiber (grams/day)												
Sugar-Sweetened Beverages (servings/day)												
Child Beverage Intake												
Sugar-Sweetened Beverages (servings/day)		X	X					X*		X*		
Milk (servings/day)	X						X*			X*		
100% Fruit Juice (servings/day)	X		X	X			X*				X*	
Vegetable Juice (servings/day)	X	X	X	X			X*			X*	X*	
Household Food Availability												
Fruit/Vegetables (servings/person/day)												
Sugar-Sweetened Beverages (servings/person/day)												
High Energy/Low Nutrient Snacks (servings/person/day)												
Household Food Accessibility												
Child Access to Nutrient Poor Foods												
Child Access to Nutrient Dense Foods												
Child Food Access Policy to Nutrient Poor Foods		X		X								

Table 36 continued: Comparison of Significant Differences Found in Three Acculturation Measures

Characteristic	Significant differences between groups in Personal Acculturation:			Significant differences between groups in Acculturation Environment:			Significant differences between groups in Acculturation Clustering:					
	White and low PA Hispanic	White and high PA Hispanic	High and low PA Hispanic	White and low EA Hispanic	White and high EA Hispanic	High and low EA Hispanic	White and Cluster 1	White and Cluster 2	White and Cluster 3	Cluster 1 and Cluster 2	Cluster 1 and Cluster 3	Cluster 2 and Cluster 3
Diet Related Behaviors and Environment, Continued												
Child Food Access Policy to Nutrient Dense Foods		X		X								
Supermarket Accessibility												
Maternal Feeding Practices												
Healthy Eating Modeling		X										
Use of Food Rewards During Meals												
Use of Non-Food Rewards During Meals												
Overt Control of Intake												
Covert Control of Intake	X		X				X*			X*	X*	
Pressures Child to Eat		X		X	X				X*			
Restricts Child Food Choices												
Eating Behaviors												
Maternal Eating Behaviors												
Disinhibited Eating												
Emotional Eating												
Dietary Restraint												
Food Adventurousness												
Child Eating Behaviors												
Food Neophobia												
Emotional Eating												
Self-Regulation												
Family Meal Cognitions and Behaviors												
Family Meal Cognitions												
Importance Placed on Family Meals												
Family Meal Atmosphere												
Family Meal Planning												
Effort of Cooking												
Time and Energy for Family Meals												
Meal Preparation Self-Efficacy												
Family Meal Behaviors												
Family Meal Frequency/Week	X						X				X	
Unhealthy Meal Location	X	X	X	X			X*	X		X*	X*	
In the Car	X		X	X			X*			X*	X*	
At Fast Food Restaurant	X	X		X		X	X*	X*	X*			
In Front of TV	X	X		X			X*					
At Dining Room Table	X		X	X		X	X*	X		X*	X*	X*

Table 36 continued: Comparison of Significant Differences Found in Three Acculturation Measures

Characteristic	Significant differences between groups in Personal Acculturation:			Significant differences between groups in Acculturation Environment:			Significant differences between groups in Acculturation Clustering:					
	White and low PA Hispanic	White and high PA Hispanic	High and low PA Hispanic	White and low EA Hispanic	White and high EA Hispanic	High and low EA Hispanic	White and Cluster 1	White and Cluster 2	White and Cluster 3	Cluster 1 and Cluster 2	Cluster 1 and Cluster 3	Cluster 2 and Cluster 3
Family Meal Cognitions and Behaviors, Continued												
Family Meal Behaviors, Continued												
Media Use During Meals												
Frequency/Week												
Media Use (TV)												
Media Use (Tablet, Video Games, etc.)		X		X				X*	X*			
Self-Efficacy for Promoting Healthy Behaviors												
Obesity Protective Behaviors in Children	X	X		X			X*					
Child Eating and Weight Management	X	X		X			X*					
Child Physical Activity												
Parent Health Behaviors												
Psychographic Characteristics												
Personal Organization												
Need for Cognition	X			X			X					
Confidence in Parenting Skills												
Perceived Stress												
Self-Efficacy of Stress Management												

X Indicates a significant difference between groups found in the Tukey post-hoc tests of the ANOVA.

*Indicates a significant difference between groups found in the Bonferroni post-hoc tests of the ANCOVA

measures of health status and fruit and vegetable juice intake. Interpersonal differences were limited to family meal behaviors; mothers classified as low acculturation, regardless of acculturation grouping method used, and had more meals weekly in unhealthy meal locations and fewer at the dining room table than White mothers. Differences in physical activity environments also were consistent for low acculturation mothers and White mothers across the three acculturation grouping methods—for instance, low acculturation mothers lived in environments with fewer physical activity space and supports.

An examination of how the three acculturation measures changed the grouping of mothers (Table 37) found that 39% of mothers remained stable; they had no change in their high (11%) or low (28%) acculturation. In some instances, personal acculturation outweighed acculturation environment in the final cluster, with 3% mothers retaining their low personal acculturation classification in the clustering despite a high acculturation environment score and 14% retained their high personal acculturation despite a low acculturation environment score—masking the contribution of the acculturation environment. Personal acculturation predicted the final cluster for 56% of mothers—including, mothers who had no change in their acculturation score (n=59), and mother's whose personal acculturation outweighed their acculturation environment score (n=25). Although the acculturation environment never outweighed personal acculturation, it did lead to an "averaged" cluster score, for 38% of mothers who had a high personal acculturation score and low acculturation environment and for 5% of mothers who had a cumulative change, where they progressed from the low personal acculturation and low acculturation environment groups to the somewhat acculturated group. For a little more than half of the mothers (56%), personal acculturation predicted their final

Table 37: Transition of Mothers Across Three Acculturation Measures (N=149)

Personal Acculturation Group	Acculturation Environment Group	Acculturation Cluster Group	N (%)	Description of Change
Low	Low	Least	42 (28%)	No change
Low	Low	Somewhat	8 (5%)	Cumulative change (low+low)/2=moderate change
Low	High	Least	4 (3%)	Personal acculturation outweighed Acculturation environment (low Personal acculturation, stayed low in cluster analysis signifying the acculturation environment had little effect)
High	Low	Somewhat	57 (38%)	Average change (high+low)/2=moderate
High	Low	Most	21 (14%)	Personal acculturation outweighed the acculturation environment (high personal acculturation, stayed high in cluster analysis signifying the acculturation environment had little effect)
High	High	Most	17 (11%)	No change

acculturation cluster, however, for the other half, personal acculturation was not been enough to clearly describe their acculturation. Acculturation environment predicted the final cluster for 83% of mothers, demonstrating the importance of the acculturation environment—this includes mothers who had no change in their acculturation score (n=59), mothers with a cumulative change (n=8), and mothers who had an average change (n=57). These data suggest that personal acculturation alone may not be enough to discern differences associated with acculturation—thus, the finding of this study suggest it is important to consider the synergistic effect of both personal and environmental acculturation.

This study lends support to the idea that health disparities observed in Hispanics audiences residing in the U.S. may be related to acculturation, independent of socioeconomic status. Additionally, it highlights that the concept of acculturation may encompass more than language use and includes acculturation-related variables in the neighborhood environment. The comparison of all three methods of acculturation grouping shows that both personal acculturation and the acculturation environment should be considered when exploring differences that exist in weight-related aspects of the home environments. In specific, when comprehensively studying the home environment, it is important to consider intrapersonal, interpersonal, and environmental characteristics—personal acculturation is definitely an important factor to consider when looking into these characteristics, but the acculturation environment also appears to be an important contributor. The findings of this study suggest an interplay between personal and environmental acculturation occurs when investigating the characteristics of the

home environment, thus using both personal and environmental variables should be included when studying the effects of acculturation.

LIMITATIONS AND STRENGTHS

Limitations of this study must be considered when examining the findings. First, the study, like all human research, is limited by participant self-selection. However, to mitigate this, the recruitment materials were written using neutral language to encourage parents to sign up for a program to "raise happier, healthier, safer families" to try to lessen self-selection bias.

This study was limited to mothers. Findings cannot be extended to fathers given the research[300] that suggests that fathers have differing weight-related cognitions and behaviors, thus future research should investigate how acculturation affects these as well as how mother:father dyads with differing levels of acculturation affect the home environment.

Additionally, results are mixed with regard to the relationship between race/ethnicity and paternal involvement with children,[482-484] as well as the relationship between race/ethnicity and paternal engagement in weight-related activities, like physical activity.[482,485] Considering the cultural importance of family-related values, like *familismo*[105,154-157] and *respeto,*[154-157] and gender norms, like *machismo*,[154-157] for Hispanics, fathers may play an important role in the development of the weight-related environment for Hispanics of varying acculturation levels.[486] As the relationship is unclear for fathers, future research should consider the role that gender plays in the relationship between acculturation and the weight-related environment

Differences in child gender, age, and family size may also contribute to weight-related aspects of the home environment. For instance, mothers may parent boys and girls differently, this is especially true among Hispanic parents considering traditional cultural gender norms, which may be further augmented among lower acculturation groups[487] In addition, the study sample had children ranging in between 2 and 9 years—weight-related behaviors and parenting practices likely differ between the younger and older children. Parents who have a larger family are likely to have different weight-related environments than parents with smaller families for numerous reasons, including financial and cultural. The differences that may arise because of child sex, child age, and/or number of children in the home were beyond the scope of this study but warrant future investigation.

The cross-sectional nature of this study can be used only to identify associations among variables. This single snapshot of differences among race/ethnicity and acculturation warrant longitudinal studies to determine if the differences noted in this study do change over time as acculturation level increase. Some associations found among racial/ethnic and acculturation groups, may be related to interactions with other variables. For example, mothers may have fewer space and supports for physical activity because they cannot afford a home with these supports and may have to temper their cognitions to avoid feelings of guilt—or it may be that mothers who are less concerned with physical activity do not take action to provide supports and space for home physical activity environment. However, both physical activity cognitions and the physical activity environment were associated with acculturation, even after controlling for family affluence score.

Regarding racial/ethnic groups, there were few Black and Asian respondents, making it difficult to do further analyses with these groups. Future research should work to improve recruitment to these minorities, especially considering the projected growth of Asians in the United States, to better understand acculturation-based differences in this group and how it compares to the findings with Hispanic mothers in this study. Additionally, within the Hispanic population, most mothers reported that they were of Mexican origin, with little representation from other groups. A valuable contribution of future research would be to recruit a more diverse sample of the Hispanic population as country of origin may impact weight-related cognitions, behaviors, and home environments in different ways.

The measures of personal acculturation in this study were limited to proxy variables based on language use and country of origin. This may limit the scope of understanding regarding the degree of acculturation of participants, however, psychometric evaluations of more complex acculturation scales have found that single indicator items of language use often suffice in predicting acculturation.[158,163,164] Moreover, the findings of this study are consistent with previous research indicating the personal acculturation variables were appropriate for categorizing participants. The role that acculturation plays on weight-related home environment is greatly influenced by country of origin.[58,85,116,150] Most mothers in this study reported that they were of Mexican origin, which may have affected the results of this study. Future research should try to recruit parents from diverse countries of origins to identify differences based on country of origin.

Mothers surveyed had a moderate socioeconomic status, with most being food secure with moderate family affluence and a moderate education level. Their moderate socioeconomic status may be both a strength and a limitation. It may be masking some of the differences that are traditionally seen regarding maternal race/ethnicity, however, at the same time it allows researchers to see differences that appear even when socioeconomic status is consistent. It is important, however, to recruit participants of diverse socioeconomic status to truly understand its confounding effect among racial/ethnic and acculturation-based differences. Additionally, it is important to re-examine the measure of socioeconomic status used in this study, that is the Family Affluence Scale[244,245]—although it is widely used throughout the world and has been found to be a reliable indicator [488-491], it may not be sensitive enough to parse out differences in socioeconomic status among U.S. residents. It is therefore important to consider using alternate measures of socioeconomic status to increase sensitivity.

Despite the study limitations, this study has many strengths. This is the first study to comprehensively examine the relationship between race/ethnicity, Hispanic acculturation, and the weight-related home environment of mothers with young children. Findings from this study give insight into how race and acculturation are linked to differences in the weight-related home environment may contribute to understanding how they may be linked to health disparities.

The survey itself was a strength in that was easily administered online and could be completed privately at the participant's leisure. The survey was comprised of on valid and reliable scales.[23,236] Additionally, the survey used strategies to maintain participant engagement (i.e., pictures, colors) and attention (i.e., grouping similar questions) and

reduce participant burden (e.g., arrangement and presentation of items). The survey also was offered in both English and Spanish to increase the likelihood that less acculturated Hispanic mothers would participate. The study had a large sample size, was relatively heterogeneous, and attracted a greater proportion of Hispanic participants than normally found in nutrition studies.[492] The survey data was systematically reviewed and cleaned to ensure that the data set was accurate and therefore represents a true picture of the weight-related home environment.

This study is the first known to comprehensively study the relationship between acculturation and the weight-related home environments of mothers with young children. Additionally, the use of measures of the personal acculturation, acculturation environment, and both combined, provides a unique perspective to this study, with acculturation environment being particular noteworthy in its contribution to this understudied component of acculturation. As acculturation is often difficult to measure, it is important to consider how some of these concrete environmental factors may affect individual's acculturation level, in addition to the use of traditional personal acculturation items. The use of clustering to combine the personal and environmental acculturation scores was novel and demonstrated the importance of considering both of personal and environmental acculturation factors when studying acculturation. Finally, controlling for family affluence score was an additional strength of this study as it helped to clarify whether differences could be attributed to acculturation or the result of socioeconomic status. When controlling for family affluence, most of the significant differences originally found remained, suggesting that acculturation, independent of socioeconomic status, accounted for the observed differences.

In conclusion, the findings of this study indicate that that are many differences in the weight-related home environments (i.e., maternal and child intrapersonal [psychographic, behavioral], household interpersonal, and physical environment characteristics) of White and Hispanic mothers—these differences in part may be due to acculturation. The links noted between maternal acculturation and weight-related characteristics of the home environment tended to persist regardless of whether Hispanic mothers were grouped by personal acculturation variables alone, acculturation environmental variables alone, or both personal and environment acculturation variables combined. Most observed acculturation related links were independent of socioeconomic status. To advance our understanding of the links among Hispanic acculturation and other health behaviors, it is important to consider personal acculturation, the acculturation environment, and the combined effect of both. Clarifying how acculturation is linked to health behaviors, can inform the development of nutrition education and health promotion intervention materials that are more tailored, resonating, and perhaps more motivating, to Hispanic audiences and thereby contribute to the reduction of health disparities that are so prevalent in this population.

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APPENDIX A

SURVEY ITEMS AND SCORING PROTOCOL

MATERNAL INTRAPERSONAL CHARACTERISTICS

Intrapersonal characteristics include demographics and characteristics that relate to knowledge, attitudes, perceptions, values, belief systems, and behavior. Intrapersonal characteristics of the mother in this study include demographic characteristics, family affluence and environmental health capital, food insecurity, acculturation (personal and environmental), home food gatekeeper, weight status, health status, physical activity score, screentime, behavior modeling and encouragement of physical activity and media use, sleep time and quality, dietary intake, eating behaviors, feeding practices, outcome expectations for healthy behaviors, self-efficacy for promoting healthy behaviors, and psychographic characteristics.

Maternal Demographic Characteristics

This section assesses demographic characteristics of the child's mother.

1. What is your ethnicity/race? (Check all that apply)

2. What is your highest level of education?

3. How many hours of paid employment do you usually have each week?

4. What is your current relationship status?

5. What state do you live in?

6. What is your age?

7. What country were you born?

Items 1-11: Answer Choices and Scoring Methodology

Answer Choices for Item 1: Hispanic, Latino, or Spanish (Blank, Yes); White (Blank, Yes); Black or African American (Blank, Yes); American Indian or Alaskan Native (Blank, Yes); Asian, e.g., Japanese, Chinese, Korean (Blank, Yes); Pacific Islander (Blank, Yes); Other, please specify (Blank, Yes)

Answer Choices for Item 2: Less than high school, high school, some college, associate degree/technical school graduate, baccalaureate degree, advanced degree, other

Answer Choices for Item 3: 0 hours, 1 to 9 hours, 10 to 19 hours, 20 to 29 hours, 30 to 39 hours, 40 hours, more than 40 hours

Answer Choices for Item 4: Single and never married, single and living with partner, married, divorced, widowed

Answer Choices for Item 5: Alphabetical state list

Answer Choices for Item 6: Younger than 17, 18, 19, …., 44, 45, 46 or older

Answer Choices for Item 7: United States, South America, Caribbean Islands, Europe, Asia, Middle East, Africa, Central America, Canada

1. Raw data for item 1 are assigned values based on the response: Blank=no, 1=yes; if other was selected, participants had to write in a response.

2. Raw data for item 2 are assigned values of 1-6 based on the response: Less than high school=1, high school=2, some college=3, associate degree/technical school graduate=4, baccalaureate degree=5, advanced degree=6, other=7/write in

3. Raw data for item 3 are assigned values of 1-7 based on the response: 0 hours=1, 1 to 9 hours=2, 10 to 19 hours=3, 20 to 29 hours=4, 30 to 39 hours=5, 40 hours=6, more than 40 hours=7

4. Raw data for item 4 are assigned values of 1-5 based on the response: single and never married=1, single and living with partner=2, married=3, divorced=4, widowed=5.

5. Raw data for item 5 are assigned values of 1 to 50 based on their alphabetical order (e.g., AZ=3, NJ =30).

6. Raw data for item 6 are assigned values of 17 to 46 based on the response: Younger than 18=17, 18=18, 19=19, …., 44=44, 45=45, 46 or older=46.

7. Raw data for item 7 are assigned values of 1-9 based on the response: United States=1, South America=2, Caribbean Islands=3, Europe=4, Asia=5, Middle East=6, Africa=7, Central America=8, Canada=9

8. Items describe the demographic characteristics of the mother.

Family Affluence and Environmental Health Capital

This section assesses family affluence and environmental health capital. This section includes the 4-item Family Affluence Scale and utilizes zip code data to assess median income of the family.

<u>**Scale 1: Family Affluence Scale**</u>

1. How many cars, vans, or trucks does your family own?

2. How many times did you travel away on vacation with your family during the past 12 months?

3. Do you have your own bedroom (for just you, or you and your partner/spouse)?

4. How many computers/laptops are in your home?

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices for Item 1: 0, 1, 2 or more

Answer Choices for Item 2: Never, 1 time, 2 times, 3 or more times

Answer Choices for Item 3: Yes, no

Answer Choices for Item 4: 0, 1, 2, 3 or more

1. Raw data for Item 1 are assigned values of 0-2 based on the response: 0=0, 1=1, 2 or more=2.

2. Raw data for Item 2 are assigned values of 0-3 based on the response: Never=0, 1 time=1, 2 times=2, 3 or more times=3.

3. Raw data for Item 3 are assigned values of 0-1 based on the response: Yes=1, no=0.

4. Raw data for Item 4 are assigned values of 0-3 based on the response: 0=0, 1=1, 2=2, 3 or more=3.

5. The total number of points from the 4 items summed for a total score range of 0-9. Higher scores are a proxy for greater family affluence.

Scale 2: Environmental Health Capital

1. What is your zip code?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Write-In

1. Raw data for median household income are obtained for zip codes throughout New Jersey and Arizona.

2. Means and standard deviations are calculated for the household income, number of supermarkets, population density, and percent owner occupied housing for each state.

3. Scores were calculated by awarding 1 point to each variable when the value was at or above the median threshold for the participant's state of residence and 0 points if the value was below the median threshold.

4. Total scores are calculated by summing the individual scores with a total score range of 0-4. The environmental health capital scores are categorized as low (0 to 1), middle (2 to 3) and high (3 to 4) environmental health capital. Higher scores indicate that the participant lives in an area that has a higher environmental health capital.

Food Insecurity

This 2-item scale assesses the food insecurity of the family. The scale was developed by Hager et al.[246]

1. In the last year, I worried about whether our food would run out before we got money to buy more.

2. In the last year, the food I bought just didn't last and we didn't have money to get more.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Definitely false, mostly false, mostly true, definitely true

1. Raw data are assigned values of 1-5 based on the response: definitely false=1, mostly false=2, mostly true=3, definitely true=4.

2. Scores are averaged to create an overall score. Higher score indicates greater food insecurity.

Home Food Gatekeeper

This 1-item scale is to describe who makes the decisions regarding the food available and served in the home. This item was created *de novo*.

1. In my family, who makes most of the decisions about which foods to buy and serve at meals?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Me, my partner/spouse, my kids, someone else (please specify)

1. Raw data are assigned values of 1-4 based on the response: me=1, my partner/spouse=2, my kids=3, someone else (please specify)=4/write-in.

2. Item describes the decision maker of the food available and served in the household.

Acculturation

This section includes two scales to measure personal and acculturation environment using proxy variables and census tract data, respectively. Proxy variables have been shown to be useful in estimating the level of personal acculturation compared to lengthier scales. Census tract data can be used to give researchers insight into the acculturation environment where the participant lives by creating an area-based proxy.

Scale 1: Personal Acculturation

1. Do you prefer to complete this in English or Spanish?

2. What language do you speak at home?

3. What country were you born in?

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: English, Spanish

Answer Choices: English, Spanish, Other

Answer Choices: United States, South America, Caribbean Islands, Europe, Asia, Middle East, Africa, Central America, Canada

1. Raw data for item 1 are assigned values of 1 to 2 based on the response: English=0, Spanish=1.

2. Raw data for item 2 are assigned values of 1 to 2 based on the response: English=0, Spanish=1

3. Raw data for item 3 are assigned values of 1 to 3 based on the response: United States=0, Non-U.S. Country=1.

4. Scores are summed and have a range of 3 to 6. Higher scores indicate lower acculturation.

Scale 2: Acculturation Environment

1. What is your zip code?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Write-In

1. Zip codes are geocoded to their corresponding census tract.

2. Raw data for 1) % foreign-born individuals 2) % foreign-born individuals arriving within the years 2010-2015 and 3) % Spanish-speaking households who report speaking English less than very well are obtained for the census tracts throughout New Jersey and Arizona.

3. The median threshold for each state (NJ and AZ) were obtained. For each of the two items, participants are awarded 0 points if the value was below the median threshold for their state and a score of 1 if the value was at or above the median threshold for their state.

4. The two items are summed with a range of 0 to 2. Higher scores indicate that the participant lives in an area that is less acculturated.

Maternal Weight Status

This section assesses maternal weight status.

1. What is your height?

2. How much do you weigh?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices for Item 1: Write-in, feet and inches

Answer Choices for Item 2: Write-in, pounds

1. Using self-report measured height and weight data was entered in the following equation to calculate BMI: (weight in pounds x 703)/(height in inches squared).

2. Only participants with BMI of 12 and higher were included in the analyses to remove outliers that were biologically implausible.

3. Participants were reclassified as: underweight=1, normal weight=2, overweight=3, obese (BMI 30-34.9)=4, obese (BMI>35)=5.

4. Participants could be classified as non-overweight=0, overweight/obese=1.

5. Participants could be classified as under or normal weight=1, overweight=2, obese (BMI 30-34.9)=3, obese (BMI>35)=4.

Maternal Health Status

This section describes the depression severity, and health-related quality of life of the mother. This section includes 3 scales.

<u>Scale 1: Depression Severity</u>

1. In the last 2 weeks, how often did you have little interest or pleasure in doing things?

2. In the last 2 weeks, how often did you feel down, depressed, or hopeless?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Not at all, several days, more than half the days, nearly every day

1. Raw data are assigned values of 1-4 based on the response: not at all=1, several days=2, more than half the days=3, nearly every day=4.

2. The 2 items are averaged for an overall score. Higher scores indicate greater depression severity.

<u>Scale 2: Health-Related Quality of Life</u>

1. How would you rate your general health?

2. Think about your physical health, which includes physical illness and injury. During the past 30 days, how many days was your physical health not good?

3. Think about your mental health, which includes stress, depression, and problems with emotions. During the past 30 days, how many days was your mental health not good?

4. During the past 30 days, about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices for Item 1: Excellent, very good, good, fair, poor

Answer Choices for Items 2-4: 0 days, 1 day, …, 30 days

1. Raw data for Item 1are assigned values of 1-5 based on the response: excellent=5, very good=4, good=3, fair=2, poor=1.

2. Higher scores for item 1 indicate mothers rate their health status as being better.

3. Raw data for Items 2-4 are assigned values of 0-30 based on the response: 0 days=0, 1 day=1…, 30 days=30.

4. Items 2 to 4 are averaged for an overall score. Higher scores indicate the mother perceives their quality of life (physical and mental) to be better.

Maternal Physical Activity and Screentime

This section assesses the maternal physical activity level, maternal screentime, and maternal typical mode of transportation. This section includes 3 scales.

Scale 1: Maternal Physical Activity Level

1. In the past week, how many days did you walk for at least 10 minutes at a time?

2. In the past week, how many days did you do heavy physical activity? Heavy physical activity includes things like running, fast bicycling, aerobics, digging, or chopping wood.

3. In the past week, how many days did you do moderate physical activity? Moderate physical activity includes things like bicycling at regular speed, sweeping, vacuuming the floor, ranking leaves, or washing windows.

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: 0, 1, 2, 3, 4, 5, 6, 7

1. Raw data are assigned values of 0 to 7 based on the response: 0=0, 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7.

2. A score is calculated by using the following formula

3. Physical activity = (# of days of vigorous activities per week x 3) + (# of days of moderate activities x 2) + (# of days of walking 10 minutes at a time)

4. The score ranges between 0-42. Higher scores indicate that the mother participates more frequently in physically active.

Scale 2: Maternal Screentime

1. In the past week, about how much time each day did you watch TV or movies, play games on computer or smart phones, or send emails or text messages?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Hours and Minutes

1. Raw data are summed in terms of minutes.

2. Higher scores indicate that the mother participates in more screentime per day.

3. Mothers who met the recommendation of watching under 2 hours of screentime were assigned a 1, mothers who did not meet the screentime guidelines and watched more than 2 hours of screentime were assigned a 0.

Maternal Behavior Modeling and Encouragement of Physical Activity and Media Use

This section assesses the value placed on physical activity for self (mother) and child, encouragement and facilitation of physical activity, importance of modeling physical activity, importance of not modeling sedentary behavior, mother and child co-physical

activity, modeling of physical activity, and modeling of sedentary behavior. The items were adapted from the following existing validated and reliable surveys: Parental Support, Importance, and Enjoyment Scales, the Physical and Nutritional Home Environment Inventory, the Healthy Home Survey, the Home Environment Survey, and the Chicago Neighborhood Inventory.[250-252,281] This section includes 8 scales.

Scale 1: Value Placed on Physical Activity for Self

1. I make time to be physically active almost every day.

2. I do not let things get in the way of keeping myself physically active.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. The 2 items are averaged for an overall score. Higher score indicates that the mother places greater value on physical activity for themselves.

Scale 2: Value Placed on Physical Activity for Child

1. I make sure my preschool kids are physically active almost every day.

2. I do not let things (like the weather) keep my preschool kids from being physically active.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. The 2 items are averaged for an overall score. Higher score indicates that the mother places greater value on physical activity for their child.

Scale 3: Encouragement and Facilitation of Physical Activity

1. I make it easy for my preschool kids to be physically active, such as by getting out play equipment, taking them to the park, or to classes like swimming, dance, or karate.

2. I often encourage my preschool kids to do something other than watch TV or movies, like play outside.

3. I often encourage my preschool kids to do something other than play with computers, tablets, and smart phones, like play outside.

4. I often make it easy for my preschool kids to do something other than watch TV or movies.

5. I often make it easy for my preschool kids to do something other than play with computers and smart phones.

Item 1: Answer Choices and Scoring Methodology

   Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. The 5 items are averaged for an overall score. Higher score indicates that there is greater maternal encouragement of child physical activity.

Scale 4: Importance of Modeling Physical Activity

1. I tell my preschool kids that I enjoy being physically active.

2. It is important for my preschool kids to see me being physically active.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. The 2 items are averaged for an overall score. Higher score indicates that the mother places greater value on modeling physical activity for their children.

Scale 5: Importance of Not Modeling Sedentary Behavior

1. It is important that my preschool kids do not see me spending a lot of time watching TV and movies

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Higher score indicates that the mother places greater value on not modeling sedentary behavior for their children.

Scale 6: Mother and Child Co-Physical Activity Frequency

1. In the last month, how often did you play actively indoors for at least 15 minutes with your preschool kids? This could be dancing, jumping, horseplay, or "wrestling".

2. In the last month, how often did you play actively outdoors for at least 15 minutes with your preschool kids? This could be going for a walk together, playing on swings, or playing games like tag.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday

1. Raw data are assigned values of 1-5 based on the response: almost never=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, everyday=7.

2. The 2 items are averaged for an overall score. Higher scores indicate that the mothers more frequently models physical activity with their children.

Scale 7: Modeling Physical Activity

1. In the last month, how often did your preschool kids see you doing moderate physical activity? Moderate physical activity includes things like bicycling at regular speed, sweeping, vacuuming the floor, ranking leaves, or washing windows. Think only about the times you did these activities for at least 10 minutes at a time.

2. In the last month, how often did your preschool kids see you doing heavy physical activity? Heavy physical activity includes things like running, fast bicycling,

aerobics, digging, or chopping wood. Think only about the times you did these activities for at least 10 minutes at a time.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday

1. Raw data are assigned values of 1-5 based on the response: almost never=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, everyday=7.

2. The 2 items are averaged for an overall score. Higher scores indicate that the mother more frequently models physical activity for their child.

Scale 8: Modeling Sedentary Behavior

1. In the last month, how often did you preschool kids see you using computers, tablets, smart phones, or video games played sitting down for more than 2 hours daily?

2. In the last month, how often did you preschool kids see you watching TV or movies for more than 2 hours daily?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday

1. Raw data are assigned values of 1-5 based on the response: almost never=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, everyday=7.

2. The 2 items are averaged for an overall score. Higher scores indicate that the mother more frequently models sedentary behavior for their children.

Maternal Sleep Time and Quality

The questions in this section assess maternal hours of sleep and maternal sleep quality. The scales were adapted from a validated, shortened version of the Pittsburgh Sleep Quality Index.[254,255] This section includes 2 scales.

<u>**Scale 1: Maternal Sleep Time**</u>

1. In the past week, about how much time each day did you usually sleep? This may be different than the number of hours spent in bed.

Item 1: Answer Choices and Scoring Methodology

    Answer Choices: Hours and Minutes, write-in

1. Sum of hours and minutes that mothers report usually sleeping each night.

2. Only mothers reporting between 4 to 12 hours of sleep per night were included as others were considered biologically implausible. Cut-off values were based on ± 3 hour of standard sleep requirements (7-9 hours/night)

3. Raw summed scores were recoded as <7 hours=1 insufficient sleep, 7 to 8 hours=2 adequate sleep, >8 hours=3 long sleep duration.

<u>**Scale 2: Maternal Sleep Quality**</u>

1. Think about your sleeping during the past month. How would you rate your sleep quality overall?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Very good, good, OK, bad, very bad

1. Raw data are assigned values of 1-5 based on the response: very good=1, good=2, OK=3, bad=4, very bad=5.

2. Assesses perceived sleep quality. Lower score indicates better perceived sleep quality.

Maternal Dietary Intake

This section assesses maternal dietary intake assesses maternal intake of fruits and vegetables, dietary fiber, and sugar-sweetened beverages. The items were adapted from the Block Fruit-Vegetable-Fiber Screener, the Block Kids' Screener, Fast Food/Beverage screener and an adapted beverage screener.[222,256,257] This section includes 2 scales.

Scale 1: Maternal Fruit, Vegetable, and Fiber Intake

1. About how often do you eat the following foods? Remember breakfast, lunch, dinner, snacks, and eating out.

2. Any fruit, fresh or canned (not counting juice)

3. Green Salad

4. Potatoes, any kind, including baked, mashed or French fried

5. Vegetable soup, or stew with vegetables

6. Any other vegetables, including string beans, peas, corn, broccoli or any other kind

7. Fiber cereals like Raisin Bran, Shredded Wheat, or Fruit-N-Fiber

Items 1-6: Answer Choices and Scoring Methodology

Answer Choices: Less than 1 days a week, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week, more than 1 time a day

1. Raw data are assigned values of 1-8 based on the response: Less than 1 day a week=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, 6 days a week, 7 days a week=7, more than 1 time a day=8.

2. Sum of score of the 10 items used to create a screener score and calculate servings and nutrients (includes breakfast cereal and fruit/veg juice). These scores were used to calculate the following nutrient intakes according to prediction equations shown below. (Note S=1 for all equations; A=Age in years).[256,293]

   - Fruit/Vegetable servings (Pyramid definitions of servings per day) = -0.23 + 0.37 (Score) -0.55 (S)

   - Dietary Fiber (g) = 12.6 + 0.77 (Score) -0.16 (A) -5.12 (S)

Scale 2: Maternal Beverage Intake

1. About how often do you eat the following foods? Remember breakfast, lunch, dinner, snacks, and eating out.

2. Milk to drink

3. Real 100% fruit juice (like orange, apple, grape, fresh, frozen or canned [not soda or other drinks])

4. Vegetable juice (like tomato juice, V-8, or carrot)

5. Soft drinks and soda/pop (like Coke or 7-Up [not diet soda])[A]

6. Fruit drinks or other sugar-sweetened beverages (like Hawaiian Punch, Hi-C, Kool-Aid, Ocean Spray cranberry juice cocktail, Snapple, Sunny Delight, Country

Time Lemonade, Sobe, Arizona Iced Tea, Sugar-Sweetened Tea [not diet drinks])[A]

7. Energy drinks (like RockStar, Red Bull, Monster, Full Throttle [not sugar-free])[A]

8. Sugar-sweetened specialty coffee drinks (like Frappuccino, flavored latte/cappuccino)[A]

Items 1-7: Answer Choices and Scoring Methodology

Answer Choices: Less than 1 days a week, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week, more than 1 time a day

1. Raw data are assigned values of 1-8 based on the response: Less than 1 day a week=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, 6 days a week, 7 days a week=7, more than 1 time a day=8.

2. The 4 items marked by [A] are averaged and divided by 7 for an overall score. Higher scores indicate more servings/day for sugar-sweetened beverages. Higher scores indicate more servings per day of sugar-sweetened beverages.

Maternal Eating Behaviors

These scales assess dimensions of the mother's eating style including disinhibited eating, emotional eating, dietary restraint, and food adventurousness. The scales have been shortened based on factor analysis and previous research to reduce participant burden.[259-261] The scales were adapted from the Three-Factor Eating Questionnaire, Food Adventurousness Scale, and the Food Neophobia Scale.[259-264] This section includes 4 scales.

Scale 1: Disinhibited Eating

1. I am always hungry, so it is hard for me to stop eating before I finish the food on my plate.

2. I am always hungry enough to eat at any time.

3. Sometimes when I start eating, I just can't seem to stop.

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: Definitely false, mostly false, mostly true, definitely true

1. Raw data are assigned values of 1-4 based on the response: Definitely false=1, mostly false=2, mostly true=3, definitely true=4.

2. The 3 items are averaged for an overall score. Higher scores indicate greater disinhibited eating.

Scale 2: Emotional Eating

1. When I feel sad, I often overeat.

2. When I feel anxious, I find myself eating.

3. When I feel lonely, I console myself by eating.

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: Definitely false, mostly false, mostly true, definitely true

1. Raw data are assigned values of 1-4 based on the response: Definitely false=1, mostly false=2, mostly true=3, definitely true=4.

2. The 3 items are averaged for an overall score. Higher scores indicate greater emotional eating.

Scale 3: Dietary Restraint

1. I deliberately take small helpings as a way to control my weight.

2. I consciously hold back at meals in order to not gain weight.

3. I do not eat some foods because they make me fat.

4. I avoid stocking on tempting foods.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Definitely false, mostly false, mostly true, definitely true

1. Raw data are assigned values of 1-4 based on the response: Definitely false=1, mostly false=2, mostly true=3, definitely true=4.

2. The 4 items are averaged for an overall score. Higher scores indicate greater dietary restraint.

Scale 4: Food Adventurousness

1. I do not trust new foods.

2. I am afraid to eat things I have never eaten before.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Definitely false, mostly false, mostly true, definitely true

1. Raw data are assigned values of 1-4 based on the response: Definitely false=4, mostly false=3, mostly true=2, definitely true=1.

2. The 2 items are averaged for an overall score. Higher scores indicate greater food adventurousness.

Maternal Feeding Practices

This section is to describe the feeding practices of the mother. This section will examine healthy eating modeling, use of food and non-food rewards during meals, overt control of intake, covert control of intake, pressures used during child eating, and restriction over child food choices. The scales were adapted from the Parent Feeding Style Questionnaire,

the Child Feeding Questionnaire, the Caregiver's Feeding Styles Questionnaire, the Project EAT survey, the FEEDS survey, the Physical and Nutritional Home Environment Survey, and the Overt/Covert Control Scale.[265,267,270,271,282] This section includes 6 scales.

Scale 1: Healthy Eating Modeling

1. I eat foods that I want my preschool kids to eat.

2. When my preschool kids are around, I try not to eat unhealthy foods like cookies and soda.

3. My preschool kids learn to eat healthy foods from me.

4. My preschool kids see me eat junk foods.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 4 items are averaged for an overall score. Higher scores indicate greater mother modeling of healthy eating behaviors.

Scale 2: Use of Food and Non-Food Rewards During Meals

1. If my preschool kids misbehave, I do not let them have a favorite food.[A]

2. I encourage my preschool kids to eat something by using food as a reward (for example, if you finish your vegetables, you will get a dessert).[A]

3. I reward my preschool kids with something to eat when they are well behaved.[A]

4. I promise my preschool kids something other than food if they eat (for example, if you eat your peas, we can play after dinner).[B]

5. I warn my preschool kids that I will take away something other than food if they do not eat (for example, if you do not eat your meat, there will be no TV time after dinner).[B]

Items 1-5: Answer Choices and Scoring Methodology

Answer Choices: Never, rarely, sometimes, most of the time, always

1. Raw data are assigned values of 1-5 based on the response: Never=1, rarely=2, sometimes=3, most of the time, always=4.

2. The 3 items marked by [A] are averaged for an overall score. Higher scores indicate greater frequency of using food rewards for child eating and behavior.

3. The 2 items marked by [B] are averaged for an overall score. Higher scores indicate greater frequency of using non-food rewards for child eating and behavior.

Scale 3: Overt Control of Intake

1. My preschool kids should always eat everything on their plate.

2. I decide the amounts of food that my preschool kids eat at meals.

3. My family knows that I do not like it when food is not eaten and goes to waste.

4. I set rules for my preschool kids about the amount of fruits and vegetables they have to eat.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 2 items are averaged for an overall score. Higher scores indicate greater overt control of child food intake.

Scale 4: Covert Control of Intake

1. I keep food I do not want my preschool kids to eat, like soda and cookies, in places where they cannot see or reach them.

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. Higher scores indicate greater covert control of child food intake.

Scale 5: Pressures Child to Eat

1. I really have to pressure my preschool kids to eat vegetables.

2. I really have to pressure my preschool kids to eat fruits.

3. I really have to pressure my preschool kids to drink milk.

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 3 items are averaged for an overall score. Higher scores indicate greater maternal pressures for child to eat.

Scale 6: Restricts Child Food Choices

1. I have to make sure my preschool kids do not eat too many salty snacks, like chips.

2. I have to make sure my preschool kids do not eat too many sweets, like cookies and soda.

Items 1-2: Answer Choices and Scoring Methodology

> **Answer Choices:** Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 2 items are averaged for an overall score. Higher scores indicate greater restriction of the child's food choices.

Maternal Outcome Expectations for Healthy Behaviors

This section assesses maternal outcome expectations for healthy eating and physical activity. The scales were adapted from the Parental Support, Importance, and Enjoyment Scales.[283] This section includes 2 scales.

Scale 1: Maternal Outcome Expectations for Healthy Eating

1. Eating healthier food will help me have more energy.

2. Eating healthier food will help me have a healthier weight.

3. Eating healthier food will help me look better.

4. Eating healthier food will help me be happier.

5. Eating healthier food will help me feel better.

6. Eating healthier food will help me be a good role model for my kids.

Items 1-6: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 6 items are averaged for an overall score. Higher scores indicate that the mother has greater outcome expectations for healthy eating.

Scale 2: Maternal Outcome Expectations for Physical Activity

1. Getting 60 minutes of physical activity most every day will help me have more energy.

2. Getting 60 minutes of physical activity most every day will help me have a healthier weight.

3. Getting 60 minutes of physical activity most every day will help me look better.

4. Getting 60 minutes of physical activity most every day will help me be happier.

5. Getting 60 minutes of physical activity most every day will help me feel better.

6. Getting 60 minutes of physical activity most every day will help me be a good role model for my kids.

Items 1-6: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 6 items are averaged for an overall score. Higher scores indicate the mother has greater outcome expectations for physical activity.

Maternal Self-Efficacy for Promoting Healthy Behaviors

This section assesses maternal self-efficacy for promoting healthy behaviors that include promoting obesity protective behaviors in children, child eating and weight management, child physical activity, and parent health behaviors. Items were created *de novo* based on HomeStyles Health guide topics. This section includes 4 scales.

<u>Scale 1: Self-Efficacy for Promoting Obesity Protective Behaviors in Children</u>

1. How confident are you that you will help your preschool child get and keep a healthy weight?

2. How confident are you that you will let your preschool kids decide how much to eat at meals?

3. How confident are you that you will get your preschool kids to eat breakfast most days of the week?

4. How confident are you that you will get your preschool kids to eat fruits and vegetables several times each day?

5. How confident are you that you will get your preschool kids to drink fewer sugary drinks?

6. How confident are you that you will help your preschool kids not over eat?

7. How confident are you that you will get your preschool kids to run around and burn off energy every day?

8. How confident are you that you will limit the time your preschool kids spend playing with computers, tablets, video games, and smart phones?

9. How confident are you that you will limit the amount of time your preschool kids spend watching TV and DVDs?

10. How confident are you that you will keep your preschool kids from eating while watching TV?

11. How confident are you that you will explain to your preschool kids that TV food ads try to get them to buy mostly unhealthy food?

12. How confident are you that you will help your preschool kids get enough sleep every night to wake up rested?

Items 1-12: Answer Choices and Scoring Methodology

Answer Choices: Not at all confident, not confident, quite confident, very confident

1. Raw data are assigned values of 1-5 based on the response: Not at all confident=1, not confident=2, confident=3, quite confident=4, very confident=5

2. The 12 items are averaged for an overall score. Higher scores indicate greater confidence in promoting obesity protective behaviors in children.

Scale 2: Self-Efficacy for Child Eating and Weight Management

1. How confident are you that you will help your preschool child get and keep a healthy weight?

2. How confident are you that you will let your preschool kids decide how much to eat at meals?

3. How confident are you that you will get your preschool kids to eat breakfast most days of the week?

4. How confident are you that you will get your preschool kids to eat fruits and vegetables several times each day?

5. How confident are you that you will get your preschool kids to drink fewer sugary drinks?

6. How confident are you that you will help your preschool kids not over eat?

7. How confident are you that you will explain to your preschool kids that TV food ads try to get them to buy mostly unhealthy food?

Items 1-7: Answer Choices and Scoring Methodology

Answer Choices: Not at all confident, not confident, quite confident, very confident

1. Raw data are assigned values of 1-5 based on the response: Not at all confident=1, not confident=2, confident=3, quite confident=4, very confident=5

2. The 7 items are averaged for an overall score. Higher scores indicate greater confidence in promoting better child eating and weight management.

Scale 3: Self-Efficacy for Child Physical Activity

1. How confident are you that you will get your preschool kids to run around and burn off energy every day?

2. How confident are you that you will limit the time your preschool kids spend playing with computers, tablets, video games, and smart phones?

3. How confident are you that you will limit the amount of time your preschool kids spend watching TV and DVDs?

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: Not at all confident, not confident, quite confident, very confident

1. Raw data are assigned values of 1-5 based on the response: Not at all confident=1, not confident=2, confident=3, quite confident=4, very confident=5

2. The 3 items are averaged for an overall score. Higher scores indicate greater confidence in promoting increased child physical activity.

Scale 4: Self-Efficacy for Parent Health Behaviors

1. How confident are you that you will walk at least 10 minutes a time most days for the next year?

2. How confident are you that you will do moderate physical activity (like bicycling at a regular speed, sweeping, vacuuming the floor, raking the leaves, or washing windows) most days for the next year?

3. How confident are you that you will do heavy physical activity (like running, fast bicycling aerobics, digging, or chopping wood) most days of the next year?

4. How confident are you that you will not put on extra weight in the next year?

5. How confident are you that you will buy mostly healthy foods in the next year?

Items 1-5: Answer Choices and Scoring Methodology

Answer Choices: Not at all confident, not confident, quite confident, very confident

1. Raw data are assigned values of 1-5 based on the response: Not at all confident=1, not confident=2, confident=3, quite confident=4, very confident=5

2. The 5 items are averaged for an overall score. Higher scores indicate greater confidence in participating in positive parent health behaviors.

Maternal Psychographic Characteristics

This purpose of this section assesses the weight- and health-related psychographics of mothers of young children. This section includes the following constructs: personal organization, need for cognition, confidence in parenting skills, perceived stress, and self-efficacy of stress management. The scales were adapted from the Confusion, Hubbub and Order Scale, the Need for Cognition scale, the Perceived Stress Scale, and the parenting satisfaction and efficacy measure.[275-279] This section includes 5 scales.

Scale 1: Personal Organization

1. I enjoy planning for activities like vacation well ahead of time.

2. I am often late for appointments.

3. Sometimes I am not as dependable as I should be.

4. I get chores done right away.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data for items 1 and 4 are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. Raw data for items 2 and 3 are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1.

3. The 4 items are averaged for an overall score. Higher scores indicate the mother has greater planning and personal organization.

Scale 2: Need for Cognition

1. I like dealing with situations that require a lot of thinking.

Item 1: Answer Choices and Scoring Methodology

   Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

   1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

   2. Assesses mother's need for cognition. Higher scores indicate higher need for cognition.

Scale 3: Confidence in Parenting Skills

1. I feel sure about my parenting skills.

Item 1: Answer Choices and Scoring Methodology

   Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

   1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

   2. Higher scores indicate the mother feels more confident in their parenting skills.

Scale 4: Perceived Stress

1. In the last 2 weeks, how often did you feel unable to control the important things in your life?

2. In the last 2 weeks, how often did you feel that difficulties were piling up so high that you could not overcome them?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Not at all, several days, more than half the days, nearly every day

1. Raw data are assigned values of 1-4 based on the response: Not at all=1, several days=2, more than half the days=3, nearly every day=4.

2. The 2 items are averaged for an overall score. Higher scores indicate the mother has more perceived stress.

Scale 5: Self-Efficacy of Stress Management

1. In the last 2 weeks, how often did you feel confident in your ability to handle your personal problems?

2. In the last 2 weeks, how often did you feel that things were going your way?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Not at all, several days, more than half the days, nearly every day

1. Raw data are assigned values of 1-4 based on the response: Not at all=1, several days=2, more than half the days=3, nearly every day=4.

2. The 2 items are averaged for an overall score. Higher scores indicate the mother greater stress management.

CHILD INTRAPERSONAL CHARACTERISTICS

This section is to describe the child's characteristics. Factors relating to child characteristics include child demographic characteristics, child health status, child BMI

percentile for age, child physical activity and sedentary behaviors, child beverage intake, child eating styles, and child sleep time and quality. CHILD is replaced by the name provided by the mother for all items.

Child Demographic Characteristics

This section is to describe the demographic characteristics of respondent mothers' child being reported on.

1. CHILD was born in which month?

2. CHILD was born in which year?

3. CHILD is a _____.

Items 1-3: Answer Choices and Scoring Methodology

> **Answer Choices for Item 1:** January, February, March, April, May, June, July, August, September, October, November, December
>
> **Answer Choices for Item 2:** Before 2007, 2007, 2008, 2009, 2010, 2011, 2012, 2013
>
> **Answer Choices for Item 3:** Boy, girl

1. Raw data for item 1 are assigned values of 1-12 based on the response: January=1, February=2, March=3, April=4, May=5, June=6, July=7, August=8, September=9, October=10, November=11, December=12.

2. Raw data for item 2 are assigned values of 1-8 based on the response: Before 2007=1, 2007=2, 2008=3, 2009=4, 2010=5, 2011=6, 2012=7, 2013=8.

3. Raw data for item 3 are assigned values of 1-2 based on the response: boy=1, girl=2.

4. Items 1 to 3 describe various aspects of the child's demographic characteristics.

Child Health Status

This section is to describe the child's mental and physical health. This section includes 2 scales, including child health status, child quality of life, using 3 items to assess child health status. The scales were adopted from the Centers for Disease Control and Prevention's Health-Related Quality of Life questionnaire.[110,123]

<u>Scale 1: Child Health Status</u>

1. How would you rate CHILD's general health?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Excellent, very good, good, fair, poor

1. Raw data are assigned values of 1-5 based on the response: excellent=5, very good=4, good=3, fair=2, poor=1.

2. Higher scores indicate the mother rates their child's health status as being better.

<u>Scale 2: Child Quality of Life</u>

1. Think about CHILD's physical health, which includes physical illness and injury. During the past 30 days, how many days was CHILD's physical health not good?

2. Think about CHILD's mental health, which includes stress, depression, and problems with emotions. During the past 30 days, how many days was CHILD's mental health not good?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: 0 days, 1 day, …, 30 days

1. Raw data are assigned values of 0-30 based on the response: 0 days=0, 1 day=1, …, 30 days=30.

2. The 2 items are averaged for an overall score. Higher scores indicate the mother perceives their child's quality of life (physical and mental) to be better.

Child BMI Percentile for Age

This section is to describe the child's height and weight which is to be used to calculate child z score and BMI percentile for age. The data collected from mothers include: the child's height and child's weight. Note that not all participants submitted anthropometric data for their children as it was asked in a separate survey.

1. How tall is CHILD with shoes OFF?

2. How much does CHILD weigh now?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices for Item 1: less than 20, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, more than 48

Answer Choices for Item 1: Quarters: 0, ¼, ½, ¾

Answer Choices for Item 2: Write-in, pounds

1. For Item 1, inches and quarter inches are summed to obtain the child's overall height.

2. Item 2 is a self-reported measure of child weight by the mother.

3. For Item 1, mothers reporting their child's height as less than 20 inches or greater than 48 inches were removed.

4. BMI percentiles are then calculated based on items 1 and 2.

5. Children are then categorized as non-overweight=0 and overweight=1 based on their BMI percentile.

Child Physical Activity and Sedentary Behaviors

This section assesses child physical activity level and child screentime. This section includes 3 scales.

<u>**Scale 1: Child Physical Activity Level Score**</u>

1. In the past week, how many days did CHILD walk continuously for at least 10 minutes at a time to do things like go for a walk, walk the dog, or walk to school?

2. In the past week, how many days did CHILD run, jump, or do other things that made him or her sweat or breathe a little harder than usual?

3. In the past week, how many days did CHILD run, jump, or do other things that made him or her sweat or breathe a lot harder than usual?

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: 0 days, 1 days, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days

1. Raw data are assigned values of 0 to 7 based on the response: 0 days=0, 1 days=1, 2 days=2, 3 days=3, 4 days=4, 5 days=5, 6 days=6, 7 days=7.

2. A score is calculated by using the following formula

3. Physical activity = (# of days of vigorous activities per week x 3) + (# of days of moderate activities x 2) + (# of days of walking 10 minutes at a time)

4. The score ranges between 0-42. Higher scores indicate that the mother participates more frequently in physically active.

Scale 2: Child Screentime

1. In the past week, how much time each day did CHILD spend watching TV or movies, or playing games on a computer or smart phone?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Hours and minutes

1. Raw data are converted to minutes and summed.

2. Higher scores indicate that the mother participates in more screentime per day.

3. Children who met the recommendation of watching under 2 hours of screentime were assigned a 1, children who did not meet the screentime guidelines and watched more than 2 hours of screentime were assigned a 0.

Child Beverage Intake

1. Think about CHILD's beverage habits over the past year or so. About how often did CHILD drink each of the following beverages? Remember breakfast, lunch, dinner, snacks, and eating out.

2. Milk to drink

3. Real 100% fruit juice (like orange, apple, grape, fresh, frozen or canned [not soda or other drinks])

4. Vegetable juice (like tomato juice, V-8, or carrot)

5. Soft drinks and soda/pop (like Coke or 7-Up [not diet soda])

6. Fruit drinks or other sugar-sweetened beverages (like Hawaiian Punch, Hi-C, Kool-Aid, Ocean Spray cranberry juice cocktail, Snapple, Sunny Delight, Country Time Lemonade, Sobe, Arizona Iced Tea, Sugar-Sweetened Tea [not diet drinks])

Items 1-7: Answer Choices and Scoring Methodology

Answer Choices: Less than 1 days a week, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week, more than 1 time a day

1. Raw data are assigned values of 1-8 based on the response: Less than 1 day a week=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, 6 days a week, 7 days a week=7, more than 1 time a day=8.

2. Child's sugar-sweetened beverage intake per day is calculated by averaging items 4 and 5 and dividing the score by 7. Higher scores indicate more servings/day of sugar-sweetened beverages.

3. Child's milk intake per day is calculated by using the score from item 1 and diving it by 7. Higher scores indicate more servings/day of milk.

4. Child's fruit juice intake per day is calculated by using the score from item 2 and diving it by 7. Higher scores indicate more servings/day of fruit juice.

5. Child's vegetable juice intake per day is calculated by using the score from item 3 and diving it by 7. Higher scores indicate more servings/day of vegetable juice.

Child Eating Styles.

This section is to determine whether the child partakes in food neophobia, emotional eating, or self-regulation while eating in three sub-scales. The scale was adapted from the Children's Eating Behavior Questionnaire and from the Self-Regulation in Feeding Questionnaire.[284,285] This section includes 3 scales.

Scale 1: Food Neophobia

1. CHILD enjoys tasting new foods

2. CHILD refuses new foods at first

3. CHILD decides not to like a food, without even tasting it.

4. CHILD is interested in tasting food CHILD has not tasted before.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data for items 1 and 4 are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. Raw data for items 2 and 3 are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1.

3. The 4 items are averaged for an overall score. Higher scores indicate greater child food neophobia.

Scale 2: Emotional Eating

1. CHILD eats more when feeling nervous

2. CHILD eats more when feeling worried

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. The 2 items are averaged for an overall score. Higher scores indicate that the mother perceives the child has greater emotional eating

Scale 3: Self-Regulation

1. Given the chance, CHILD would eat most of the time.

2. If I allowed it, CHILD would eat too much.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5.

2. Higher scores indicate that the mother perceives child to have more eating-self regulation.

Child Sleep Time and Quality

This section assesses the sleep time and sleep quality of the mother's child. The section uses 2 scales to assess the length of sleep and night and length of sleep during nap time as well as the overall sleep quality. The scales were adapted from a validated, shortened version of the Pittsburgh Sleep Quality Index.[254,255]

Scale 1: Child Sleep Time

1. In the past week, about how much many HOURS did CHILD usually nap each day?

2. In the past week, about how much many MINUTES did CHILD usually nap each day?

3. In the past week, about how much many HOURS did CHILD usually sleep each night?

4. In the past week, about how much many MINUTES did CHILD usually sleep each night?

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Hours and Minutes, write-in

1. Items 1 and 2 summed give the total time that mothers report their child napping each day.

2. Only participants reporting 0 to 6 hours for children 2 years old or 0 to 3 hours for children 3 years old or 0 to 2 hours for children older than 4 years old were included; others were biologically implausible.

3. Items 3 and 4 summed give the total time that mothers report their child sleeping at night.

4. Only participants reporting 8 through 14 hours for 2 or 3 year old children or 8 to 13 hours for children older than 4 were included; others were biologically implausible.

5. Sums were recoded based on whether the child met the sleep requirement for their age.

6. Scores were recoded as: meeting sleep recommendations for age=1, not meeting sleep recommendations for age=0.

7. Sleep recommendations were as follows: 11-14 hours for 2 year old children, 10-13 hours for 3-5 year old children, and 9-11 hours for 6-9 year old children.[305]

Scale 2: Child Sleep Quality

1. During the past month, what was the overall quality of CHILD's sleep?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Very good, good, OK, bad, very bad

1. Raw data are assigned values of 1-5 based on the response: very good=5, good=4, OK=3, bad=2, very bad=1.

2. Assesses perceived sleep quality. Higher score indicates better the mother perceives the child's sleep quality at being better.

INTERPERSONAL CHARACTERISTICS

Interpersonal characteristics focus on formal and informal social networks and social support systems. Interpersonal characteristics of the home environment to be examined in this study include family meal cognitions, family meal behaviors, and family and household interactions and organization.

Family Meal Cognitions

This section includes 9 scales and assesses importance placed on family meals, family meal atmosphere, family meal planning, effort of cooking, time and energy for family meals, and meal preparation self-efficacy.

<u>**Scale 1: Importance Placed on Family Meals**</u>

1. Eating together as a family is not worth the effort.

2. We are all just too busy to eat dinner together.

3. It is important that my family eats meals together often.

Items 1-3: Answer Choices and Scoring Methodology

> **Answer Choices:** Strongly disagree, disagree, neither, agree, strongly agree

> 1. Raw data for items 1 to 2 are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

> 2. Raw data for item 3 are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

3. The 3 items are averaged for an overall score. Higher score indicates greater value placed on importance of family meals.

Scale 2: Family Meal Atmosphere

1. Meals with my family are usually stressful.

2. There are lots of arguments during family meals.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

2. The 2 items are averaged for an overall score. Higher score indicates a more positive family meal environment.

Scale 3: Family Meal Planning

1. I plan meals for my preschool kids at least 1 day in advance.

2. I plan meals for my preschool kids ahead of time when I know I am going to be busy.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. The 2 items are averaged for an overall score. Higher score indicates greater family meal planning.

Scale 4: Effort of Cooking

1. The less effort I need to spend making a meal, the better.

2. I do not mind if making a meal takes some effort.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data for item 1 are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

2. Raw data for item 2 are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

3. The 3 items are averaged for an overall score. Higher score indicate that the mothers are willing to put effort into preparing family meals.

Scale 5: Time and Energy for Family Meals

1. I do not have enough time or energy to cook meals for my children

2. I do not have enough time or energy to feed my children "right".

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

2. The 2 items are averaged for an overall score. Higher score indicates greater that the mother has greater time and energy for family meals.

Scale 6: Meal Preparation Self-Efficacy

1. I do not have the skills needed to prepare healthy foods.

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data for item 1 are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

2. Higher score indicates greater that the mother has greater self-efficacy at preparing meals.

Family Meal Behaviors

This section includes 3 scales and assesses family meal frequency, meal environment frequency, and media use during meals frequency.

Scale 1: Family Meal Frequency

1. How many days each week do most household members eat breakfast together?

2. How many days each week do most household members eat lunch together?

3. How many days each week do most household members eat dinner together?

Items 1-3: Answer Choices and Scoring Methodology

Answer Choices: Almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, every day

1. Raw data are assigned values of 1-5 based on the response: Almost never=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, every day=7

2. Sum the total frequency of breakfast, lunch, and dinner meals shared together with family each week.

3. Higher score indicates family eats has meals together more frequently.

Scale 2: Meal Environment Frequency

1. How many days each week does your family eat meals in the car?

2. How many days each week does your family eat meals at fast food restaurants like McDonalds or Burger King?

3. How many days each week does your family eat meals at the kitchen or dining room table?

4. How many days each week does your family eat meals in front of the TV?

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, every day

1. Raw data are assigned values of 1-5 based on the response: Almost never=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, every day=7

2. Item 1 assesses the frequency (days/week) that the family eats their meals in the car. Higher scores indicate that the family eats more meals in the car.

3. Item 2 assesses the frequency (days/week) that the family eats their meals in a fast food restaurant. Higher scores indicate that the family eats more meals at a fast food restaurant.

4. Item 3 assesses the frequency (days/week) that the family eats their meals at a kitchen or dining room table. Higher scores indicate that the family eats more meals at a kitchen or dining room table.

5. Item 4 assesses the frequency (days/week) that the family eats their meals in front of the TV. Higher scores indicate that the family eats more meals in front of the TV.

6. Items 1, 2, and 4 were averaged to determine the total frequency of unhealthy meal locations per week.

Scale 3: Media Use During Meals Frequency

1. How often is a TV on when meals and snacks are eaten at your home?

2. How often is a computer, tablet, video game, smart phone, or electronic educational device (like LeapPad) used during meals and snacks at home?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, every day

1. Raw data are assigned values of 1-5 based on the response: Almost never=0, 1 day a week=1, 2 days a week=2, 3 days a week=3, 4 days a week=4, 5 days a week=5, 6 days a week=6, every day=7

2. Item 1 assesses the frequency (days/week) that the TV is on while eating family meals and snacks. Higher scores indicate that the TV is on more frequently while the family has meals and snacks.

3. Item 2 assesses the frequency (days/week) that a media device is used while eating family meals and snacks. Higher scores indicate that a media device is on more frequently while the family has meals and snacks.

Family and Household Interactions and Organization

These scales assess interactions of family members, including family support for healthy behaviors, family cohesion, and household organization. This section includes 3 scales.

<u>Scale 1: Family Support for Healthy Behaviors</u>

1. During the past month, my family complained about having to eat healthy foods.

2. During the past month, I complained to my family about having to eat healthy foods.

3. During the past month, my family complained about having to participate in physical activity.

4. During the past month, I complained to my family about having to participate in physical activity.

<u>Items 1-4: Answer Choices and Scoring Methodology</u>

Answer Choices: Never, rarely, sometimes, most of the time, always

1. Raw data are assigned values of 1-5 based on the response: Never=5, rarely=4, sometimes=3, most of the time=2, always=1

2. Items 1 to 2 are averaged for an overall sub-score for healthy eating. A higher score indicates there is greater family support for healthy eating.

3. Items 3 to 4 are averaged for an overall sub-score for physical activity. A higher score indicates there is greater family support for physical activity.

4. All items are averaged to create an overall score. Higher scores indicate greater family support for healthy weight-related behaviors.

Scale 2: Family Cohesion

1. We fight a lot in our family.

2. Family members often criticize each other.

3. Family members really help and support one another.

4. There is a feeling of togetherness in our family.

5. My family really gets along well with each other.

Items 1-5: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data for items 1 to 2 are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

2. Raw data for items 3 to 5 are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

3. The 5 items are averaged for an overall score. Higher score indicates less conflict and more cohesion in the family.

Scale 3: Household Organization

1. It's a real zoo in our home.

2. You cannot hear yourself think in our home.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=5, disagree=4, neither agree nor disagree=3, agree=2, strongly agree=1

2. The 2 items are averaged for an overall score. Higher score indicates more household organization.

HOME ENVIRONMENT CHARACTERISTICS

This section of the survey is to describe the aspects of the home environment of mothers of young children. Characteristics of the home environment to be examined include the following: home opportunities for physical activity Check-UP (HOP-UP), sedentary screentime environment, household food availability, household food accessibility, and supermarket accessibility.

Home Opportunities for Physical Activity Check-UP (HOP-UP)[292]

The HOP-UP questionnaire was developed to describe the availability, accessibility, and frequency of use of space and equipment for physical activity.[292] This questionnaire has 5 scales and 18 total items.[292]

Scale 1: Indoor Home Space and Supports for Physical Activity[292]

1. My preschool kids have plenty of room for active play inside our home.

2. Think about the areas inside your home where your kids run around and burn off energy. How many somersaults or cartwheels could they do in a row without hitting furniture or walls?

3. Think about all of the balls, tricycles, bicycles, scooters, jump ropes, and toys that help your preschool child run around and burn off energy inside your home. How many of these does your child have?

4. How often do your preschool kids run around and burn off energy inside your home?

5. How often do your preschool kids play indoors with toys with balls, tricycles, bicycles, scooters, and other play things that help to burn off energy?

6. How often do your preschool kids run around and burn off energy indoors with siblings or kids who live nearby?

Item 1: Answer Choices and Scoring Methodology

Answer Choices for Item 1: Strongly disagree, disagree, neither, agree, strongly agree

Answer Choices for Items 2-3: Count: 1, 2, 3, 4, 5, etc.

Answer Choices for Item 3: 0 to 4, 5 to 10, 11 to 15, 16 to 20, 21 to 25, >25

Answer Choices for Items 4-6: never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday

1. Raw data for item 1 are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Raw data for items 2-3 are assigned values based on the response: <2=1, 2=2, 3=3,4=4, >5=5

3. Raw data for item 3 are assigned values 0 to 5 based on the response: 0 to 4=1, 5 to 10=2, 11 to 15=3, 16 to 20=4, >21=5

4. Raw data for items 4-6 are assigned values 1 to 5 based on the response: almost never=1, 1-2 times per week=2, 3-4 times per week=3, 5-6 times per week=4, everyday=5

5. Items are averaged to create the scale score.

Scale 2: Outdoor/Yard Space and Supports for Physical Activity[292]

1. The yard or area outside our home has plenty of room for my preschool kids to actively play.

2. There is a paved or flat area in the yard or area outside our home that is big enough for my preschool kids to safely ride a tricycle, bike, scooter, or other wheeled toy.

3. My preschool kids have shoes and clothes for playing outside.

4. My preschool kids have plenty of toys for playing outside, like balls, jump ropes, skates, swimming or kiddie pool, hula-hoops, or sleds.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Items are averaged to create the scale score.

Scale 3: Neighborhood Space and Supports for Physical Activity[292]

1. There are outdoor areas, like parks, pools, and playgrounds, nearby my home where kids can play.

2. The outdoor areas in my neighborhood have plenty of swing sets, slides, or other play equipment my preschool kids can use.

3. The outdoor areas in my neighborhood where my preschool kids play actively are safe.

4. The outdoor areas in my neighborhood where my preschool kids play actively are clean.

Items 1-4: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Items are averaged to create the scale score; higher score indicates greater availability of space for indoor active play.

Scale 4: Neighborhood Environment Safety[292]

1. I feel safe from crime in my neighborhood and nearby.

2. I feel safe from biting insects, like mosquitos and ticks, in my neighborhood and nearby.

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Items are averaged to create the scale score; higher score indicates greater availability of space for indoor active play.

Scale 5: Frequency of Active Play Outdoors[292]

1. When the weather is good, how often does your child usually play in outdoor areas, like parks, pools, and playgrounds, near your home?

2. How often does your child usually play in free or low-cost recreation centers or other indoor places near your home?

Items 1-2: Answer Choices and Scoring Methodology

Answer Choices: almost never, 1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, everyday

1. Raw data are assigned values 1 to 5 based on the response: almost never=1, 1-2 times per week=2, 3-4 times per week=3, 5-6 times per week=4, everyday=5

Sedentary Screentime Environment

The purpose of this section of the survey is to describe media equipment availability in the home and in the child's bedroom, media equipment accessibility, minutes of screentime the child is allowed per day, and the minutes of time the TV is on daily with no one watching.[250-252] The scales were adapted from existing scales (the Physical and Nutrition Home Environment Inventory, the Healthy Home Survey, and the Home Environment Survey).[250-252] This section of the survey includes 6 scales.[250-252]

Scale 1: Media Equipment Availability in the Home

1. How many of each of these are in your home? – TV

2. How many of each of these are in your home? – DVD Player

3. How many of each of these are in your home? – Computer/Laptop

4. How many of each of these are in your home? – Smart Phone/Tablet

5. How many of each of these are in your home? – Video game devices played standing up and require lots of moving (like Wii Fit, Xbox Kinect)

6. How many of each of these are in your home? – Video game devices that are usually played sitting down (like Nintendo DS, PlayStation, Xbox)

Items 1-6: Answer Choices and Scoring Methodology

Answer Choices: Count; Drop down box

1. Raw data are assigned values based on the response: no=blank, yes=1

2. The 6 items are summed for an overall score; higher score indicates greater number of media equipment available in the home.

Scale 2: Media Equipment Availability in the Child's Bedroom

1. Which of these do you allow your preschool kids to use in their bedroom? – TV

2. Which of these do you allow your preschool kids to use in their bedroom? – DVD Player

3. Which of these do you allow your preschool kids to use in their bedroom? – Computer/Laptop

4. Which of these do you allow your preschool kids to use in their bedroom? – Smart Phone/Tablet

5. Which of these do you allow your preschool kids to use in their bedroom? – Video game devices played standing up and require lots of moving (like Wii Fit, Xbox Kinect)

6. Which of these do you allow your preschool kids to use in their bedroom? – Video game devices that are usually played sitting down (like Nintendo DS, PlayStation, Xbox)

7. Which of these do you allow your preschool kids to use in their bedroom? – Internet

8. Which of these do you allow your preschool kids to use in their bedroom? – None of the above

Items 1-8: Answer Choices and Scoring Methodology

Answer Choices: Check all that apply

1. Raw data are assigned values based on the response: no=blank, yes=1

2. The first 7 items are summed for an overall score; higher score indicates more media equipment is available to the child to use in their bedroom.

Scale 3: Media Equipment Accessibility

1. It's easy for my preschool kids to turn on the TV or DVD player and watch shows or movies with little or no help.

2. It's easy for my preschool kids to turn on and play with computers and laptops with little or no help.

3. It's easy for my preschool kids to turn on and play with video games that are played standing up and require lots of moving (like Wii Fit, Xbox Kinect) with little or no help.

4. It's easy for my preschool kids to turn on add play with video games that are usually played sitting down with little or no help.

Items 1-4: Answer Choices and Scoring Methodology

    Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Items are averaged to create the scale score; higher score indicates child has greater access to turn on and play with media equipment in the home.

Scale 4: Minutes of Screentime Child Allowed Per Day

1. Each day, how much time do you usually allow your preschool kids to watch TV or movies at home?

2. In the past week, how much time each day did your preschool child spend watching TV or movies, or playing games on a computer or smart phone?

Item 1-2: Answer Choices and Scoring Methodology

    Answer Choices: Continuous; Report total hours and minutes

1. Sum of hours and minutes reported by the mother that TV is on when no one is watching daily.

Scale 5: Minutes of Time the TV is On Daily with No One Watching

1. Each day, how much time is the TV on when no one is watching it?

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Continuous; Report total hours and minutes

1. Sum of hours and minutes reported by the mother that TV is on when no one is watching daily.

Household Food Availability

This section describes the availability of fruits and vegetables, sugar-sweetened beverages, and high energy/low nutrient snacks. This section includes 3 scales.

Scale 1: Household Availability of Fruits and Vegetables

1. Every week of the last year, there was enough fruit (any type, including fresh, frozen, or canned [not juice] in my house for most people to have _____.

2. Every week of the last year, there was enough green salad in my house for most people to have _____.

3. Every week of the last year, there was enough potatoes (any kind, including baked and mashed, not fried) in my house for most people to have _____.

4. Every week of the last year, there was enough vegetable soup, or stew with vegetables in my house for most people to have _____.

5. Every week of the last year, there was enough of any other vegetable (including string beans, peas, corn, broccoli or any other kind of vegetable) in my house for most people to have _____.

6. Every week of the last year, there was enough beans (such as baked beans, pinto, kidney, or lentils [not green beans]) in my house for most people to have _____.

7. Every week of the last year, there was enough dark bread (such as whole wheat or rye) in my house for most people to have _____.

Item 1: Answer Choices and Scoring Methodology

Answer Choices: less than 1 serving a week, 1 serving a week, 2 servings a week, 3 servings a week, 4 servings a week, 5 servings a week, 6 servings a week, 7 servings a week, more than 1 serving every day

Raw data are assigned values of 1-5 based on the response: less than 1 serving a week=0, 1 serving a week=1, 2 servings a week=2, 3 servings a week=3, 4 servings a week=4, 5 servings a week=5, 6 servings a week=6, 7 servings a week=7, more than 1 serving every day=8

7 items are summed for an overall score. Higher scores indicate greater availability of servings/person/week of fruits and vegetable foods in the home.[256,293]

Scale 2: Household Availability of Beverages

1. Every week of the last year, there was enough milk to drink in my house for most people to have _____.

2. Every week of the last year, there were enough real 100% fruit juice (like orange, apple, grape, fresh, frozen or canned [not sodas or other drinks]) in my house for most people to have _____.

3. Every week of the last year, there were enough soft drinks and soda/pop (like Coke or 7-Up [not diet soda]) in my house for most people to have _____.

4. Every week of the last year, there were enough fruit drinks or other sugar-sweetened beverages (like Hawaiian Punch, Hi-C, Kool-Aid, Ocean Spray cranberry juice cocktail, Snapple, Sunny Delight, Country Time Lemonade, Sobe, Arizona Iced Tea, Sugar-Sweetened Tea [not diet drinks]) in my house for most people to have _____.

5. Every week of the last year, there were enough vegetable juice (like tomato juice, V-8, carrot) in my house for most people to have _____.

6. Every week of the last year, there were enough energy drinks (like RockStar, Red Bull, Monster, Full Throttle [not sugar-free]) in my house for most people to have _____.

7. Every week of the last year, there were enough sugar-sweetened specialty coffee drinks (like Frappuccino, flavored latte/cappuccino) in my house for most people to have _____.

8. What kind of milk do you usually have? (choose one)

Answer choices and Scoring Methodology

Answer Choices for Items 1-7: Less than 1 time each week, 1 day each week, 2 days each week, 3 days each week, 4 days each week, 5 days each week, 6 days a week, 7 days a week, More than one time each day

Answer Choices for Item 8: Whole milk, Reduced fat 2% milk, Low fat 1% milk, Nonfat milk, Chocolate milk, Soy milk (or almond or rice), Lactaid milk, Don't know

1. Items 1-6 are scored as follows: 0=less than 1 time each week, 1=1 day each week, 2=2 days each week, 3=3 days each week, 4=4 days each week, 5=5

days each week, 6=6 days each week, 7=7 days each week, 8=more than one time each day.

2. Items 2 and 5 are also used in the Block Fruit-Vegetable-Fiber Screener and are scored as follows: 0=less than 1 time each week, 1=1 day each week, 2=2 days each week, 3=3 days each week, 4=4 days each week, 5=5 days each week, 6=6 days each week, 7=7 days each week, 8=more than one time each day.

3. Item 7 is scored as follows: whole milk=1, Reduced fat 2% milk=2, Low fat 1% milk=3, Nonfat milk=4, Chocolate milk=5, Soy milk (or almond or rice)=6, Lactaid milk=7, Don't know=8

4. Items 3-4; 6-7 are averaged for an overall score of sugar-sweetened beverages available in the home. Higher scores indicate greater availability of servings/person/week of sugar-sweetened beverages in the home.

Scale 3: Household Availability of High Energy/Low Nutrient Snacks

1. Every week of the last year, there was enough corn chips (like Doritos, tortilla chips, Fritos), potato chips, popcorn, or crackers in my house for most people to have _____ .

2. Every week of the last year, there was enough doughnuts, pastries, cookies, or cake (like Ho-Hos) (not low-fat) in my house for most people to have _____ .

3. Every week of the last year, there was enough ice cream (not sherbet or non-fat) in my house for most people to have _____ .

4. Every week of the last year, there was enough candy or candy bars in my house for most people to have _____ .

Answer choices and Scoring Methodology

Answer Choices: Less than 1 time each week, 1 day each week, 2 days each week, 3 days each week, 4 days each week, 5 days each week, 6 days a week, 7 days a week, More than one time each day

1. Items are scored as follows: 0=less than 1 time each week, 1=1 day each week, 2=2 days each week, 3=3 days each week, 4=4 days each week, 5=5 days each week, 6=6 days each week, 7=7 days each week, 8=more than one time each day.

2. The 4 items are summed to create an overall score. Higher scores indicate greater availability of servings/person/week of salty, fatty snacks in the home.

Household Food Accessibility

This section assesses the mothers' policies about which foods children can access independently and which foods are easy for children to see and reach. It includes two scales (Child Food Accessibility and Child Food Access Policy) modified from the Healthy Survey and the Home Environment Survey.[250,251]

Scale 1: Child Food Accessibility

1. Which of these foods are kept in places that are easy for your preschool kids to see and reach? (Check all that apply)

   a. Potatoes, chips, popcorn, crackers, corn chips (like Doritos, tortilla chips, Fritos)[A]

   b. Doughnuts, pastries, cookies, cake (like Ho-Hos)[A]

   c. Ice cream[A]

   d. Candy or candy bars[A]

e. Milk[B]

f. Soft drinks and soda/pop (like Coke or 7-Up)[A]

g. Fruit drinks or other sugary beverages[A]

h. Real 100% juice (like orange, apple, grape)[B]

i. Fruits or vegetables[B]

j. Cereal[B]

k. Breakfast bars, granola bars, protein bars[B]

l. None of these are kept in places that are easy to see and each[C]

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Yes, No

1. Raw data are assigned values of 0 to 1 based on the response: yes=1, no=0

2. 6 items indicate by [A] are summed to create an overall score. Higher scores indicate the child could independently access more nutrient poor foods.

3. Parents who responded yes to the item marked by [C] were not included in the overall score for child independent accessibility to nutrient poor foods.

4. 5 items indicate by [B] are summed to create an overall score. Higher scores indicate the child could independently access more nutrient rich foods.

5. Parents who responded yes to the item marked by [C] were not included in the overall score for child independent accessibility to nutrient rich foods.

Scale 2: Child Food Access Policy

1. Which of these foods do you allow your preschool kids to get for a snack without your help? (Check all that apply)

a. Potatoes, chips, popcorn, crackers, corn chips (like Doritos, tortilla chips, Fritos)[A]

b. Doughnuts, pastries, cookies, cake (like Ho-Hos)[A]

c. Ice cream[A]

d. Candy or candy bars[A]

e. Milk[B]

f. Soft drinks and soda/pop (like Coke or 7-Up)[A]

g. Fruit drinks or other sugary beverages[A]

h. Real 100% juice (like orange, apple, grape)[B]

i. Fruits or vegetables[B]

j. Cereal[B]

k. Breakfast bars, granola bars, protein bars[B]

l. None of these are kept in places that are easy to see and each[C]

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Yes, No

1. Raw data are assigned values of 0 to 1 based on the response: yes=1, no=0

2. 6 items indicate by [A] are summed to create an overall score. Higher scores indicate the parent has more policies towards access to nutrient poor foods.

3. Parents who responded yes to the item marked [C] were not included in the overall score for parent policies towards access to nutrient poor foods.

4. 5 items indicate by [B] are summed to create an overall score. Higher scores indicate the parent has more policies towards access to nutrient rich foods.

5. Parents who responded yes to the item marked by ^C were not included in the overall score for parent policies towards access to nutrient rich foods.

Supermarket Accessibility

This 1-item scale assesses whether the family has easy access to a large supermarket. This item was created *de novo*.

1. It is easy for me to get to a large supermarket (not a corner store, deli, or convenience store) where I live.

Item 1: Answer Choices and Scoring Methodology

Answer Choices: Strongly disagree, disagree, neither, agree, strongly agree

1. Raw data are assigned values of 1-5 based on the response: strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5

2. Higher score indicates that the participant has access to a large grocery store.

APPENDIX B

FINAL SURVEY DESIGN AND LAYOUT IN ENGLISH

Do you prefer to complete this in English or Spanish?
(¿Prefieres completar la encuesta en inglés o español?)

○ English (Inglés)
○ Spanish (Español)

CONTINUE

Dear Parents of Preschoolers (ages 2 to 5 years),

Want healthier kids? This project is for you!

Researchers at Rutgers University are inviting thousands of parents of preschoolers to signup for HomeStyles. HomeStyles helps parents shape their homes and lifestyles to raise happy, healthy, safe kids.

Here is what HomeStyles families do. At each Level, you'll earn money and may receive gifts to help you make changes.

Level 1: Sign up and spend about 40 minutes on surveys about your home environment, lifestyle, and family. We'll send you and your preschooler pedometers to wear to count the number of steps you take. Finish this Level and you'll earn $15.
Level 2: Review 1 new HomeStyles program guide a month for the next 4 months. Reviewing a guide takes about 15 minutes. Then, spend a few minutes each day making quick, easy changes to your lifestyle and home. Take about 40 minutes to do surveys. Finish this Level and you'll earn $18.
Level 3: This is the same as Level 2, except you get all new guides. You and your preschoolers also get to wear pedometers. Finish this Level and you'll earn $20.
Level 4: Review 1 HomeStyles guide in the next 2 months and spend a few minutes daily making little changes. Spend about 40 minutes on surveys. Finish this Level and you'll earn $35.
Level 5: This is like Level 4, except you choose a different guide. You and your preschoolers also get to wear pedometers. Finish this Level and you'll earn $40.

Between each Level, you can earn bonus dollars by doing simple things like visiting the HomeStyles website, chatting with a HomeStyles Specialist, or replying to friendly reminders we send you. To stay active in HomeStyles, you will need to complete the Levels in order. It takes about 15 to 18 months to move through all the Levels.

Joining the HomeStyles project is voluntary, cost-free, and has little risk. All information you provide is confidential and won't be traceable to you. If you decide to no longer participate in HomeStyles, this will not affect your usual home visits in any way. You may be released from the project if you are unwilling to comply with the spirit of the project.

If you have any questions about the HomeStyles project or your rights as a study participant, please contact me at 855-333-7724 or HomeStyles@aesop.rutgers.edu. You also may contact the Rutgers Office of Research and Sponsored Programs at 848-932-0150 or humansubjects@orsp.rutgers.edu.

If you agree to participate in the HomeStyles project, please click the AGREE button below. Please print a copy of this letter for your records. We look forward to your participation – we're sure you'll enjoy it!

Sincerely,

Carol Byrd-Bredbenner, PhD, RD, FAND
Professor/Extension Specialist

If you agree to participate in this study, click "I Agree".

[Print]

○ I agree
○ I disagree

[CONTINUE]

Thank you! Please enter your name and email to continue!

Name	
Email	

CONTINUE

Welcome to the HomeStyles Project Survey Cafe #1

CONTINUE

This survey will help us learn more about families.

As you complete it, please remember
- there are no right or wrong answers
- all of your answers are confidential

CONTINUE

Please tell us about your family

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day
How many days each week do most household members eat breakfast together?	○	○	○	○	○	○	○	○
How many days each week do most household members eat lunch together?	○	○	○	○	○	○	○	○
How many days each week do most household members eat dinner together?	○	○	○	○	○	○	○	○
How many days each week do you have family meals at fast food restaurants like McDonalds or Burger King?	○	○	○	○	○	○	○	○
How many days each week do you eat family meals in front of the TV?	○	○	○	○	○	○	○	○
How many days each week do you eat family meals at the kitchen or dining room table?	○	○	○	○	○	○	○	○
How many days each week does your family eat meals in the car?	○	○	○	○	○	○	○	○

CONTINUE

Think about this past week

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
In the past week, how many days did you walk for at least 10 minutes at a time?	○	○	○	○	○	○	○	○
In the past week, how many days did you do moderate physical activity? *Moderate physical activity includes things like bicycling at regular speed, sweeping, vacuuming the floor, raking leaves, or washing windows.*	○	○	○	○	○	○	○	○
In the past week, how many days did you do heavy physical activity? *Heavy physical activity includes things like running, fast bicycling, aerobics, digging, or chopping wood.*	○	○	○	○	○	○	○	○

In the past week, about how much time each day did you watch TV or movies, play games on computers or smart phones, or send emails or text messages?
(Please report both hours and minutes; for instance, if you spent 4 hours and 0 minutes watching TV and playing games on your smart phone, select 4 hours in the first box, and 0 minutes in the second box)

Hours [⇕]
Minutes [⇕]

In the past week, about how much time each day did you usually sleep? *This may be different than the number of hours spent in bed.*
(Please report both hours and minutes; for instance, if you spent 9 hours and 15 minutes sleeping, select 9 hours in the first box, and 15 minutes in the second box)

Hours [⇕]
Minutes [⇕]

CONTINUE

About You

How would you rate your sleep quality overall?

○ Very good

○ Good

○ OK

○ Bad

○ Very bad

When you run errands, how do you usually get there?

○ Car

○ Bike

○ Motorcycle

○ Bus

○ Subway

○ Train

○ Other, specify

[   ]

How many cars, vans, or trucks does your family own?

[▼]

CONTINUE

Your Time

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day
In the last month, how often did <u>you</u> play actively **indoors** for **at least 15 minutes** with your preschool kids? *This could be dancing, jumping, horseplay, or "wrestling".*	○	○	○	○	○	○	○	○
In the last month, how often did <u>you</u> play actively **outdoors** for **at least 15 minutes** with your preschool kids? *This could be going for a walk together, playing on swings, or playing games like tag.*	○	○	○	○	○	○	○	○
In the last month, how often did your preschool kids <u>see</u> you doing **moderate** physical activity? *Moderate physical activity includes things like bicycling at a regular speed, sweeping, vacuuming the floor, raking leaves, walking the dog, or washing windows.* Think only about the times you did these activities for **at least 10 minutes** at a time.	○	○	○	○	○	○	○	○
In the last month, how often did your preschool kids <u>see</u> you doing **heavy** physical activity? *Heavy physical activity includes things like running, fast bicycling, aerobics, or digging.* Think only about the times you did these activities for **at least 10 minutes** at a time.	○	○	○	○	○	○	○	○
In the last month, how often did your preschool kids <u>see</u> you using computers, tablets, smart phones, or video games played sitting down for **more than 2 hours daily**?	○	○	○	○	○	○	○	○
In the last month, how often did your preschool kids <u>see</u> you watching TV or movies for **more than 2 hours daily**?	○	○	○	○	○	○	○	○

CONTINUE

Please tell us about you

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
The less effort I need to spend making a meal, the better.	○	○	○	○	○
Meals with my family are usually stressful.	○	○	○	○	○
Eating together as a family is not worth the effort.	○	○	○	○	○
I do not mind if making a meal takes some effort.	○	○	○	○	○
There are lots of arguments during family meals.	○	○	○	○	○
I do not have enough time or energy to cook meals for my children.	○	○	○	○	○
We are all just too busy to eat dinner together.	○	○	○	○	○
I do not have enough time or energy to feed my children "right".	○	○	○	○	○
It is important that my family eat meals together often.	○	○	○	○	○
A chubby baby is a healthy baby.	○	○	○	○	○
I enjoy making meals.	○	○	○	○	○
I do not have the skills needed to prepare healthy foods.	○	○	○	○	○

CONTINUE

	Not confident at all	Not confident	Confident	Quite confident	Very confident
How confident are you that you will help your preschool child get and keep a healthy weight?	○	○	○	○	○
How confident are you that you will let your preschool kids decide how much to eat at meals?	○	○	○	○	○
How confident are you that you will get your preschool kids to eat breakfast most days of the week?	○	○	○	○	○
How confident are you that you will get your preschool kids to eat fruits and vegetables several times each day?	○	○	○	○	○
How confident are you that you will get your preschool kids to drink few sugary drinks?	○	○	○	○	○
How confident are you that you will help your preschool kids not over eat?	○	○	○	○	○

CONTINUE

	Not confident at all	Not confident	Confident	Quite confident	Very confident
How confident are you that you will get your preschool kids to run around and burn off energy every day?	○	○	○	○	○
How confident are you that you will limit the time your preschool kids spend playing with computers, tablets, video games, and smart phones?	○	○	○	○	○
How confident are you that you will limit the amount of time your preschool kids spend watching TV and DVDs?	○	○	○	○	○
How confident are you that you will keep your preschool kids from eating while watching TV?	○	○	○	○	○
How confident are you that you will explain to your preschool kids that TV food ads try to get them to buy mostly unhealthy food?	○	○	○	○	○
How confident are you that you will help your preschool kids get enough sleep every night to wake up rested?	○	○	○	○	○

CONTINUE

What do you think?

	Not confident at all	Not confident	Confident	Quite confident	Very confident
How confident are you that you will walk for at least 10 minutes at a time most days for the next year?	○	○	○	○	○
How confident are you that you will do moderate physical activity *(like bicycling at a regular speed, sweeping, vacuuming the floor, raking the leaves, or washing windows)* most days for the next year?	○	○	○	○	○
How confident are you that you will do heavy physical activity *(like running, fast bicycling, aerobics, digging, or chopping wood)* most days for the next year?	○	○	○	○	○
How confident are you that you will <u>not</u> put on extra weight in the next year?	○	○	○	○	○
How confident are you that you will buy <u>mostly</u> healthy foods in the next year?	○	○	○	○	○

CONTINUE

What do you think?

	Not confident at all	Not confident	Confident	Quite confident	Very confident
How confident are you that you will walk for at least 10 minutes at a time most days for the next year?	○	○	○	○	○
How confident are you that you will do moderate physical activity *(like bicycling at a regular speed, sweeping, vacuuming the floor, raking the leaves, or washing windows)* most days for the next year?	○	○	○	○	○
How confident are you that you will do heavy physical activity *(like running, fast bicycling, aerobics, digging, or chopping wood)* most days for the next year?	○	○	○	○	○
How confident are you that you will <u>not</u> put on extra weight in the next year?	○	○	○	○	○
How confident are you that you will buy <u>mostly</u> healthy foods in the next year?	○	○	○	○	○

CONTINUE

What do you think?

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Eating healthier food will help me have more energy.	○	○	○	○	○
Eating healthier food will help me have a healthier weight.	○	○	○	○	○
Eating healthier food will help me look better.	○	○	○	○	○
Eating healthier food will help me be happier.	○	○	○	○	○
Eating healthier food will help me feel better.	○	○	○	○	○
Eating healthier food will help me be a good role model for my kids.	○	○	○	○	○

CONTINUE

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What do you think ?

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Getting 60 minutes of physical activity most every day will help me have more energy.	○	○	○	○	○
Getting 60 minutes of physical activity most every day will help me have a healthier weight.	○	○	○	○	○
Getting 60 minutes of physical activity most every day will help me look better.	○	○	○	○	○
Getting 60 minutes of physical activity most every day will help me be happier.	○	○	○	○	○
Getting 60 minutes of physical activity most every day will help me feel better.	○	○	○	○	○
Getting 60 minutes of physical activity most every day will help me be a good role model for my kids.	○	○	○	○	○

CONTINUE

What do you think?

	Very Important	Important	Sort of Important	Not at all Important
Regularly vacuuming the carpet in my home with a vacuum cleaner that has a high-efficiency filter is _____.	○	○	○	○
Cleaning up spills in my home right away is _____.	○	○	○	○
Keeping electric cords in my home out of my children's reach is _____.	○	○	○	○
Carefully following instructions on cleaning product labels is _____.	○	○	○	○
Always storing cleaning products and pesticides in places my children cannot see or reach them is _____.	○	○	○	○
Checking carbon monoxide detectors in my home at least once a week is _____.	○	○	○	○
Getting chimney flues, furnaces, and wood stoves in my home inspected and cleaned at least once a year is _____.	○	○	○	○

CONTINUE

	Very Important	Important	Sort of Important	Not at all Important
Keeping medicines in childproof containers and storing them where my child cannot see or reach them is _____.	○	○	○	○
Getting rid of flaking or peeling paint in my home is _____.	○	○	○	○
Putting leftovers in the refrigerator within 2 hours is _____.	○	○	○	○
Checking the temperature of my refrigerator often is _____.	○	○	○	○
Never allowing tobacco smoking in my home is _____.	○	○	○	○
Having my home tested for radon is _____.	○	○	○	○
Keeping the air inside my home smelling clean and fresh is _____.	○	○	○	○
Using exhaust fans in the bathroom every time we shower or bathe is _____.	○	○	○	○

CONTINUE
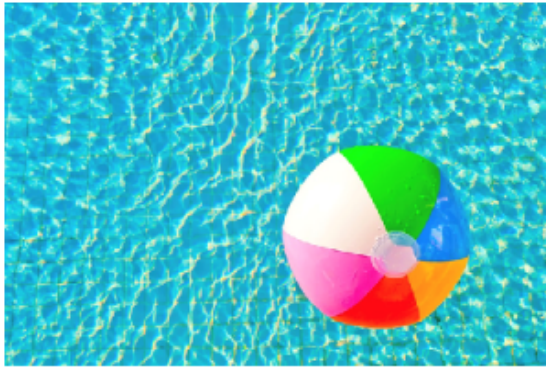
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I enjoy planning for activities like vacation well ahead of time.	○	○	○	○	○
I feel sure about my parenting skills.	○	○	○	○	○
I am often late for appointments.	○	○	○	○	○
I like dealing with situations that require a lot of thinking.	○	○	○	○	○
Sometimes I am not as dependable as I should be.	○	○	○	○	○
I never seem to be able to get organized.	○	○	○	○	○
I get chores done right away.	○	○	○	○	○
I talk with my preschool kids while doing chores around the house.	○	○	○	○	○

CONTINUE

What do you think?

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I eat foods that I want my preschool kids to eat.	○	○	○	○	○
I plan meals for my preschool kids at least 1 day in advance.	○	○	○	○	○
When my preschool kids are around, I try <u>not</u> to eat unhealthy foods like cookies and soda.	○	○	○	○	○
I plan meals for my preschool kids ahead of time when I know I am going to be busy.	○	○	○	○	○

CONTINUE

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
My preschool kids should always eat everything on their plate.	○	○	○	○	○
I really have to pressure my preschool kids to eat vegetables.	○	○	○	○	○
I really have to pressure my preschool kids to eat fruit.	○	○	○	○	○
I really have to pressure my preschool kids to drink milk.	○	○	○	○	○
I let my preschool kids decide when to have snacks.	○	○	○	○	○
I "go with the flow" and do not plan meals for my preschool kids or family.	○	○	○	○	○
My preschool kids learn to eat healthy foods from me.	○	○	○	○	○
I let my preschool kids decide when to have meals.	○	○	○	○	○
I keep food I do not want my preschool kids to eat, like soda and cookies, in places where they cannot see or reach them.	○	○	○	○	○

CONTINUE

What do you think?

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I decide the amounts of food that my preschool kids eat at meals.	○	○	○	○	○
I have to make sure my preschool kids do <u>not</u> eat too many salty snacks, like chips.	○	○	○	○	○
My family knows that I do <u>not</u> like it when food is not eaten and goes to waste.	○	○	○	○	○
My preschool kids see me eat junk foods.	○	○	○	○	○
I set rules for my preschool kids about the amount of fruits and vegetables they have to eat.	○	○	○	○	○
I have to make sure my preschool kids do <u>not</u> eat too many sweets, like cookies and soda.	○	○	○	○	○
It is healthy for young kids to be chubby.	○	○	○	○	○

CONTINUE

How often do you do this?

	Never	Rarely	Sometimes	Most of the time	Always
I warn my preschool kids that I will take away something other than food if they do not eat (for example, *If you do not eat your meat, there will be no TV time after dinner*).	○	○	○	○	○
I encourage my preschool kids to eat something by using food as a reward (for example, *If you finish your vegetables, you will get a dessert*).	○	○	○	○	○
During the past month, I complained to my family about having to participate in physical activity.	○	○	○	○	○
I reward my preschool kids with something to eat when they are well behaved.	○	○	○	○	○
During the past month, I complained to my family about having to eat healthy foods.	○	○	○	○	○

CONTINUE

Select the **first** picture that shows a child that you think is **underweight**.
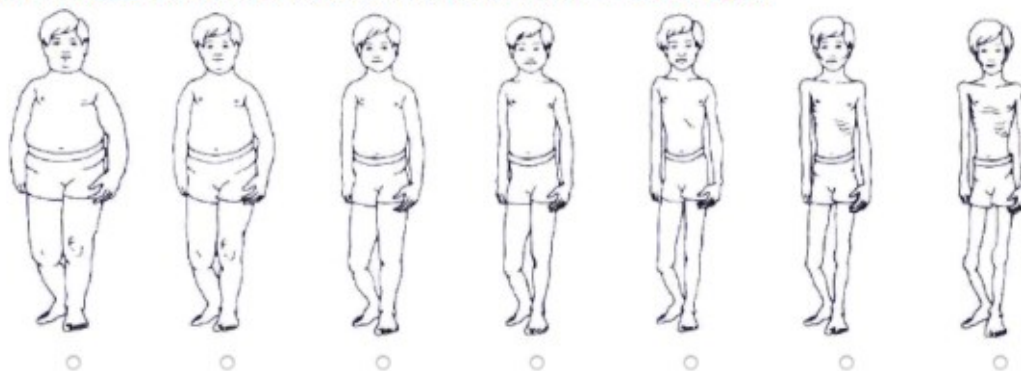
Select the **first** picture that shows a child that you think is **overweight**.

CONTINUE

What do you think?

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I decide the amounts of food that my preschool kids eat at meals.	○	○	○	○	○
I have to make sure my preschool kids do <u>not</u> eat too many salty snacks, like chips.	○	○	○	○	○
My family knows that I do <u>not</u> like it when food is not eaten and goes to waste.	○	○	○	○	○
My preschool kids see me eat junk foods.	○	○	○	○	○
I set rules for my preschool kids about the amount of fruits and vegetables they have to eat.	○	○	○	○	○
I have to make sure my preschool kids do <u>not</u> eat too many sweets, like cookies and soda.	○	○	○	○	○
It is healthy for young kids to be chubby.	○	○	○	○	○

CONTINUE

In my home...

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
My family almost always seems to be rushed.	○	○	○	○	○
It's a real zoo in our home.	○	○	○	○	○
You cannot hear yourself think in our home.	○	○	○	○	○
We fight a lot in our family.	○	○	○	○	○
Family members often criticize each other.	○	○	○	○	○
Family members really help and support one another.	○	○	○	○	○
There is a feeling of togetherness in our family.	○	○	○	○	○
My family really gets along well with each other.	○	○	○	○	○

CONTINUE

Take a virtual popcorn break!

Take a deep breath and think about the smell and taste of popcorn.   Imagine it's crunchiness!

Please enter your email address.
You will need to enter this email to continue the next part of the survey. Be sure to use this same email address to access all of the surveys you will need to take in HomeStyles.
We will <u>not</u> share your email with anyone else.

Email [   ]

You may continue taking Survey Cafe #1, or take a break and come back.
If you come back later, we will send you an email with the link to the next part of the survey. You will need to enter your email address to enter the survey.

○ I want to continue taking Survey Cafe #1 now

○ I want to finish Survey Cafe #1 later

You can contact the HomeStyles Team if you have problems at (855) 333-7724 or homestyles@aesop.rutgers.edu

CONTINUE

Please log in.

To get started again, enter the same email address you used on the previous survey. You can contact the HomeStyles Team if you have problems at (855) 333-7724 or homestyles@aesop.rutgers.edu

CONTINUE

Think about the things your preschool kids do to be active. This includes things that make you sweat and breathe harder than normal, like riding scooters or tricycles, running, jumping, and horseplay or "wrestling."

Now think about about your preschool kids and home.

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
My preschool kids have plenty of room to run around and burn off energy inside our home.	○	○	○	○	○
My preschool kids have siblings or friends who live nearby that they can run around and burn off energy with inside our home.	○	○	○	○	○
My preschool kids have video games that help them be active. *These are video games played standing up and require lots of moving like Wii Fit, XBox Kinect.*	○	○	○	○	○
I put limits on the amount of time I allow my preschool kids to run around and burn off energy inside our home.	○	○	○	○	○

Think about all the balls, tricycles, bicycles, scooters, jump ropes, and other toys that help your child run around and burn off energy inside your home.
How many of these does your child have?

- ○ 0 to 4
- ○ 5 to 10
- ○ 11 to 15
- ○ 16 to 20
- ○ 21 to 25
- ○ More than 25

Think about the areas inside your home where your kids run around and burn off energy. How many somersaults or cartwheels could they do in a row without hitting furniture or walls?

[⇕]

CONTINUE

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day
How often do your preschool kids run around and burn off energy inside your home?	○	○	○	○	○	○	○	○
How often do your preschool kids play indoors with balls, tricycles, bicycles, scooters, and other play things that help the child run around and burn off energy?	○	○	○	○	○	○	○	○
How often do your preschool kids run around and burn off energy indoors with siblings or kids who live nearby?	○	○	○	○	○	○	○	○

CONTINUE

Think about all the TVs, DVD players, computers, and smart phones in your home that work.

How many of each of these are in your home?

TV	DVD Player	Computer/Laptop	Smart Phone/Tablet/LeapPad	Video game devices played standing up and require lots of moving (like Wii Fit, XBox Kinect)	Video game devices that usually are played sitting down (like Nintendo DS, Playstation, XBox)
⬍	⬍	⬍	⬍	⬍	⬍

Which of these do you allow your preschool kids to use in their bedroom? *(Check all that apply)*

☐ TV

☐ DVD Player

☐ Computer/Laptop

☐ Smart Phone/Tablet/LeapPad

☐ Video game devices played standing up and require lots of moving (like Wii Fit, XBox Kinect)

☐ Video game devices that usually are played sitting down (like Nintendo DS, Playstation, XBox)

☐ Internet

☐ None of the above

Do you have Internet access in your home?

○ Yes

○ No

CONTINUE

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
It's easy for my preschool kids to turn on the TV or DVD and watch shows or movies with little or no help.	○	○	○	○	○
It's easy for my preschool kids to turn on and play with computers and laptops with little or no help.	○	○	○	○	○
It's easy for my preschool kids to turn on and play with video games that are usually played standing up and require lots of moving (like Wii Fit, XBox Kinect) with little or no help.	○	○	○	○	○
It's easy for my preschool kids to turn on and play with video games that are usually played sitting down (like Nintendo DS, Playstation, XBox) with little or no help.	○	○	○	○	○
It's easy for my preschool kids to turn on and play with tablets, smart phones, or electronic educational devices (like LeapPads) with little or no help.	○	○	○	○	○

CONTINUE

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a wek	6 days a week	Every day
How often is a TV on when meals and snacks are eaten at your home?	○	○	○	○	○	○	○	○
How often is a computer, tablet, video game, smart phone, or electronic educational device (like LeapPad) used during meals and snacks at home?	○	○	○	○	○	○	○	○

CONTINUE

Each day, how much time is the TV on when no one is watching it?
Please indicate both hours and minutes.

hours [▢]
minutes [▢]

Each day, how much time do you usually allow your preschool kids to watch TV or movies at home?
Please indicate both hours and minutes.
(If you do not limit the time, please answer 24 hours and 0 minutes)

hours [▢]
minutes [▢]

Each day, how much time do you allow your preschool kids to play at home with computers, tablets, video games that usually are played sitting down, smart phones, or electronic educational devices (like LeapPad)?
Please indicate both hours and minutes.
(If you do not limit the time, please answer 24 hours and 0 minutes)

hours [▢]
minutes [▢]

Each day, how much time do you allow your preschool kids to play at home with video games that are played standing up and require lots of moving (like Wii Fit, XBox Kinect)?
Please indicate both hours and minutes.
(If you do not limit the time, please answer 24 hours and 0 minutes)

hours [▢]
minutes [▢]

CONTINUE

What do you think?

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I try to limit the number of TV commercials my preschool kids see.	○	○	○	○	○
I try to limit the TV shows and movies my preschool kids see to only those made for kids.	○	○	○	○	○
I often talk with my preschool kids about advertisements on TV.	○	○	○	○	○
I often talk with my preschool kids about TV shows, video games, or movies.	○	○	○	○	○
It does not matter to me how much time my preschool kids watch TV.	○	○	○	○	○
My preschool kids learn so much from TV.	○	○	○	○	○
TV programs teach my preschool kids a lot of things that help them do better in school.	○	○	○	○	○
I only let my preschool kids watch TV programs that are educational.	○	○	○	○	○

CONTINUE

Think about your yard or area <u>right outside</u> your home.

- ○ There are NO places right outside my home where my preschool kids can play actively
- ○ There ARE places right outside my home where my preschool kids can play actively

CONTINUE

Think about your yard or area <u>right outside</u> your home.

Think about what your preschool kids _**usually**_ do, even if it differs on certain days of the week or times of the year.

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
The yard or area outside our home has plenty of room for my preschool kids to <u>actively</u> play games like tag or chase.	○	○	○	○	○
There is a paved or flat area in the yard or area outside our home that is big enough for my preschool kids to safely ride a tricycle, bike, scooter, or other wheeled toy.	○	○	○	○	○
My preschool kids have shoes and clothes for playing <u>actively</u> outside.	○	○	○	○	○
The yard or area outside our home has plenty of swings, slides, or other <u>active</u> play equipment my preschool kids can use.	○	○	○	○	○
My preschool kids have plenty of toys for playing <u>actively</u> outside, like balls, jump ropes, skates, swimming or kiddie pool, hula hoops, or sleds.	○	○	○	○	○
My preschool kids have a tricycle, bike, scooter, or other wheeled toy to use outside.	○	○	○	○	○

CONTINUE

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day
When the weather is good, how often do your preschool kids usually play <u>actively</u> in the yard or area outside your home?	○	○	○	○	○	○	○	○

Think about the size of parking spaces at the shopping mall.

Now, think about all the areas outside your home where you would allow your preschool kids to play <u>actively</u> - <u>include grassy, paved, or other areas.</u>

If those areas became a parking lot, about how many parking spaces would there be?

[▲▼]

CONTINUE

Think about your <u>neighborhood</u> and the area <u>nearby where you live.</u>

	Strongly disagree	Disagree	Neither	Agree	Strongly agree	Don't know
There are outdoor areas, like parks, pools, and playgrounds, nearby my home where preschool kids can play actively.	○	○	○	○	○	○
The outdoor areas in my neighborhood have plenty of swing sets, slides, or other play equipment my preschool kids can use.	○	○	○	○	○	○
The outdoor areas in my neighborhood where my preschool kids can play actively are safe.	○	○	○	○	○	○
The outdoor areas in my neighborhood where my preschool kids can play actively are clean.	○	○	○	○	○	○
The outdoor areas in my neighborhood where my preschool kids can play actively are crowded with other people.	○	○	○	○	○	○

CONTINUE

	Strongly disagree	Disgree	Neither	Agree	Strongly agree
There is so much traffic near where I live that I do not feel safe walking in the area.	○	○	○	○	○
I feel safe from crime in my neighborhood and nearby.	○	○	○	○	○
I feel safe from biting insects, like mosquitos, ticks, and scorpions, and animals, like dogs running loose, in my neighborhood and nearby.	○	○	○	○	○
It is easy for me to get to a large supermarket (not a corner store, deli, or convenience store) near my home.	○	○	○	○	○

CONTINUE

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day
How often do your preschool kids go on walks with the dog or play with it outside (doing things like throwing balls)?	○	○	○	○	○	○	○	○

CONTINUE

*Think about what your preschool kids **usually** do, even if it differs on certain days of the week or times of the year.*

	Almost never	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day
When the weather is good, how often do your preschool kids usually play _actively_ in outdoor areas, like parks, pools, or playgrounds, near your home?	○	○	○	○	○	○	○	○
How often do your preschool kids usually play _actively_ in free or low-cost recreation centers or other indoor places near your home?	○	○	○	○	○	○	○	○

Do you have a dog?
○ Yes
○ No

CONTINUE

Think about your eating habits over the **past year or so**.

About **how often do you eat** each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out.

	Less than once a WEEK	Once a WEEK	2 to 3 times a WEEK	4 to 6 times a WEEK	Once a DAY	2 or more a DAY
Any fruit, fresh or canned (<u>not</u> counting juice)	○	○	○	○	○	○
Green salad	○	○	○	○	○	○
Potatoes, any kind, including baked, mashed or french fried	○	○	○	○	○	○
Vegetable soup, or stew with vegetables	○	○	○	○	○	○
Any other vegetables, including string beans, peas, corn, broccoli or any other kind	○	○	○	○	○	○
Fiber cereals like Raisin Bran, Shredded Wheat or Fruit-n-Fiber	○	○	○	○	○	○
Beans such as baked beans, pinto, kidney, or lentils (<u>not</u> green beans)	○	○	○	○	○	○
Dark bread such as whole wheat or rye	○	○	○	○	○	○

CONTINUE

Think about your eating habits over the **past year or so**.

About **how often do you eat** each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out.

Please note the answer choices are different than the previous page.

	1 time a MONTH or less	2 to 3 times a MONTH	1 to 2 times a WEEK	3 to 4 times a WEEK	5 or more times a WEEK
Hamburgers, ground beef, meat burritos, tacos	○	○	○	○	○
Beef or pork, such as steaks, roasts, ribs, or in sandwiches	○	○	○	○	○
Fried chicken	○	○	○	○	○
Hot dogs, or Polish or Italian sausage	○	○	○	○	○
Cold cuts, lunch meats, ham (not low-fat)	○	○	○	○	○
Bacon or breakfast sausage	○	○	○	○	○
Salad dressings (not low-fat)	○	○	○	○	○
Margarine, butter or mayo on bread or potatoes	○	○	○	○	○
Margarine, butter or oil in cooking	○	○	○	○	○

CONTINUE

Think about your eating habits over the **past year or so**.

About **how often do you eat** each of the following foods? Remember breakfast, lunch, dinner, snacks and eating out.

	1 time a MONTH or less	2 to 3 times a MONTH	1 to 2 times a WEEK	3 to 4 times a WEEK	5 or more times a WEEK
Eggs (not Egg Beaters or just egg whites)	○	○	○	○	○
Pizza	○	○	○	○	○
Cheese, cheese spread (not low-fat)	○	○	○	○	○
Whole milk	○	○	○	○	○
French fries, fried potatoes	○	○	○	○	○
Corn chips, potato chips, popcorn, crackers	○	○	○	○	○
Doughnuts, pastries, cake, cookies (not low-fat)	○	○	○	○	○
Ice cream (not sherbet or non-fat)	○	○	○	○	○

CONTINUE

Think about your beverage habits over the **past year or so**.

About **how often do you drink** each of the following beverages? Remember breakfast, lunch, dinner, snacks and eating out.

	Less than 1 time a week	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	7 days a week	More than 1 time a day
Milk to drink	○	○	○	○	○	○	○	○	○
Real 100% fruit juice (like orange, apple, grape, fresh, frozen or canned [not sodas or other drinks])	○	○	○	○	○	○	○	○	○
Vegetable juice (like tomato juice, V-8 or carrot)	○	○	○	○	○	○	○	○	○
Soft drinks and soda/pop (like Coke or 7-up [not diet soda])	○	○	○	○	○	○	○	○	○
Fruit drinks or other sugar sweetened beverages (like Hawaiian Punch, Hi-C, Kool-Aid, Ocean Spray cranberry juice cocktail, Snapple, Sunny Delight, Country Time Lemonade, Sobe, Arizona Ice Tea, sugar sweetened tea [not diet drinks])	○	○	○	○	○	○	○	○	○
Energy drinks (like RockStar, Red Bull, Monster, Full Throttle [not sugar-free])	○	○	○	○	○	○	○	○	○
Sugar-sweetened specialty coffee drinks (like frappuccino, flavored latte/cappuccino)	○	○	○	○	○	○	○	○	○

CONTINUE

**Think about the food
in your home**

Which of these foods do you allow your preschool kids to get for a snack without your help?
(Check all that apply)

- ☐ potato chips, popcorn, crackers, corn chips, like Doritos, tortilla chips, Fritos
- ☐ doughnuts, pastries, cookies, cake (like Ho-Hos)
- ☐ ice cream
- ☐ candy or candy bars
- ☐ milk
- ☐ soft drinks and soda/pop like Coke or 7-Up
- ☐ fruit drinks or other sugary beverages
- ☐ Real 100% juice, like orange, apple, grape
- ☐ fruits or vegetables
- ☐ cereal
- ☐ breakfast bars, granola bars, protein bars
- ☐ my kids are not allowed to get any of these for a snack without my help

CONTINUE

Which of these are kept in places that are easy for your preschool kids to see and reach? *(Check all that apply)*

- ☐ potato chips, popcorn, crackers, corn chips, like Doritos, tortilla chips, Fritos
- ☐ doughnuts, pastries, cookies, cake (like Ho-Hos)
- ☐ ice cream
- ☐ candy or candy bars
- ☐ milk
- ☐ soft drinks and soda/pop like Coke or 7-Up
- ☐ fruit drinks or other sugary beverages
- ☐ Real 100% juice, like orange, apple, grape
- ☐ fruits or vegetables
- ☐ cereal
- ☐ breakfast bars, granola bars, protein bars
- ☐ none of these are kept in places that are easy to see and reach

CONTINUE

True or False?

	Definitely false	Mostly false	Mostly true	Definitely true
I deliberately take small helpings as a way to control my weight.	○	○	○	○
In the last year, I worried about whether our food would run out before we got money to buy more.	○	○	○	○
I am always hungry, so it is hard for me to stop eating before I finish the food on my plate.	○	○	○	○
When I feel sad, I often overeat.	○	○	○	○
I consciously hold back at meals in order to not gain weight.	○	○	○	○
I am always hungry enough to eat at any time.	○	○	○	○
I do not eat some foods because they make me fat.	○	○	○	○
When I feel anxious, I find myself eating.	○	○	○	○
I avoid "stocking up" on tempting foods.	○	○	○	○
I do not trust new foods.	○	○	○	○
Sometimes when I start eating, I just can't seem to stop.	○	○	○	○
When I feel lonely, I console myself by eating.	○	○	○	○
I am afraid to eat things I have never eaten before.	○	○	○	○
In the last year, the food I bought just didn't last and we didn't have money to get more.	○	○	○	○

CONTINUE

Think about **ALL** the meals and snacks eaten in your home this **PAST YEAR**.

Think about the number of meals and snacks each family member usually eats at your home.
(Do not count food eaten in restaurants, work, school, or other places.)

Every week of the last year, there was enough...

	Less than 1 serving a week	1 serving a week	2 servings a week	3 servings a week	4 servings a week	5 servings a week	6 servings a week	7 servings a week	More than servi a da
Every week of last **year**, there was enough fruit (any type, including fresh, frozen, or canned [not juice]) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of the last **year**, there was enough green salad for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of the last **year**, there were enough potatoes (any kind, including baked, and mashed, not fried) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of the last **year**, there was enough vegetable soup, or stew with vegetables in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of the last **year**, there was enough of any other vegetable (including string beans, peas, corn, broccoli or any other kind of vegetable) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of the last **year**, there were enough beans (such as baked beans, pinto, kidney, or lentils [not green beans]) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of the last **year**, there was enough dark bread such as whole wheat or rye in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○

CONTINUE

Think about **ALL** the meals and snacks eaten in your home this **PAST YEAR**.

Think about the number of meals and snacks each family member usually eats at your home.
(Do not count food eaten in restaurants, work, school, or other places.)

Every week of the last year, there was enough...

	Less than 1 serving a week	1 serving a week	2 servings a week	3 servings a week	4 servings a week	5 servings a week	6 servings a week	7 servings a week	More tha ser a c
Every week of last **year**, there were enough corn chips (like Doritos, tortilla chips, Fritos), potato chips, popcorn, or crackers in my house for **most** people at my house to have ____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there were enough doughnuts, pastries, cookies, or cake (like Ho-Hos) (not low-fat) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there was enough ice cream (not sherbet or non-fat) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there were enough candy or candy bars in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○

CONTINUE

Think about **ALL** the beverages consumed in your home this **PAST YEAR**.

Think about the number of meals and snacks each family member usually eats at your home.
(Do not count beverages consumed in restaurants, work, school, or other places.)

Every week of the last year, how often was there enough...

	Less than 1 serving a week	1 serving a week	2 servings a week	3 servings a week	4 servings a week	5 servings a week	6 servings a week	7 servings a week	More than serv a d
Every week of last **year**, there was enough milk to drink in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there was enough real 100% fruit juice (like orange, apple, grape, fresh, frozen or canned [not sodas or other drinks]) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there was enough vegetable juice (like tomato juice, V-8, or carrot) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there were enough soft drinks and soda/pop (like Coke or 7-up [not diet soda]) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there were enough fruit drinks or other sugar sweetened beverages (like Hawaiian Punch, Hi-C, Kool-Aid, Ocean Spray cranberry juice cocktail, Snapple, Sunny Delight, Country Time Lemonade, Sobe, Arizona Ice Tea, sugar sweetened tea [not diet drinks]) in my house for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there were enough energy drinks (like RockStar, Red Bull, Monster, Full Throttle [not sugar-free]) in my house for **most** people at my house to have ____.	○	○	○	○	○	○	○	○	○
Every week of last **year**, there were enough sugar-sweetened specialty coffee drinks (like frappuccino, flavored latte/cappuccino) in my house for **most** people at my house to have ____.	○	○	○	○	○	○	○	○	○

CONTINUE

What kind of milk do you usually have in your house? (choose one)

- ○ Whole milk
- ○ Reduced fat 2% milk
- ○ Low fat 1% milk
- ○ Fat-free milk
- ○ Chocolate milk
- ○ Soy milk (or almond or rice)
- ○ Lactaid milk
- ○ Don't know

CONTINUE

Think about **ALL** the food eaten in your home this **PAST YEAR**.

Think about the number of meals and snacks each family member usually eats at your home.
(Do <u>not</u> count food eaten in restaurants, work, school, or other places.)

Every week of the last year, there was enough...

	Less than 1 serving a week	1 serving a week	2 servings a week	3 servings a week	4 servings a week	5 servings a week	6 servings a week	7 servings a week	More than serving a day
Every week of last <u>year</u>, there were enough plain or fiber cereals (like Corn Flakes, Special K, Rice Krispies, Wheaties, Oatmeal, Raisin Bran, Shredded Wheat, Fruit-n-Fiber, Plain Cheerios, Grape Nuts, Wheat Chex, Kix, All Bran, Granola, Kashi) in my <u>house</u> for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last <u>year</u>, there were enough sweet cereals (like Honey Nut Cheerios, Cap'n Crunch, Lucky Charms, Life, Golden Grahams, Frosted Mini Wheats, Frosted Flakes, Froot Loops, Apple Jacks, Trix) in my <u>house</u> for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○
Every week of last <u>year</u>, there were enough breakfast bars, granola bars, or protein bars in my <u>house</u> for **most** people at my house to have _____.	○	○	○	○	○	○	○	○	○

CONTINUE

Select the first picture that shows someone that you think is underweight.
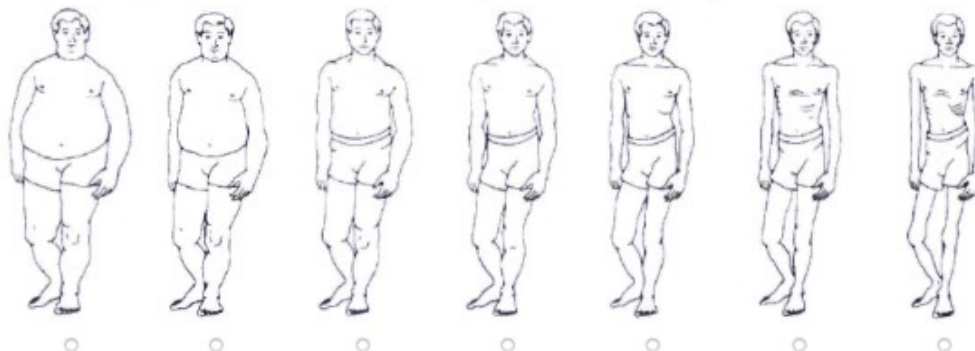
Select the first picture that shows someone that you think is overweight.
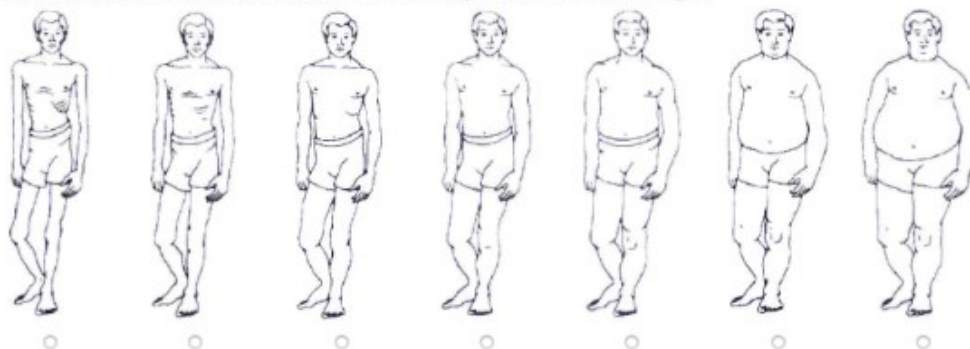
CONTINUE

Please tell us your thoughts

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I make time to be physically active almost every day.	○	○	○	○	○
I do <u>not</u> let things get in the way of keeping myself physically active.	○	○	○	○	○
It is important for me to be physically active.	○	○	○	○	○
It is important that my preschool kids do <u>not</u> see me spending a lot of time watching TV and movies.	○	○	○	○	○
I make it easy for my preschool kids to be physically active, such as by getting out play equipment, taking them to the park, or to classes like swimming, dance, or karate.	○	○	○	○	○
I make sure my preschool kids are physically active almost every day.	○	○	○	○	○
I do <u>not</u> let things (like the weather) keep my preschool kids from being physically active.	○	○	○	○	○

CONTINUE

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I tell my preschool kids that I enjoy being physically active.	○	○	○	○	○
It is important for my preschool kids to see me being physically active.	○	○	○	○	○
I often encourage my preschool kids to do something *other than* watch TV or movies, like play outside.	○	○	○	○	○
I often encourage my preschool kids to do something *other than* play with computers, tablets, and smart phones, like play outside.	○	○	○	○	○
I often make it easy for my preschool kids to do something *other than* watch TV or movies.	○	○	○	○	○
I often make it easy for my preschool kids to do something *other than* play with computers and smart phones.	○	○	○	○	○
I am not one of those parents who is always holding and snuggling with my kids.	○	○	○	○	○
I give my kids lots of hugs and kisses.	○	○	○	○	○

CONTINUE

Select the first picture that shows a child that you think is underweight.
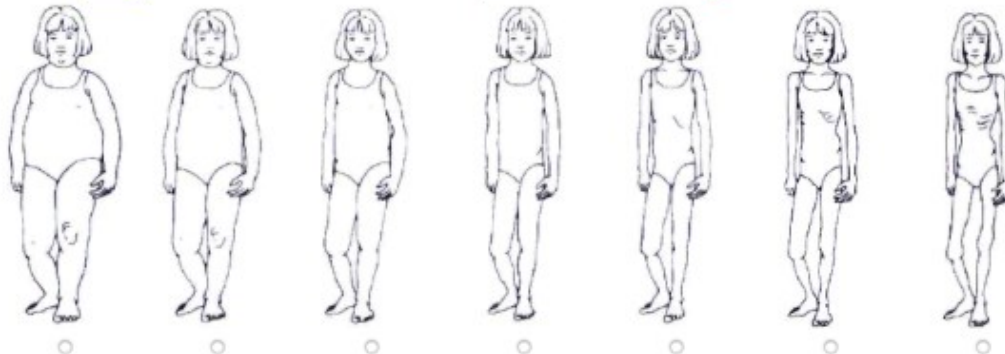
Select the first picture that shows a child that you think is overweight.
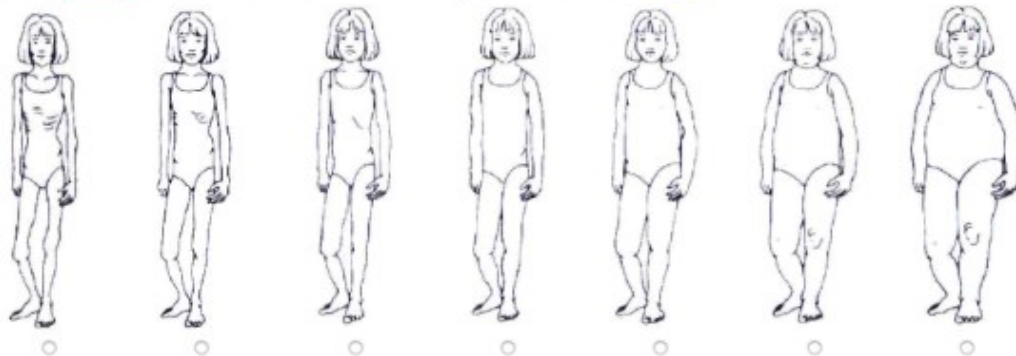
CONTINUE

Take a virtual beverage break

Imagine the cool, refreshing taste and the soft sound of fizzing.

When you are relaxed, continue with the survey...

Please provide your email [   ]

You may continue taking Survey Cafe #1, or take a break and come back. If you come back later, we will send you an email with the link to the next part of the survey. You will need to enter your email address to enter the survey.

○ I want to continue taking Survey Cafe #1 now

○ I want to finish Survey Cafe #1 later

CONTINUE

Please log in.

To get started again, enter the same email address you used on the previous survey. You can contact the HomeStyles Team if you have problems at (855) 333-7724 or homestyles@aesop.rutgers.edu

CONTINUE

Please tell us about your child

Think about your kids who are between 2 to 7 years old.
We would like to know more about 1 of them.
If you have more than 1 child this age, please tell us about the child born closest to 12 noon on June 7th.

What is this child's name? (a nickname is fine)

<div style="border:1px solid;"> </div>

CONTINUE

CHILD'S NAME is a
- ○ Boy
- ○ Girl

CHILD'S NAME was born in which month?

[▼]

CHILD'S NAME was born in which year?
- ○ Before 2007
- ○ 2007
- ○ 2008
- ○ 2009
- ○ 2010
- ○ 2011
- ○ 2012
- ○ 2013

What is CHILD'S NAME's ethnicity/race? (*Choose all that apply*)
- ☐ Hispanic, Latino, or Spanish
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaskan Native
- ☐ Asian Indian
- ☐ Asian (e.g., Japanese, Chinese, Korean)
- ☐ Pacific Islander
- ☐ Other, please specify
  [   ]

Did you give birth to CHILD'S NAME?
- ○ Yes
- ○ No

Was CHILD'S NAME premature (born earlier than 38 weeks)?
- ○ Yes
- ○ No
- ○ Not sure

How long did you breastfeed CHILD'S NAME?

[▼]

CHILD'S NAME was born in
- ○ the United States
- ○ another country (please specify)
  [   ]

[CONTINUE]

How much did <u>CHILD'S NAME</u> weigh when born?

Pounds	[ ]
Ounces	[ ]

How sure are you that you remember this weight correctly?

○ Very sure

○ Sure

○ Not sure

○ Not sure at all

What was <u>CHILD'S NAME's</u> length when born?

Inches	[ ]

How sure are you that you remember this length correctly?

○ Very sure

○ Sure

○ Not sure

○ Not sure at all

How would you describe <u>CHILD'S NAME's</u> weight <u>before CHILD'S NAME was 1 year old</u>?

○ Very thin

○ Thin

○ Average

○ Slightly heavy

○ Overweight

How would you describe <u>CHILD'S NAME's</u> weight <u>between age 1 and 2 years</u>?

○ Very thin

○ Thin

○ Average

○ Slightly heavy

○ Overweight

How would you describe <u>CHILD'S NAME's</u> weight <u>now</u>?

○ Very thin

○ Thin

○ Average

○ Slightly heavy

○ Overweight

CONTINUE

How would you rate CHILD'S NAME's general health?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor

**Think about CHILD'S NAME's physical health, which includes physical illness and injury.
During the past 30 days, how many days was CHILD'S NAME's physical health not good?**

[▴▾]

**Think about CHILD'S NAME's mental health, which includes stress, depression, and problems with emotion.
During the past 30 days, how many days was CHILD'S NAME's mental health not good?**

[▴▾]

I am concerned that CHILD'S NAME will become overweight

- ○ Strongly disagree
- ○ Disagree
- ○ Neither
- ○ Agree
- ○ Strongly agree

I am concerned that CHILD'S NAME will have to diet to keep weight under control.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither
- ○ Agree
- ○ Strongly agree

CONTINUE

Think about **'s** beverage habits over the **past year or so.**

About **how often did** drink each of the following beverages?
Remember breakfast, lunch, dinner, snacks and eating out.

	Less than 1 time a week	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	7 days a week	More than 1 time a day
Milk to drink	○	○	○	○	○	○	○	○	○
Real 100% fruit juice (like orange, apple, grape, fresh, frozen or canned [not sodas or other drinks])	○	○	○	○	○	○	○	○	○
Vegetable juice (like tomato juice, V-8 or carrot)	○	○	○	○	○	○	○	○	○
Soft drinks and soda/pop (like Coke or 7-up [not diet soda])	○	○	○	○	○	○	○	○	○
Fruit drinks or other sugar sweetened beverages (like Hawaiian Punch, Hi-C, Kool-Aid, Ocean Spray cranberry juice cocktail, Snapple, Sunny Delight, Country Time Lemonade, Sobe, Arizona Ice Tea, sugar sweetened tea [not diet drinks])	○	○	○	○	○	○	○	○	○

CONTINUE

Think about
what your
child did this
past week

	0 day	1 day	2 days	3 days	4 days	5 days	6 days	7 days
In the past week, how many days did walk continuously for at least 10 minutes at a time to do things like go for a walk, walk the dog, or walk to school?	○	○	○	○	○	○	○	○
In the past week, how many days did run, jump, or do other things that made him or her sweat or breathe a little harder than usual?	○	○	○	○	○	○	○	○
In the past week, how many days did run, jump, or do other things that made him or her sweat or breathe a lot harder than usual?	○	○	○	○	○	○	○	○

In the past week, how much time each day did spend watching TV or movies, or playing games on a computer or smart phone?
(Please report both hours and minutes; for instance, if your child spent 8 1/2 hours watching TV and playing computer games, select 8 hours in the first box, and 30 minutes in the second box)

Hours [▲▼]
Minutes [▲▼]

In the past week, how many hours did usually nap each day?
(Please report both hours and minutes; for instance, if your child spent 2 hours and 0 minutes napping, select 2 hours in the first box, and 0 minutes in the second box)

Hours [▲▼]
Minutes [▲▼]

In the past week, about how many hours of actual sleep did usually get each night? This may be different than the number of hours spent in bed.
(Please report both hours and minutes; for instance, if your child spent 9 hours and 15 minutes sleeping, select 9 hours in the first box, and 15 minutes in the second box)

Hours [▲▼]
Minutes [▲▼]

During the past month, what was the overall quality of 's sleep?
○ Very good
○ Good
○ OK
○ Bad
○ Very bad

CONTINUE

Please Tell Us More About

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
is more likely to watch TV than be physically active.	○	○	○	○	○
is more likely to play inside, or do things like read or draw, than be physically active.	○	○	○	○	○
just does not enjoy being physically active.	○	○	○	○	○
is energetic and active.	○	○	○	○	○

CONTINUE

Please tell us about

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
enjoys tasting new foods.	○	○	○	○	○
refuses new foods at first.	○	○	○	○	○
Given the chance, would eat most of the time.	○	○	○	○	○
If I allowed it, would eat too much.	○	○	○	○	○
eats more when feeling nervous.	○	○	○	○	○
decides to not like a food, without even tasting it.	○	○	○	○	○
is interested in tasting food has not tasted before.	○	○	○	○	○
eats more when feeling worried.	○	○	○	○	○

CONTINUE

Select the **first** picture that shows someone that you think is underweight.
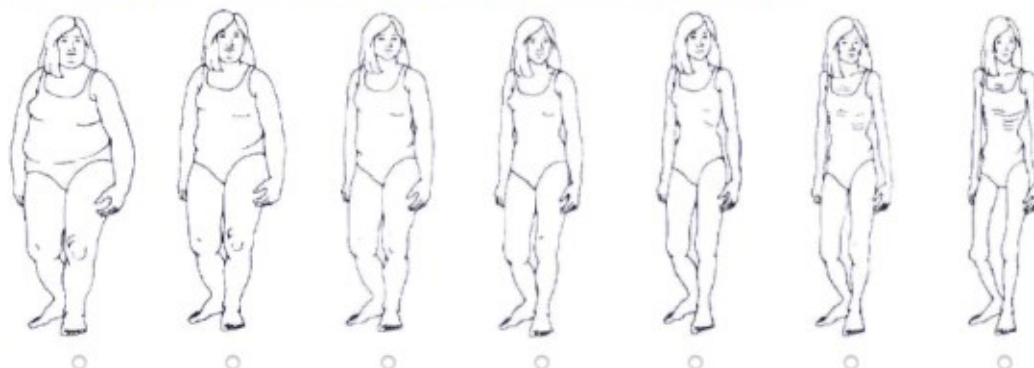
Select the **first** picture that shows someone that you think is overweight.
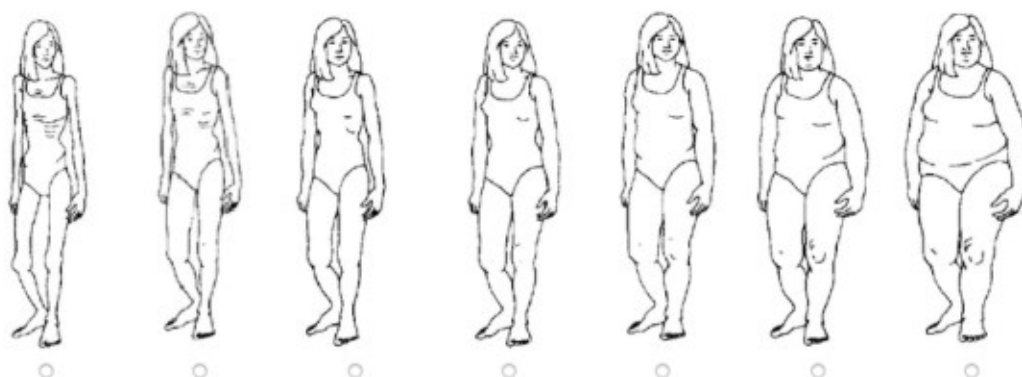
CONTINUE

How would you rate your general health?
- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor

Think about your physical health, which includes physical illness and injury. **During the past 30 days,** how many days was your physical health <u>not</u> good?

[▢ ⬍]

Think about your mental health, which includes stress, depression, and problems with emotions. **During the past 30 days,** how many days was your mental health <u>not</u> good?

[▢ ⬍]

During the past 30 days, about how many days did poor **physical or mental health** keep you from doing your usual activities, such as self-care, work, or recreation?

[▢ ⬍]

On how many of the <u>last 30 days</u> did you smoke <u>one or more</u> cigarettes?

[▢ ⬍]

CONTINUE

Think about the last two weeks

	Not at all	Several days	More than half the days	Nearly every day
In the last 2 weeks, how often did you have little interest or pleasure in doing things?	○	○	○	○
In the last 2 weeks, how often did you feel down, depressed, or hopeless?	○	○	○	○
In the last 2 weeks, how often did you feel unable to control the important things in your life?	○	○	○	○
In the last 2 weeks, how often did you feel confident in your ability to handle your personal problems?	○	○	○	○
In the last 2 weeks, how often did you feel that things were going your way?	○	○	○	○
In the last 2 weeks, how often did you feel that difficulties were piling up so high that you could not overcome them?	○	○	○	○

CONTINUE

Which are you?

○ Male

○ Female

What country were you born in?

○ United States

○ Other, please specify

What language do you speak at home?

○ English

○ Spanish

○ Other, please specify

What is your ethnicity/race? (*Choose all that apply*)

☐ Hispanic, Latino, or Spanish

☐ White

☐ Black or African American

☐ American Indian or Alaskan Native

☐ Asian Indian

☐ Asian (e.g., Japanese, Chinese, Korean)

☐ Pacific Islander

☐ Other, please specify

What is your highest level of education?

○ less than high school

○ high school graduate

○ some college

○ associates degree/technical school graduate

○ baccalaureate degree

○ advanced college degree

○ Other, please specify

CONTINUE

What is your age?

[⌄]

How many children under the age of 18 live with you?

[⌄]

What are the ages of all the children who live with you most of the time?
(Check all that apply)

☐ Less than 1 year (12 months or less)   ☐ 10

☐ 1 (13 to 24 months old)   ☐ 11

☐ 2 (25 to 36 months old)   ☐ 12

☐ 3 (37 to 48 months old)   ☐ 13

☐ 4 (49 to 60 months old)   ☐ 14

☐ 5   ☐ 15

☐ 6   ☐ 16

☐ 7   ☐ 17

☐ 8   ☐ 18 or older

☐ 9   ☐ No children live with me most of the time

Do you have regular email or online access?

○ Yes

○ No

In your family, who makes <u>most</u> of the decisions about which foods to buy and serve at meals?

○ Me

○ My partner/spouse

○ My kids

○ Someone else, please specify

[   ]

CONTINUE

What is your occupation?

[_____]

How many hours of paid employment do you usually have each week?

- ○ 0 hours
- ○ 1 to 9 hours
- ○ 10 to 19 hours
- ○ 20 to 29 hours
- ○ 30 to 39 hours
- ○ 40 hours
- ○ More than 40 hours

How many times did you travel away on vacation with your family during the past 12 months?

- ○ Never
- ○ 1 time
- ○ 2 times
- ○ 3 or more times

Do you have your own bedroom (for just you, or you and your partner/spouse?)

- ○ Yes
- ○ No

What is your current relationship status?

- ○ single, never married
- ○ single, living with domestic partner
- ○ married
- ○ divorced
- ○ widowed

CONTINUE

Your Spouse or Partner

What is your spouse or partner's highest level of education?

- less than high school
- high school graduate
- some college
- associates degree/technical school graduate
- baccalaureate degree
- advanced college degree
- Other, please specify

What is your spouse or partner's occupation?

How many hours of paid employment does your spouse or partner usually have each week?

- My spouse or partner does not work
- 1 to 9 hours
- 10 to 19 hours
- 20 to 29 hours
- 30 to 39 hours
- 40 hours
- More than 40 hours

CONTINUE

Which picture is most like your figure?

CONTINUE

Please indicate how you would like your $15 payment for completing this survey. (eGift cards are delivered in about 3 days to your email address)

- ○ $15 Kmart & Sears eGift Card
- ○ $15 Amazon.com eGift Card
- ○ $15 Toys "R" Us eGift Card
- ○ $15 Michael's eGift Card
- ○ $15 Kohl's eGift Card
- ○ $15 Bed, Bath, and Beyond eGift Card

Please fill in the boxes below so we can send you your $15 eGift card.

Name	
Email address (please do not use a yahoo address; eGift Cards often can't be delivered)	
Street Address	
City	
State	
Zip Code	
Phone Number (with voicemail)	

How did you hear about HomeStyles?

- ○ My Home Visitor or Home Visitation Program
- ○ A friend or family member
- ○ My doctor
- ○ My child's school, preschool, or daycare
- ○ An advertisement on Facebook
- ○ Other, please specify

CONTINUE

Congratulations!
You have completed Survey Café 1

You will now connect to pages that let you access HealthyHomeStyles.com.

At the HealthyHomeStyles.com website you will be able to
- **get HomeStyles Guide 1**
- **have a pedometer sent to you**
- **have a kit for measuring height sent to you**

Please be sure to check your email
and SPAM filters for the eGift cards.

CONTINUE

APPENDIX C

¿Prefieres completar la encuesta en inglés o español?

○ español

○ inglés

CONTINUAR

FINAL SURVEY DESIGN AND LAYOUT IN SPANISH

Estimados padres de niños pequeños (edades de 2 a 7 años),

¿Deseas tener niños más saludables? ¡Este proyecto es para ti!

Investigadores de la Universidad de Rutgers y de la Universidad de Arizona invitan a unos 1.000 padres de niños preescolares a registrarse en el programa HomeStyles. Este programa los ayuda a organizar sus hogares y su estilo de vida para criar niños felices, seguros y saludables.

Esto es lo que hacen las familias de Homestyles. En cada nivel, ganarán dinero y podrán recibir regalos para ayudarlos a hacer cambios.
• **Nivel 1:** Regístrate y dedica unos 40 minutos llenando las encuestas sobre el tu entorno familiar, estilo de vida y familia. Te enviaremos podómetros para que tú y tu niño preescolar los usen para contar el número de pasos que tomen. Completa este nivel y ganarás $15.
• **Nivel 2:** Durante los próximos 4 meses, lee 1 nueva guía del programa HomeStyles al mes. Leer una guía te tomará unos 15 minutos. Luego, pasa unos minutos por día haciendo cambios rápidos y fáciles en el estilo de vida y el hogar. Dedica alrededor de 40 minutos para llenar las encuestas. Completa este nivel y ganarás $18.
• **Nivel 3:** Este es muy parecido al Nivel 2, con la única diferencia de que vas a recibir nuevas guías. Tu y tu niño preescolar también usarán podómetros. Completa este nivel y ganarás $20.
• **Nivel 4**: Durante los próximos 2 meses lee 1 nueva guía del programa HomeStyles y toma unos minutos haciendo pequeños cambios diariamente. Dedica unos 40 minutos para llenar las encuestas. Completa este nivel y ganarás $35.
• **Nivel 5:** Este es muy parecido al Nivel 4, excepto que se escoge una guía diferente. Tú y tu niño preescolar también usarán podómetros. Completa este nivel y ganarás $40.

Entre cada nivel, puedes ganar bonificaciones por hacer cosas sencillas tales como visitar la página Web HomeStyles, charlar con un Especialista HomeStyles, o responder a recordatorios amistosos que te enviamos. Para mantenerte inscrita en el programa HomeStyles, tendrás que completar cada nivel en orden. Se necesitan unos 15 a 18 meses para leer e poner en práctica todos los niveles.

Inscribirte en el proyecto HomeStyles es totalmente voluntario, gratuito, y tiene poco riesgo. Toda la información que se proporciona es confidencial y no será atribuible. Reservamos el derecho de relevarte de alta del proyecto, si no estás dispuesto a cumplir con el espíritu del proyecto.

Si tienes algunas preguntas sobre el proyecto HomeStyles o sobre tus derechos como participante en el estudio, por favor comunícate conmigo al teléfono 855-333-7724 o a la dirección de email HomeStyles@aesop.rutgers.edu. También puedes comunicarte con la Oficina de Investigación y Programas Patrocinados de Rutgers al 848-932-0150 o a humansubjects@orsp.rutgers.edu.

Si aceptas participar en el proyecto HomeStyles, por favor, haz un clic en la tecla ACEPTAR a continuación. Imprime una copia de esta carta para tus archivos. Esperamos contar con tu participación —¡estamos seguros de que lo vas a disfrutar!

Atentamente,

Carol Byrd-Bredbenner, PhD, RD, FAND
Profesora/Especialista del Programa de Extensión

Si aceptas participar en este estudio, haz clic en "ACEPTAR "

Imprimir

○ ACEPTAR
○ NO ACEPTAR

CONTINUAR

Por favor, toma unos minutos para responder a las siguientes preguntas para determinar si eres elegible para participar. No hay pago por completar las preguntas en las siguientes páginas.

¿Qué edad tienes?

[dropdown]

¿Cuántos niños menores de 18 años viven contigo?

[dropdown]

¿Qué edades tienen los niños que viven contigo?
(Escoge todas las que necesites)

☐ Menos de 1 año	☐ 10
☐ 1 (13 a 24 meses de edad)	☐ 11
☐ 2 (25 a 36 meses de edad)	☐ 12
☐ 3 (37 a 48 meses de edad)	☐ 13
☐ 4 (49 a 60 meses de edad)	☐ 14
☐ 5	☐ 15
☐ 6	☐ 16
☐ 7	☐ 17
☐ 8	☐ Mayor de 18 años
☐ 9	☐ No vivo con niños la mayor parte del tiempo

¿Tienes correo electrónico regular o acceso al Internet?
○ Sí
○ No

En tu familia, ¿quién toma la mayoría de las decisiones sobre qué alimentos comprar y servir en las comidas?
○ Yo
○ Mi pareja/cónyuge
○ Mis niños
○ Otra persona, Especifica, por favor
[text field]

¿En qué estado vives?

[dropdown]

CONTINUAR

Gracias! Por favor ponga su nombre y su email!

Nombre	
Email	

CONTINUAR

Bienvenidos a la encuesta "Survey Café # 1"
del proyecto HomeStyles

¡Bienvenido!

CONTINUAR

Esta encuesta nos ayudará a aprender más sobre las familias.

A medida que la completes, por favor, recuerda:
- no hay respuestas correctas o incorrectas
- todas tus respuestas son confidenciales

CONTINUAR

Por favor, cuéntanos acerca de tu familia

	Casi nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	Todos los días
¿Cuántos días a la semana desayunan juntos la mayoría de los miembros del hogar?	○	○	○	○	○	○	○	○
¿Cuántos días a la semana almuerzan juntos la mayoría de los miembros del hogar?	○	○	○	○	○	○	○	○
¿Cuántos días a la semana cenan juntos la mayoría de los miembros del hogar?	○	○	○	○	○	○	○	○
¿Cuántos días a la semana tienes comidas familiares en restaurantes de comida rápida tales como McDonalds o Burger King?	○	○	○	○	○	○	○	○
¿Cuántos días a la semana comes comidas familiares enfrente de la TV?	○	○	○	○	○	○	○	○
¿Cuántos días a la semana comes comidas familiares sentado a la mesa de la cocina o del comedor?	○	○	○	○	○	○	○	○
¿Cuántos días a la semana come tu familia comidas en el coche?	○	○	○	○	○	○	○	○

CONTINUAR

Lunes
Martes
Miércoles
Jueves
Viernes
Sábado
Domingo

Piensa en esta última semana

	0 días	1 día	2 días	3 días	4 días	5 días	6 días	7 días
Durante la semana pasada, ¿cuántos días caminaste por lo menos 10 minutos a la vez?	○	○	○	○	○	○	○	○
Durante la semana pasada, ¿cuántos días hiciste actividad física moderada? *La actividad física moderada incluye actividades tales como andar en bicicleta a velocidad normal, barrer, aspirar el piso, rastrillar las hojas o lavar las ventanas.*	○	○	○	○	○	○	○	○
Durante la semana pasada, ¿cuántos días hiciste actividad física vigorosa? *La actividad física vigorosa incluye actividades tales como correr, andar en bicicleta rápidamente, hacer ejercicio aeróbico, excavar o cortar leña.*	○	○	○	○	○	○	○	○

Durante la semana pasada, ¿aproximadamente cuánto tiempo pasaste por día mirando la televisión o películas, jugando juegos en la computadora o en un teléfono inteligente o enviando correos electrónicos o mensajes de texto?
(Por favor, informa las horas y los minutos; por ejemplo, si pasaste 4 horas y 0 minutos viendo la televisión y jugando juegos en tu teléfono inteligente, selecciona 4 horas en el primer cuadro, y 0 minutos en el segundo cuadro)

Horas [⧩]
Minutos [⧩]

Durante la semana pasada, ¿aproximadamente cuánto tiempo dormiste cada día generalmente? *Esto puede ser diferente al número de HORAS que pasaste acostado en la cama. (Por favor, informa las horas y los minutos; por ejemplo, si pasaste 9 horas y 15 minutos durmiendo, selecciona 9 horas en el primer cuadro, y 15 minutos en el segundo cuadro)*

Horas [⧩]
Minutos [⧩]

CONTINUAR

Dinos sobre ti

¿Cómo calificarías generalmente la calidad de tu sueño?

- ○ Muy bueno
- ○ Bueno
- ○ Regular
- ○ Malo
- ○ Muy Malo

Cuando haces los mandados, ¿cómo te transportas generalmente?

- ○ Auto
- ○ Bicicleta
- ○ Motocicleta
- ○ Autobús
- ○ Metro
- ○ Tren
- ○ Otro, especificar

¿Cuántos autos, camionetas o camiones tiene tu familia?

CONTINUAR

Tu tiempo

	Casi nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la sem...
Durante el mes pasado, ¿con qué frecuencia jugaste activamente en tu casa por lo menos 15 minutos con tus niños preescolares? *Esto incluye actividades tales como bailar, saltar, payasadas o "lucha libre".*	○	○	○	○	○	○	○
Durante el mes pasado, ¿con qué frecuencia jugaste activamente al aire libre por lo menos 15 minutos con tus niños preescolares? *Esto podría incluir dar un paseo juntos, jugar en los columpios o jugar a juegos como "corre que te pillo".*	○	○	○	○	○	○	○
Durante el mes pasado, ¿con qué frecuencia te observaron tus niños preescolares hacer actividad física moderada? *La actividad física moderada incluye actividades tales como andar en bicicleta a velocidad normal, barrer, aspirar el piso, rastrillar las hojas, pasear al perro o lavar las ventanas.* Piensa solamente las veces que hiciste estas actividades por lo menos 10 minutos a la vez.	○	○	○	○	○	○	○
Durante el mes pasado, ¿con qué frecuencia te observaron tus niños preescolares hacer actividad física vigorosa? *La actividad física vigorosa incluye actividades tales como correr, andar en bicicleta a una velocidad rápida, ejercicios aeróbicos, excavar o cortar leña.* Piensa solamente las veces que hiciste estas actividades por lo menos 10 minutos a la vez.	○	○	○	○	○	○	○
Durante el mes pasado, ¿con qué frecuencia te observaron tus niños preescolares sentado por más de 2 horas diarias usando computadoras, tabletas, teléfonos inteligentes o jugando a juegos de video?	○	○	○	○	○	○	○
Durante el mes pasado, ¿con qué frecuencia te observaron tus niños preescolares mirar la televisión por más de 2 horas diarias?	○	○	○	○	○	○	○

CONTINUAR

Por favor, dinos sobre ti

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Mientras menos esfuerzo tengo que poner en la preparación de una comida, mejor.	○	○	○	○	○
Las comidas con mi familia son generalmente estresantes.	○	○	○	○	○
No vale la pena el esfuerzo para comer juntos en familia.	○	○	○	○	○
No me molesta si la preparación de la comida me toma algo de esfuerzo.	○	○	○	○	○
Hay muchas disputas durante las comidas familiares.	○	○	○	○	○
No tengo suficiente tiempo o energía para preparar comidas para mis niños.	○	○	○	○	○
Todos estamos demasiados ocupados para cenar juntos.	○	○	○	○	○
No tengo suficiente tiempo ni energía para darle de comer a mis niños "correctamente".	○	○	○	○	○
Es importante que mi familia coma en conjunto a menudo.	○	○	○	○	○
Un bebé gordito es un bebé saludable.	○	○	○	○	○
Disfruto de preparar comidas.	○	○	○	○	○
No tengo las aptitudes necesarias para preparar alimentos saludables.	○	○	○	○	○

CONTINUAR

	No me siento confiado en absoluto	No me siento confiado	Me siento confiado	Me siento bastante confiado	Me siento muy confiado
¿Qué tan confiado estás que vas a poder ayudar a tu niño de edad preescolar a tener y mantener un peso saludable?	○	○	○	○	○
¿Qué tan confiado estás de poder dejar a tus niños preescolares decidir cuánto comer en las comidas?	○	○	○	○	○
¿Qué tan confiado estás de que vas a hacer que tus niños preescolares desayunen la mayoría de los días de la semana?	○	○	○	○	○
¿Qué tan confiado estás de que vas a hacer que tus niños preescolares consuman frutas y vegetales varias veces por día?	○	○	○	○	○
¿Qué tan confiado estás de que vas a hacer que tus niños preescolares beban menos bebidas azucaradas?	○	○	○	○	○
¿Qué tan confiado estás de que vas a poder ayudar a tus niños preescolares a no comer en exceso?	○	○	○	○	○

CONTINUAR

	No me siento confiado en absoluto	No me siento confiado	Me siento confiado	Me siento bastante confiado	Me siento muy confiado
¿Qué tan confiado estás de que vas a hacer que tus niños preescolares correteen y gasten energía todos los días?	○	○	○	○	○
¿Qué tan confiado estás de que vas a poder limitar el tiempo que tus niños preescolares pasan jugando con computadoras, tabletas, videojuegos y teléfonos inteligentes?	○	○	○	○	○
¿Qué tan confiado estás de que vas a poder limitar el tiempo que tus niños preescolares pasan mirando la TV y los DVD?	○	○	○	○	○
¿Qué tan confiado estás de que no vas a permitir que tus niños preescolares coman mientras miran TV?	○	○	○	○	○
¿Qué tan confiado estás de que vas a explicarle a tus niños preescolares que generalmente los anuncios de alimentos en la televisión tratan que ellos compren alimentos poco saludables?	○	○	○	○	○
¿Qué tan confiado estás de que vas a ayudar a que tus niños preescolares duerman lo suficiente todas las noches para que amanezcan descansados?	○	○	○	○	○

CONTINUAR

¿Qué opinas?

	No me siento confiado en absoluto	No me siento confiado	Me siento confiado en absoluto	Me siento bastante confiado	Me siento muy confiado
¿Qué tan confiado estás de que en la mayoría de los días del año que viene vas a caminar por lo menos 10 minutos a la vez?	○	○	○	○	○
Qué tan confiado estás de que en la mayoría de los días del año que viene vas a hacer actividad física moderada (como andar en bicicleta a una velocidad regular, barrer, aspirar el piso, rastrillar las hojas o lavar ventanas)?	○	○	○	○	○
¿Qué tan confiado estás de que en la mayoría de los días del año que viene vas a hacer actividad física vigorosa (como correr, andar en bicicleta a una velocidad rápida, ejercicios aeróbicos, excavar o cortar leña)?	○	○	○	○	○
¿Qué tan confiado estás de que en el año que viene no vas a aumentar de peso?	○	○	○	○	○
Qué tan confiado estás de que en el año que viene vas a comprar mayormente alimentos saludables?	○	○	○	○	○

CONTINUAR

¿Qué opinas?

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
El consumo de alimentos saludables me ayudará a tener más energía.	○	○	○	○	○
El consumo de alimentos saludables me ayudará a tener un peso más saludable.	○	○	○	○	○
El consumo de alimentos saludables me ayudará a tener mejor aspecto.	○	○	○	○	○
El consumo de alimentos saludables me ayudará a ser más feliz.	○	○	○	○	○
El consumo de alimentos saludables me ayudará a sentirme mejor.	○	○	○	○	○
El consumo de alimentos saludables me ayudará a ser un buen ejemplo para mis niños.	○	○	○	○	○

CONTINUAR

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Hacer 60 minutos de actividad física casi todos los días me ayudará a tener más energía.	○	○	○	○	○
Hacer 60 minutos de actividad física casi todos los días me ayudará a tener un peso más saludable.	○	○	○	○	○
Hacer 60 minutos de actividad física casi todos los días me ayudará a tener mejor aspecto.	○	○	○	○	○
Hacer 60 minutos de actividad física casi todos los días me ayudará a ser más feliz.	○	○	○	○	○
Hacer 60 minutos de actividad física casi todos los días me ayudará a sentirme mejor.	○	○	○	○	○
Hacer 60 minutos de actividad física casi todos los días me ayudará a ser un buen ejemplo para mis niños.	○	○	○	○	○

CONTINUAR

¿Qué opinas?

	Muy importante	Importante	En cierto modo importante	No es importante
Aspirar con frecuencia las alfombras en mi casa con una aspiradora con un filtro de alta eficiencia es _____.	○	○	○	○
La limpieza inmediata de derrames en mi casa es _____.	○	○	○	○
Mantener los cables eléctricos en mi hogar fuera del alcance de mis niños es _____.	○	○	○	○
Seguir cuidadosamente las instrucciones en las etiquetas de los productos de limpieza es _____.	○	○	○	○
Guardar siempre los productos de limpieza y pesticidas en lugares que mis niños no pueden ver o alcanzar es _____.	○	○	○	○
Comprobar el funcionamiento de los detectores de monóxido de carbono en mi casa al menos una vez por semana es _____.	○	○	○	○
La inspección y limpieza de los tubos de chimeneas, hornos y estufas de leña en mi casa por lo menos una vez al año es _____.	○	○	○	○

CONTINUAR

	Muy importante	Importante	En cierto modo importante	No es importante
Mantener las medicinas en envases a prueba de niños y guardarlas donde mis niños no puedan verlas ni alcanzarlas es _____.	○	○	○	○
Eliminar la pintura descascarada o pelada en mi casa es _____.	○	○	○	○
Poner las sobras en el refrigerador dentro de las 2 horas es _____.	○	○	○	○
Comprobar frecuentemente la temperatura de mi refrigerador es _____.	○	○	○	○
No permitir fumar tabaco en mi casa es _____.	○	○	○	○
Hacer evaluar el nivel de radón en mi casa es _____.	○	○	○	○
Hacer que el aire dentro de mi casa huela limpio y fresco es _____.	○	○	○	○
El uso de extractores de aire en el baño cada vez que nos duchamos o bañamos es _____.	○	○	○	○

CONTINUAR
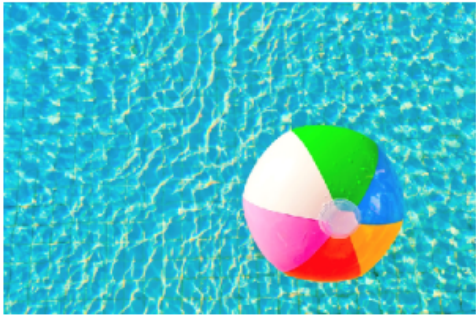
	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Disfruto de planificar actividades tales como las vacaciones con mucha anticipación.	○	○	○	○	○
Me siento seguro de mis aptitudes como padre/madre.	○	○	○	○	○
Frecuentemente llego tarde a las citas.	○	○	○	○	○
Me gusta enfrentar situaciones que requieran una gran cantidad de consideración.	○	○	○	○	○
A veces no soy tan confiable como debiera ser.	○	○	○	○	○
Parece que nunca soy capaz de organizarme.	○	○	○	○	○
Completo mis quehaceres inmediatamente.	○	○	○	○	○
Hablo con mis niños preescolares mientras hago mis quehaceres domésticos.	○	○	○	○	○

CONTINUAR

¿Qué opinas?

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Consumo los alimentos que quiero que consuman mis niños preescolares.	○	○	○	○	○
Planifico las comidas para mis niños preescolares por lo menos con un día de anticipación.	○	○	○	○	○
Trato de <u>no</u> comer alimentos poco saludables tales como galletas y refrescos cuando mis niños preescolares están cerca.	○	○	○	○	○
Planifico las comidas para mis niños preescolares con anticipación cuando sé que voy a estar ocupado.	○	○	○	○	○

CONTINUAR

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Mis niños preescolares siempre deben comer todo los alimentos servidos en su plato.	○	○	○	○	○
Realmente tengo que ejercer presión sobre mis niños preescolares para que coman vegetales.	○	○	○	○	○
Realmente tengo que ejercer presión sobre mis niños preescolares para que coman frutas.	○	○	○	○	○
Realmente tengo que ejercer presión sobre mis niños preescolares para que beban leche.	○	○	○	○	○
Permito que mis niños preescolares decidan cuándo comer meriendas.	○	○	○	○	○
Yo "me dejo llevar por la corriente" y no planifico las cenas para mis niños preescolares ni para la familia.	○	○	○	○	○
Mis niños preescolares aprenden de mí a comer alimentos saludables.	○	○	○	○	○
Permito que mis niños preescolares decidan cuándo comer.	○	○	○	○	○
Guardo los alimentos que no quiero que mis niños preescolares coman en lugares que les sean fáciles de ver y alcanzar.	○	○	○	○	○

CONTINUAR

¿Qué opinas ?

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Yo decido las cantidades de alimentos que mis niños preescolares consumen en las comidas.	○	○	○	○	○
Tengo que asegurarme de que mis niños preescolares no coman demasiadas meriendas saladas tales como papitas fritas.	○	○	○	○	○
Mi familia sabe que no me gusta cuando la comida no se come y se desperdicia.	○	○	○	○	○
Mis niños preescolares me ven comer comida chatarra.	○	○	○	○	○
Establezco reglas para mis niños preescolares acerca de la cantidad de frutas y vegetales que tienen que comer.	○	○	○	○	○
Tengo que asegurarme de que mis niños preescolares no coman demasiados dulces tales como galletas y refrescos.	○	○	○	○	○
Es saludable que los niños pequeños sean gorditos.	○	○	○	○	○

CONTINUAR

¿Con qué frecuencia haces esto?

	Nunca	Rara vez	A veces	La mayoría del tiempo	Siempre
Yo le prometo a mis niños preescolares cualquier <u>otra</u> cosa que no sea un alimento si comen (por ejemplo, *Si comes tus arvejas, podemos jugar a la pelota después de la cena*).	○	○	○	○	○
Si mis niños preescolares se portan mal, no les permito comer uno de sus alimentos favoritos.	○	○	○	○	○
Durante el mes pasado, <u>mi familia</u> se quejó de haber tenido que participar en actividades físicas.	○	○	○	○	○
Durante el mes pasado, <u>mi familia</u> se quejó de haber tenido que comer alimentos saludables.	○	○	○	○	○
A medida que crecen, la mayoría de los niños gorditos pierden su gordura.	○	○	○	○	○

CONTINUAR

Selecciona la primera foto de un niño que opinas que tiene bajo peso.

Selecciona la primera foto de un niño que opinas que tiene sobrepeso.
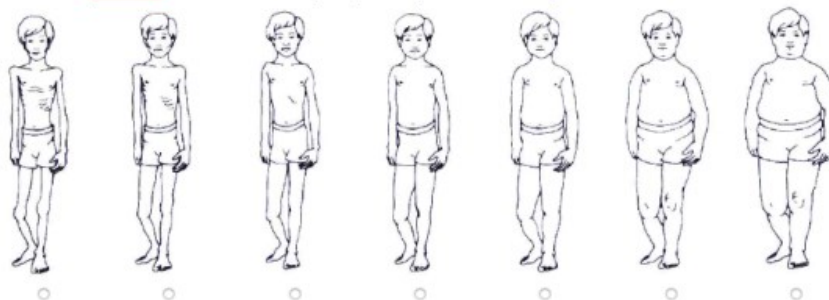
CONTINUAR

¿Con qué frecuencia haces esto?

	Nunca	Rara vez	A veces	La mayoría del tiempo	Siempre
Alerto a mis niños preescolares que les voy a quitar <u>algo</u> que no sea comida, si no comen (por ejemplo, *Si no comes tu carne, no habrá tiempo de televisión después de la cena*).	○	○	○	○	○
Animo a mis niños preescolares a comer algo usando los alimentos como recompensa (por ejemplo, *Si comes todos tus vegetales, te daré postre*).	○	○	○	○	○
Durante el mes pasado, <u>me quejé</u> con mi familia de tener que participar en la actividad física.	○	○	○	○	○
Cuando mis niños preescolares se portan bien yo los premio con algo de comer.	○	○	○	○	○
Durante el mes pasado, <u>me quejé</u> con mi familia de tener que comer alimentos saludables.	○	○	○	○	○

CONTINUAR

Mi hogar

En mi hogar...

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De Acuerdo	Totalmente de acuerdo
Mi familia casi siempre parece estar apresurada.	○	○	○	○	○
Nuestro hogar parece un manicomio.	○	○	○	○	○
Hay tanto ruido en nuestra casa que es difícil concentrarse.	○	○	○	○	○
Nuestra familia pelea mucho.	○	○	○	○	○
Los miembros de nuestra familia frecuentemente se critican entre sí.	○	○	○	○	○
Los miembros de nuestra familia positivamente se ayudan y se aportan el uno al otro.	○	○	○	○	○
En nuestra familia tenemos una fuerte unión familiar.	○	○	○	○	○
Mi familia se lleva bien el uno con el otro.	○	○	○	○	○

CONTINUAR

¡Toma un descanso virtual!

Respira hondo y piensa en el olor y el sabor de las palomitas de maíz. ¡Imagínate su textura crujiente!

Introduzca su dirección de email.

Usted tendrá que introducir este correo electrónico para continuar con la siguiente parte de la encuesta. Asegúrese de utilizar la misma dirección de email para acceder a todas las encuestas que usted tendrá que tomar en HomeStyles.

<u>No</u> compartiremos su correo electrónico con cualquier otra persona.

Por favor, provee tu email [   ]

Puedes continuar tomando la encuesta "Survey Cafe # 1", o toma un descanso y vuelve más tarde. Si vuelves más tarde, te enviaremos un email con el enlace a la siguiente parte de la encuesta. Tendrás que ingresa tu email para acceder a la encuesta.

○ Quiero continuar tomando la encuesta "Survey Cafe # 1" ahora

○ Quiero continuar la encuesta "Survey Cafe # 1" más tarde

Si tienes algún problema, comunícate con nosotros llamando gratis al número (855) 333-7724 o mándanos un email a homestyles@aesop.rutgers.edu.

CONTINUAR

Inicie sesión.

Ingresa tu dirección de email otra vez. Si tienes algún problema, comunícate con nosotros llamando gratis al número (855) 333-7724 o mándanos un email a homestyles@aesop.rutgers.edu.

CONTINUAR

Piensa en las cosas que tus hijos preescolares hacen para estar activos. Esto incluye cosas que les hacen sudar y respirar más de lo normal, como andar en scooters o triciclos, correr, saltar y payasadas o "lucha libre".

Ahora piensa en tus niños preescolares y tu casa.

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Mis niños preescolares tienen bastante espacio para correr y gastar energía dentro de nuestra casa.	○	○	○	○	○
Mis niños preescolares tienen hermanos o amigos que viven cerca con los que pueden correr y gastar energía dentro de la casa.	○	○	○	○	○
Mis niños preescolares tienen juegos de video que les ayudan a mantenerse activos. *Estos son los juegos de video que se juegan de pie y requieren una gran cantidad de movimiento tales como Wii Fit, XBox Kinect.*	○	○	○	○	○
Limito la cantidad de tiempo que le permito a mis niños preescolares correr y gastar energía dentro de nuestra casa.	○	○	○	○	○

Piensa en todas las pelotas, triciclos, bicicletas, monopatines, cuerdas para saltar y otros juguetes que ayudan a tu niño a correr y gastar energía dentro de tu casa. ¿Cuántos de estos juguetes tiene tu niño?

○ 0 a 4
○ 5 a 10
○ 11 a 15
○ 16 a 20
○ 21 a 25
○ más de 25

Piensa en las áreas dentro de tu casa donde tus niños corren y gastan energía. ¿Cuántos saltos mortales o volteretas seguidos podrían hacer sin golpear los muebles o las paredes?

[⇕]

CONTINUAR

	Nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	Todos los días
¿Con qué frecuencia corren y gastan energía tus niños preescolares **dentro** de tu casa?	○	○	○	○	○	○	○	○
¿Con qué frecuencia tus niños preescolares juegan con pelotas, triciclos, bicicletas, monopatines y otros juguetes que le ayudan a niños a correr y gastar energía **dentro** de tu casa?	○	○	○	○	○	○	○	○
¿Con qué frecuencia tus niños preescolares corren y gastan energía **en casa** con sus hermanos o los niños que viven cerca?	○	○	○	○	○	○	○	○

CONTINUAR

Mi casa

Piensa en todos los televisores, reproductores de DVD, computadoras y teléfonos inteligentes en tu casa que funcionan.

¿Cuántos de estos aparatos hay en tu hogar?

TV	Reproductor de DVD	Computadora/Computadora portátil	Teléfono inteligente/Tableta/Tableta LeapPad	Juegos de video que se juegan de pie y requieren mucho movimiento físico (tales como Wii Fit, XBox Kinect)	Juegos de video que normalmente se juegan sentado (tales como Nintendo DS, Playstation, Xbox)
▲▼	▲▼	▲▼	▲▼	▲▼	▲▼

¿Cuáles de estos permites que tus niños preescolares utilicen en sus habitaciones? *(Marca todo lo que corresponda)*

☐ TV

☐ Reproductor de DVD

☐ Computadora/computadora portátil

☐ Teléfono inteligente/Tableta/Tableta LeapPad

☐ Juegos de video que se juegan de pie y requieren mucho movimiento físico (tales como Wii Fit, XBox Kinect)

☐ Juegos de video que normalmente se juegan sentado (tales como Nintendo DS, Playstation, Xbox)

☐ Internet

☐ Ninguno de los anteriores

¿Tienes acceso al Internet en tu casa?

○ Sí

○ No

CONTINUAR

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Es fácil para mis niños preescolares prender la TV o DVD y ver programas o películas con poca o sin ayuda.	○	○	○	○	○
Es fácil para mis niños preescolares prender y jugar con las computadoras y laptops con poca o sin ayuda.	○	○	○	○	○
Es fácil para mis niños preescolares prender y jugar con juegos de video que se juegan de pie y que requieren mucho movimiento físico (como Wii Fit, XBox Kinect) con poca o sin ayuda.	○	○	○	○	○
Es fácil para mis niños preescolares prender y jugar con juegos de video que normalmente se juegan sentados (como Wii Fit, XBox Kinect) con poca o sin ayuda.	○	○	○	○	○
Es fácil para mis niños preescolares prender y jugar con tabletas, teléfonos inteligentes u otros aparatos electrónicos educativos (como LeapPads) con poca o sin ayuda.	○	○	○	○	○

CONTINUAR

	Casi nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	Todos los días
¿Con qué frecuencia está prendida la TV durante las meriendas y comidas en tu casa?	○	○	○	○	○	○	○	○
¿Con qué frecuencia se usa una computadora, tableta, juego de video, teléfono inteligente o aparatos electrónicos educativos (como LeapPad) durante las comidas y meriendas en casa?	○	○	○	○	○	○	○	○

CONTINUAR

¿Cuánto tiempo al día está prendida la TV sin que nadie esté mirándola?
Por favor, indica las horas y los minutos.

horas [▲▼]
minutos [▲▼]

¿Cuánto tiempo al día generalmente permites que tus niños preescolares miren TV o películas en casa?
Por favor, indica las horas y los minutos.
(Si no se limita el tiempo, por favor, responde 24 horas y 0 minutos)

horas [▲▼]
minutos [▲▼]

¿Cuánto tiempo permites que tus niños preescolares jueguen cada día en casa con computadoras, tabletas, juegos de video que normalmente se juegan sentados, teléfonos inteligentes o aparatos electrónicos educativos (como LeapPad)?
Por favor, indica las horas y los minutos.
(Si no se limita el tiempo, por favor, responde 24 horas y 0 minutos)

horas [▲▼]
minutos [▲▼]

¿Cuánto tiempo permites que tus niños preescolares jueguen cada día en casa con juegos de video que se juegan de pie y requieren mucho movimiento físico (como Wii Fit, XBox Kinect)?
Por favor, indica las horas y los minutos.
(Si no se limita el tiempo, por favor, responde 24 horas y 0 minutos)

horas [▲▼]
minutos [▲▼]

CONTINUAR

¿Qué opinas?

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Trato de limitar la cantidad de anuncios de TV que ven mis niños preescolares.	○	○	○	○	○
Trato de limitar los programas de TV y películas que ven mis niños preescolares a aquellos que están diseñados específicamente para niños.	○	○	○	○	○
A menudo hablo con mis niños preescolares sobre los anuncios de TV.	○	○	○	○	○
A menudo hablo con mis niños preescolares sobre los programas de TV, juegos de video o películas.	○	○	○	○	○
No me importa cuánto tiempo pasan mis niños preescolares mirando la TV.	○	○	○	○	○
Mis niños preescolares aprenden mucho mirando la TV.	○	○	○	○	○
Los programas de TV enseñan a mis niños preescolares muchas cosas que los ayudan a tener más éxito en la escuela.	○	○	○	○	○
Solamente les permito a mis niños preescolares ver programas de televisión educativos.	○	○	○	○	○

CONTINUAR

Piensa en tu patio o área <u>afuera</u> de tu casa.

- ○ NO existe un lugar afuera de mi casa **donde mis hijos preescolares pueden jugar de forma activa**
- ○ EXISTE un área afuera de mi casa **donde mis hijos preescolares pueden jugar de forma activa**

CONTINUAR

Piensa en tu patio o área <u>afuera</u> de tu casa.

Piensa en lo que tus hijos preescolares <u>suelen</u> hacer, aunque difiera en ciertos días de la semana o estaciones del año.

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
El patio o área afuera de mi casa tiene suficiente espacio para que mis niños preescolares puedan jugar <u>activamente</u> — juegos tales como corre que te pillo.	○	○	○	○	○
Hay un área pavimentada o plana en el patio o afuera de nuestra casa que es lo suficientemente grande para que mis niños preescolares puedan montar un triciclo, bicicleta, patineta u otro juguete con ruedas sin peligro.	○	○	○	○	○
Mis niños preescolares tienen zapatos y ropa para jugar <u>activamente</u> afuera.	○	○	○	○	○
El patio o área afuera de mi casa tiene suficiente columpios, toboganes (deslizaderas) u otros aparatos que permiten que mis niños preescolares jueguen <u>activamente</u>.	○	○	○	○	○
Mis niños preescolares tienen bastantes juguetes para jugar <u>activamente</u> afuera tal como pelotas, cuerdas de saltar, patines, piscinas para nadar o para niños, hula-hoops o trineos.	○	○	○	○	○
Mis niños preescolares tienen un triciclo, bicicleta, monopatín u otro juguete con ruedas para usar afuera.	○	○	○	○	○

CONTINUAR

	Casi nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	Todos los días
Cuando hace buen tiempo, ¿con qué frecuencia juegan <u>activamente</u> tus niños preescolares en el patio o área **afuera** de tu casa?	○	○	○	○	○	○	○	○

Piensa en el tamaño de los espacios de estacionamiento en el centro comercial.

Ahora, piensa en todas las áreas fuera de tu casa en donde les permites a tus niños preescolares jugar <u>activamente</u> —<u>incluyendo áreas con césped, pavimentadas u otras áreas</u>.

Si estas áreas se convirtieran en un estacionamiento, ¿cuántos lugares para estacionarse habría?

[⇕]

CONTINUAR

Piensa en tu <u>barrio</u> y la zona <u>cercana donde vives</u>.

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo	No se
Existen áreas como parques, piscinas y parques infantiles cerca de mi casa en donde mis niños preescolares pueden jugar activamente.	○	○	○	○	○	○
Las áreas exteriores en mi vecindario tienen suficientes columpios, toboganes y otros aparatos para jugar que mis niños preescolares pueden usar.	○	○	○	○	○	○
Las áreas exteriores en mi vecindario donde mis niños preescolares pueden jugar activamente son seguras.	○	○	○	○	○	○
Las áreas exteriores en mi vecindario donde mis niños preescolares pueden jugar están limpias.	○	○	○	○	○	○
Las áreas exteriores en mi vecindario donde mis niños preescolares pueden jugar están llenas de gente.	○	○	○	○	○	○

CONTINUAR

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Hay tanto tráfico cerca de donde yo vivo que no me siento segura para caminar en el área.	○	○	○	○	○
Me siento segura del crimen en mi vecindario y áreas cercanas.	○	○	○	○	○
En mi vecindario y en áreas cercanas, no hay peligro de insectos que piquen tales como mosquitos, garrapatas y alacranes, y animales tales como perros que corren sueltos.	○	○	○	○	○
En donde yo vivo es fácil para mí ir a un supermercado grande (no a una bodega, deli o un mercado).	○	○	○	○	○

CONTINUAR

*Piensa en lo que tus hijos preescolares **suelen** hacer, aunque difiera en ciertos días de la semana o estaciones del año.*

	Casi nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	Todos los días
Cuando hace buen tiempo, ¿con qué frecuencia juegan activamente tus niños preescolares en áreas exteriores tales como parques, piscinas, parques infantiles, cerca de tu casa?	○	○	○	○	○	○	○	○
¿Con qué frecuencia tus niños preescolares juegan activamente en un centro de recreo gratuito o de bajo costo o en cualquier otro lugar para jugar adentro cerca de tu casa?	○	○	○	○	○	○	○	○

¿Tienes un perro?
○ Sí
○ No

CONTINUAR

	Casi nunca	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	Todos los días
¿Con qué frecuencia tus niños preescolares pasean al perro o juegan afuera con él (por ejemplo, haciendo cosas como lanzar pelotas)?	○	○	○	○	○	○	○	○

CONTINUAR

Piensa en tus hábitos de alimentación en el último año.

¿Con qué frecuencia consumes los siguientes alimentos? Ten en cuenta el desayuno, almuerzo, cena, meriendas y comidas fuera de la casa.

	Menos de 1 vez a la SEMANA	Una vez a la SEMANA	2 a 3 veces a la SEMANA	4 a 6 veces a la SEMANA	Una vez al DIA	2 o más veces al DIA
Cualquier fruta, fresca o en lata (el jugo no cuenta)	○	○	○	○	○	○
Ensalada verde	○	○	○	○	○	○
Papas, cualquier tipo, incluyendo fritas, horneadas, o en puré	○	○	○	○	○	○
Sopas de verduras o caldos con verduras	○	○	○	○	○	○
Cualquier otras verduras, incluyendo ejotes, guisantes, elote o mazorca (maíz), brócoli o cualquier otro	○	○	○	○	○	○
Cereales con fibra como Raisin Bran, Shredded Wheat, Fruit-n-fiber	○	○	○	○	○	○
Frijoles como frijoles cocidos al horno, pinto, riñón, lentejas (no ejotes o guisantes)	○	○	○	○	○	○
Pan oscuro como pan integral o pan de centeno	○	○	○	○	○	○

CONTINUAR

Piense en sus hábitos de alimentación en **el último año**.

¿Con qué frecuencia consumes los siguientes alimentos? Ten en cuenta el desayuno, almuerzo, cena, meriendas y comidas fuera de la casa.

Por favor, ten en cuenta que las opciones de respuesta son diferentes a las de la página anterior.

	Una vez por MES o menos	2-3 veces por MES	1-2 veces por SEMANA	3-4 veces por SEMANA	5 o mas veces por SEMANA
Hamburguesas, picadillo, carne burritos o tacos	○	○	○	○	○
Carne de vaca o carne de cerdo, como filetes, res asado, costillas, o en sandwiches	○	○	○	○	○
Pollo frito	○	○	○	○	○
Hot dogs, salchicha polaca, salchicha italiana	○	○	○	○	○
Fiambres, carnes de almuerzo, jamon (no bajo en grasa)	○	○	○	○	○
Tocino (beicon) o salchicha para el desayuno	○	○	○	○	○
Aderezos o salsa para ensaladas (no bajo en grasa)	○	○	○	○	○
Margarina, mantequilla or mayonesa en al pan o patatas	○	○	○	○	○
Margarina, mantequilla o aceite al cocinar	○	○	○	○	○

CONTINUAR

Piense en sus hábitos de alimentación en **el último año**.

¿Con qué frecuencia consumes los siguientes alimentos? Ten en cuenta el desayuno, almuerzo, cena, meriendas y comidas fuera de la casa.

	Una vez por MES o menos	2-3 veces por MES	1-2 veces por SEMANA	3-4 veces por SEMANA	5 o mas veces por SEMANA
Huevos (<u>no</u> solo blancos del huevo o "Egg Beaters")	○	○	○	○	○
Pizza	○	○	○	○	○
Queso o queso para untar (<u>no</u> bajo en grasa)	○	○	○	○	○
Leche entera	○	○	○	○	○
Patatas a la francesa, patatas fritas	○	○	○	○	○
Papitas, chips de maíz, palomitas de maíz, galletas de bocado	○	○	○	○	○
Donas, pasteles, galletas, pan dulce o cualquier otro tipo de reposteria bienes (<u>no</u> bajo en grasa)	○	○	○	○	○
Helados (<u>no</u> sorbete o leche congelada o bajo en grasa)	○	○	○	○	○

CONTINUAR

Piense en sus hábitos de consumo de bebidas en **el último año**.

¿Con qué frecuencia consumes las siguientes bebidas? Ten en cuenta el desayuno, almuerzo, cena, meriendas y comidas fuera de la casa.

	Menos de una vez por semana	1 vez por semana	2 veces por semana	3 veces por semana	4 veces por semana	5 veces por semana	6 veces por semana	7 veces por semana	Más de 1 vez por día
Leche para beber	○	○	○	○	○	○	○	○	○
Jugo de fruta al 100% (como de naranja, manzana, uva, naturales, congelados, enlatados [no sodas u otro tipo de bebidas])	○	○	○	○	○	○	○	○	○
Jugo de verduras (como jugo de tomate, V-8 o zanahoria)	○	○	○	○	○	○	○	○	○
Refrescos y gaseosas (como Coca-Cola o 7-Up [no incluye las bebidas dietéticas])	○	○	○	○	○	○	○	○	○
Bebidas de frutas u otras bebidas azucaradas (tales como Hawaiian Punch, Hi-C, Kool-Aid, cóctel de jugo de arándano Ocean Spray, Snapple, Sunny Delight, Limonada Country Time, Sobe, Arizona Ice Tea, té azucarado [no incluye las bebidas dietéticas])	○	○	○	○	○	○	○	○	○
Bebidas energéticas (tales como RockStar, Red Bull, Monster, Full Throttle [no incluye aquellas sin azúcar])	○	○	○	○	○	○	○	○	○
Bebidas de café gourmet endulzadas con azúcar (tales como frappuccino, latte/capuchino saborizados)	○	○	○	○	○	○	○	○	○

CONTINUAR

Piensa en los alimentos en tu casa

¿Cuál de estos alimentos permites que tus niños preescolares se sirvan como merienda sin pedir tu ayuda? *(Marca todos los que apliquen)*

☐ papas fritas, palomitas de maíz, galletas, chips de maíz, tales como Doritos, chips de tortilla, Fritos

☐ donas, pasteles, galletas, tortas (tales como Ho-Hos)

☐ helado

☐ caramelos o barras de dulce

☐ leche

☐ refrescos y gaseosas tales como Coca-Cola o 7-Up

☐ bebidas de frutas u otras bebidas azucaradas

☐ jugo al 100% como de naranja, manzana, uva

☐ frutas o vegetales

☐ cereal

☐ barras de desayuno, barras de granola, barras de proteínas

☐ No permito que mis niños se sirvan ninguno de estos como merienda sin mi ayuda.

CONTINUAR

¿Cuáles de estos se mantienen en lugares que sean **fáciles** *para la vista y alcance de los* **niños preescolares**? *(Marca todos los que apliquen)*

☐ papas fritas, palomitas de maíz, galletas, chips de maíz, tales como Doritos, chips de tortilla, Fritos

☐ donas, pasteles, galletas, tortas (tales como Ho-Hos)

☐ helado

☐ caramelos o barras de dulce

☐ leche

☐ refrescos y gaseosas tales como Coca-Cola o 7-Up

☐ bebidas de frutas u otras bebidas azucaradas

☐ jugo al 100% como de naranja, manzana, uva

☐ frutas o vegetales

☐ cereal

☐ barras de desayuno, barras de granola, barras de proteínas

☐ Ninguno de estos se guarda en lugares fáciles de ver y alcanzar

CONTINUAR

¿Cierto o falso?

	Definitivamente falso	Mayormente falso	Mayormente cierto	Definitivamente cierto
Me sirvo porciones pequeñas a propósito como un modo de controlar mi peso corporal.	○	○	○	○
En el último año, me preocupó la posibilidad de que nuestros alimentos se acabaran antes de que consiguiéramos el dinero para comprar más.	○	○	○	○
Siempre tengo hambre, así que es difícil para mí dejar de comer antes de acabar la comida en mi plato.	○	○	○	○
Cuando siento ansiedad, empiezo a comer.	○	○	○	○
Para no aumentar de peso, hago un esfuerzo consciente para controlarme durante las comidas.	○	○	○	○
Siempre tengo suficiente hambre para comer a cualquier hora.	○	○	○	○
No consumo ciertos alimentos porque me hacen engordar.	○	○	○	○
Cuando siento ansiedad, empiezo a comer.	○	○	○	○
Evito almacenar alimentos tentadores.	○	○	○	○
No le tengo confianza a los nuevos alimentos.	○	○	○	○
A veces, cuando empiezo a comer, simplemente no puedo parar.	○	○	○	○
Cuando me siento solitario(a), me consuelo comiendo.	○	○	○	○
Tengo miedo de comer cosas que nunca he comido antes.	○	○	○	○
En el año pasado, los alimentos que compré no duraron y no tuvimos dinero para comprar más.	○	○	○	○

CONTINUAR

Piensa en **TODAS** las comidas y meriendas que se consum[...]
el **AÑO PASADO**.

**Piensa en el número de comidas y meriendas cada mien[...]
suele comer en tu casa.**

(**No** cuentes los alimentos que consumen en los restaurante[...]
escuela u otros lugares.)

Cada semana del **año** pasado, había suficiente...

	Menos de 1 porción por semana	1 porción por semana	2 porciones por semana	3 porciones por semana	4 porciones por semana	5 porciones por semana	6 porcior por semai
Todas las semanas del **año** pasado tuvimos suficiente frutas (de cualquier tipo, incluyendo frescas, congeladas o enlatadas [pero **no** jugo]) para que **la mayoría** de las personas de mi **casa** puedan comer _____	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficiente ensalada de hojas verdes para que **la mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficientes papas (de cualquier tipo, incluyendo al horno y en puré, **no** fritas) para que la **mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficiente sopa de vegetales, o guisado de vegetales, para que la **mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficientes cantidades de cualquier otro vegetal (incluyendo judías verdes, arvejas, maíz, brócoli o cualquier otro tipo de vegetal) para que la **mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficiente frijoles (tales como frijoles horneados, pintos, riñon o lentejas [no incluye judías verdes]) para la **mayoría** de las personas de mi **casa** puedan comer_____.	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficiente pan oscuro como pan de harina integral o de centeno para que la **mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○

CONTINUAR

Piensa en **TODAS** las comidas y meriendas que se consumieron en tu casa el **AÑO PASADO**.

Piensa en el número de comidas y meriendas cada miembro de tu familia suele comer en tu casa.

(No cuentes los alimentos que consumen en los restaurantes, el trabajo, la escuela u otros lugares.)

Cada semana del año pasado, había suficiente…

	Menos de 1 porción por semana	1 porción por semana	2 porciones por semana	3 porciones por semana	4 porciones por semana	5 porciones por semana	6 porciones por semana	7 porciones por semana	Más de una porció por di
Todas las semanas del año pasado tuvimos suficiente chips de maíz (como Doritos, chips de tortillas, Fritos), papitas fritas, palomitas de maíz o galletas para que la mayoría de las personas de mi casa puedan comer_____.	○	○	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente donas, pasteles, galletitas dulces o tortas (como Ho-Hos) (no incluye las de bajo contenido graso) para que la mayoría de las personas de mi casa puedan comer _____.	○	○	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente helados (no incluye sorbetes o helados de bajo contenido graso) para que la mayoría de las personas de mi casa puedan comer_____.	○	○	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente caramelos o barras de dulces para que la mayoría de las personas de mi casa puedan comer_____.	○	○	○	○	○	○	○	○	○

CONTINUAR

Piensa en **TODAS** las bebidas que se consumieron en tu casa el

Piensa en el número de comidas y meriendas cada miembro comer en tu casa.

(**No** cuentes las bebidas que consumen en los restaurantes, el tra otros lugares.)

Cada semana del año pasado, había suficiente…

	Menos de 1 porción por semana	1 porción por semana	2 porciones por semana	3 porciones por semana	4 porciones por semana	5 porciones por semana	6 porcio po sema
Todas las semanas del año pasado tuvimos suficiente leche para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente jugo al 100% (como de naranja, manzana, uva, fresco, congelado o en lata (**no** refrescos u otras bebidas) para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente jugo de vegetales (como de tomate, V-8 o de zanahoria) para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente refrescos y gaseosas (como el Coca-Cola o 7-Up [**no** incluye las bebidas dietéticas]) para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente bebidas de frutas u otras bebidas azucaradas (tales como Hawaiian Punch, Hi-C, Kool-Aid, cóctel de jugo de arándano Ocean Spray, Snapple, Sunny Delight, Limonada Country Time, Sobe, té helado Arizona, té azucarado [**no** incluye las bebidas dietéticas]) para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficientes bebidas energéticas (tales como RockStar, Red Bull, Monster, Full Throttle (no incluye aquellas sin azúcar) para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○
Todas las semanas del año pasado tuvimos suficiente bebidas de café gourmet endulzadas con azúcar (tales como frappuccino, latte/capuchino saborizados) para que la **mayoría** de las personas de mi **casa** puedan beber _____.	○	○	○	○	○	○	○

CONTINUAR

¿Qué tipo de leche tienes por lo general en tu casa ? (elije uno)

○ Leche entera

○ Leche de grasa reducida al 2%

○ Leche de bajo contenido graso al 1%

○ Leche descremada

○ Leche chocolatada

○ Leche de soya (o almendra o arroz)

○ Leche deslactosada

○ No lo sé

CONTINUAR

Piensa en **TODAS** las comidas que se consumieron en tu casa el **AÑO PASADO**.

Piensa en el número de comidas y meriendas cada miembro de tu familia suele comer en tu casa.

(No cuentes las comidas que consumen en los restaurantes, el trabajo, la escuela u otros lugares.)

Cada semana del año pasado, había suficiente…

	Menos de 1 porción por semana	1 porción por semana	2 porciones por semana	3 porciones por semana	4 porciones por semana	5 porciones por semana	6 porciones por semana	7 porciones por semana	Más de una porción por día
Todas las semanas del **año** pasado tuvimos suficiente cereales regulares o de fibra dietética (como Corn Flakes, Special K, Rice Krispies, Wheaties, Oatmeal, Raisin Bran, Shredded Wheat, Fruit-n-Fiber, Plain Cheerios, Grape Nuts, Wheat Chex, Kix, All Bran, Granola, Kashi) para que la **mayoría** de las personas de mi **casa** puedan comer_____.	○	○	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficiente cereales endulzados (como Honey Nut Cheerios, Cap N' Crunch, Lucky Charms, Life, Golden Grahams, Frosted Mini Wheats, Frosted Flakes, Froot Loops, Apple Jacks, Trix) para que la **mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○	○	○
Todas las semanas del **año** pasado tuvimos suficiente barras de desayuno, barras de granola o barras de proteína para que la **mayoría** de las personas de mi **casa** puedan comer _____.	○	○	○	○	○	○	○	○	○

CONTINUAR

Selecciona la primera imagen que muestre a alguien que pienses que tiene bajo peso.
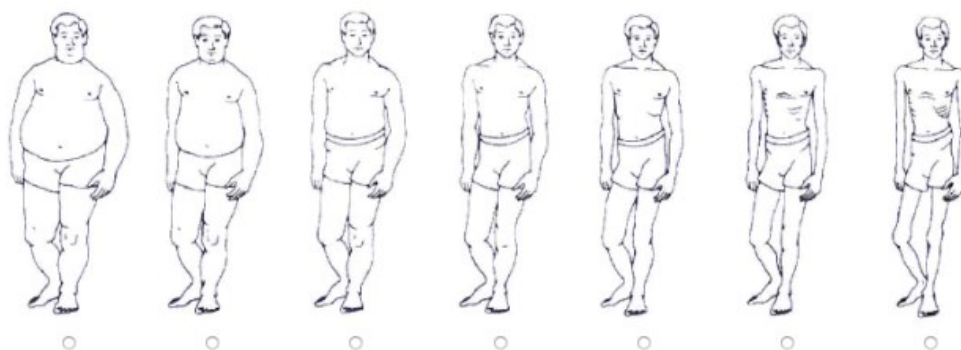
Selecciona la primera imagen que muestre a alguien que pienses que tiene sobrepeso.
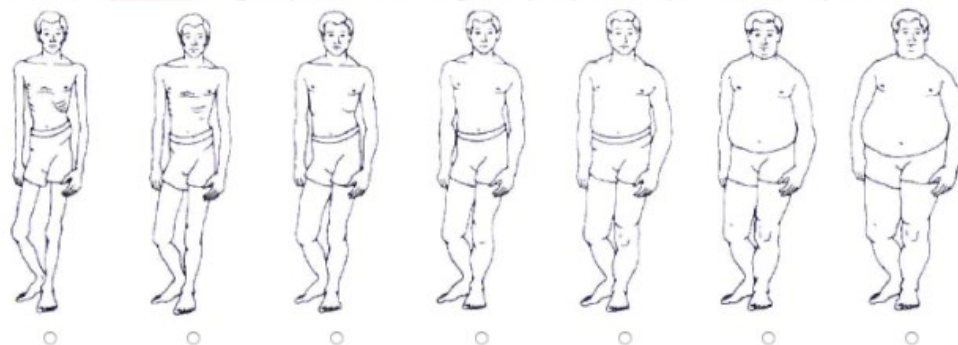
Selecciona la primera imagen que muestre a alguien que pienses que tiene sobrepeso.
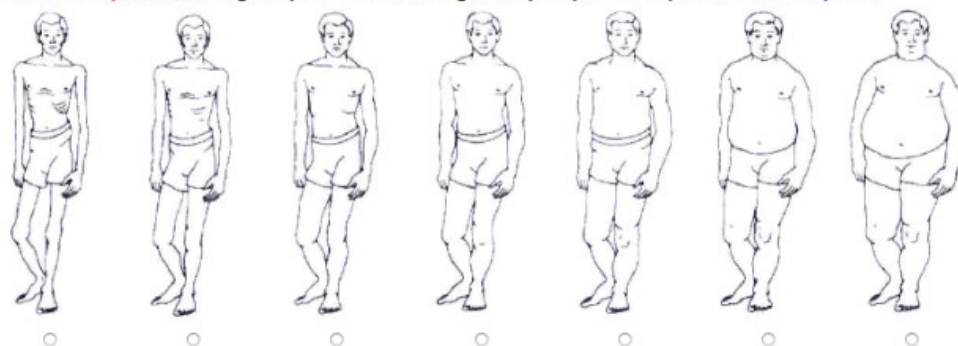
CONTINUAR

Por favor, dinos lo que piensas

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Encuentro tiempo casi todos los días para estar físicamente activo.	○	○	○	○	○
<u>No</u> permito que las cosas se pongan en el camino de mantenerme físicamente activo.	○	○	○	○	○
Es importante para mí ser físicamente activo.	○	○	○	○	○
Es importante para mí que mis niños preescolares <u>no</u> me observen pasar mucho tiempo mirando la televisión o películas.	○	○	○	○	○
Hago fácil que mis niños preescolares sean físicamente activos, como darles aparatos de equipos de juego o llevarlos al parque o a clases como de natación, baile o karate.	○	○	○	○	○
Me aseguro que mis niños preescolares estén físicamente activos casi todos los días.	○	○	○	○	○
<u>No</u> dejo que las cosas (como el mal tiempo) eviten que mis niños preescolares sean físicamente activos.	○	○	○	○	○

CONTINUAR

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Yo les digo a mis hijos preescolares que disfruto de estar físicamente activo.	○	○	○	○	○
Es importante que mis niños preescolares me vean siendo físicamente activo.	○	○	○	○	○
A menudo animo a mis niños preescolares a participar en *otra actividad que no sea* mirar televisión o películas, como jugar afuera de la casa.	○	○	○	○	○
A menudo animo a mis niños preescolares a participar en *otra* actividad que no sea jugar con computadoras, tabletas y teléfonos inteligentes, como jugar afuera de la casa.	○	○	○	○	○
Frecuentemente hago fácil que mis niños preescolares hagan *algo que no sea* mirar televisión o películas.	○	○	○	○	○
Frecuentemente hago fácil que mis niños preescolares hagan *algo que no sea* jugar con computadoras y teléfonos inteligentes.	○	○	○	○	○
No soy uno de esos padres que siempre está abrazando o acurrucándose con mis niños.	○	○	○	○	○
Les doy a mis niños muchos besos y abrazos.	○	○	○	○	○

CONTINUAR

Selecciona la **primera** imagen que muestre a alguien que pienses que tiene **bajo peso**.
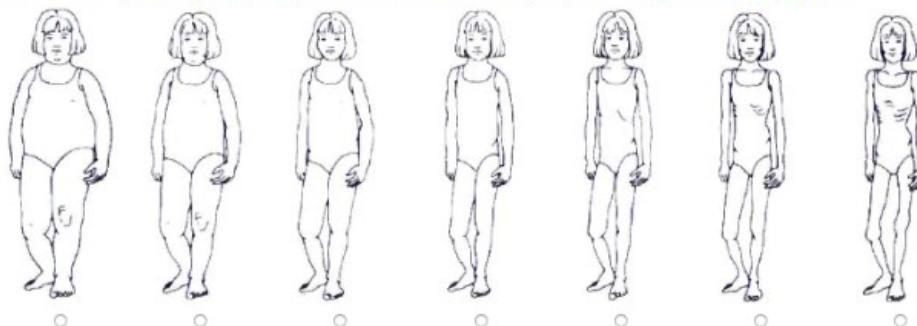
Selecciona la **primera** imagen que muestre a alguien que pienses que tiene **sobrepeso**.
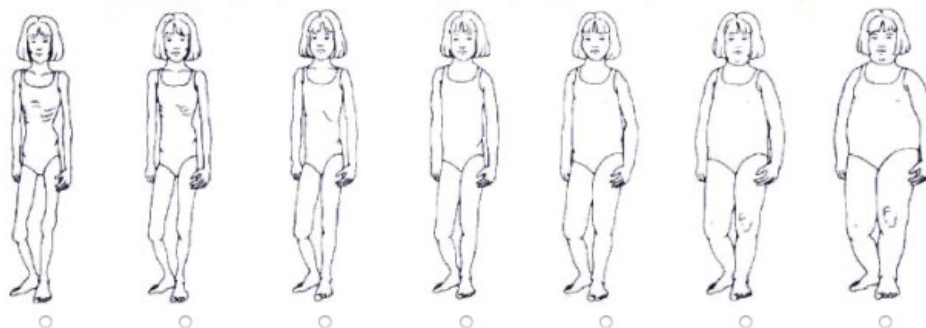
CONTINUAR

¡Toma un descanso virtual!

Imagínate el sabor refrescante y el sonido suave de burbujeo de una bebida.

Cuando estés relajada, continúa con la encuesta...

Por favor, provee tu email [   ]

Puedes continuar tomando la encuesta "Survey Cafe # 1", o toma un descanso y vuelve más tarde. Si vuelves más tarde, te enviaremos un email con el enlace a la siguiente parte de la encuesta. Tendrás que ingresar tu email para acceder a la encuesta.

- ○ Quiero continuar tomando la encuesta "Survey Cafe # 1" ahora
- ○ Quiero continuar la encuesta "Survey Cafe # 1" más tarde

CONTINUAR

Inicie sesión.

Ingresa tu dirección de email otra vez.
Si tienes algún problema, comunícate
con nosotros llamando gratis al número
(855) 333-7724 o mándanos un email a
homestyles@aesop.rutgers.edu.

CONTINUAR

Tu hijo

Por favor, cuéntanos acerca de tu hijo

Piensa en tus hijos que son entre 2 y 5 años de edad.
Nos gustaría saber más acerca de uno de ellos.
Si tienes más de 1 niño de esta edad, por favor, dinos sobre el niño nacido más cercano al mediodía del 7 de junio.

¿Cuál es el nombre de este niño? (un apodo está bien)

CONTINUAR

CHILD'S NAME es un(a)

- ○ Niño
- ○ Niña

¿En qué mes nació CHILD'S NAME?

[⬍]

¿En qué año nació CHILD'S NAME?

- ○ Antes del 2007
- ○ 2007
- ○ 2008
- ○ 2009
- ○ 2010
- ○ 2011
- ○ 2012
- ○ 2013

¿Cuál es el grupo étnico o raza de CHILD'S NAME? (*elige todos los que correspondan*)

- ☐ Hispano, latino o español
- ☐ Raza blanca
- ☐ Raza negra o afroamericana
- ☐ Indígena americana o nativo de Alaska
- ☐ Indio asiático
- ☐ Asiático (por ejemplo, japonés, chino o coreano)
- ☐ Nativo de la Polinesia
- ☐ Otro, por favor especifica

[   ]

¿Diste a luz a CHILD'S NAME?

- ○ Sí
- ○ No

¿Fue CHILD'S NAME un bebé prematuro (nació antes de las 38 semanas)?

- ○ Sí
- ○ No
- ○ No estoy segura

¿Cuánto tiempo amamantaste a CHILD'S NAME?

[⬍]

CHILD'S NAME nació en

- ○ Estados Unidos
- ○ Otro país (por favor, especifica)

[   ]

CONTINUAR

¿Cuánto pesó CHILD'S NAME al nacer?

Libras _____

Onzas _____

¿Qué tan segura estás de que recuerdas este peso correctamente?
- ○ Muy segura
- ○ Segura
- ○ No estoy segura
- ○ Para nada segura

¿Cuál fue la longitud de CHILD'S NAME cuando nació?

Pulgadas _____

¿Qué tan segura estás de que recuerdas esta longitud correctamente?
- ○ Muy segura
- ○ Segura
- ○ No estoy segura
- ○ Para nada segura

¿Cómo describirías el peso de CHILD'S NAME antes de cumplir el primer año?
- ○ Muy delgado
- ○ Delgado
- ○ Promedio
- ○ Un poco gordito
- ○ Con sobrepeso

¿Cómo describirías el peso de CHILD'S NAME entre el primer y segundo año de edad?
- ○ Muy delgado
- ○ Delgado
- ○ Promedio
- ○ Un poco gordito
- ○ Con sobrepeso

¿Cómo describirías el peso de CHILD'S NAME ahora?
- ○ Muy delgado
- ○ Delgado
- ○ Promedio
- ○ Un poco gordito
- ○ Con sobrepeso

CONTINUAR

¿Cómo clasificarías la salud general de CHILD'S NAME?

○ Excelente

○ Muy Buena

○ Buena

○ Regular

○ Mala

Piensa en la salud física de CHILD'S NAME, la cual incluye enfermedades y lesiones. Durante los últimos 30 días, ¿cuál fue el número de días en los cuáles la salud de CHILD'S NAME no fue buena?

[⇕]

Piensa en la salud mental de CHILD'S NAME, la cual incluye estrés, depresión y problemas emocionales. Durante los últimos 30 días, ¿cuál fue el número de días en los cuáles la salud mental de CHILD'S NAME no fue buena?

[⇕]

Me preocupa que CHILD'S NAME vaya a tener sobrepeso.

○ Totalmente en desacuerdo

○ En desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ De acuerdo

○ Totalmente de acuerdo

Me preocupa que CHILD'S NAME vaya a tener que ponerse a dieta para mantener su peso bajo control.

○ Totalmente en desacuerdo

○ En desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ De acuerdo

○ Totalmente de acuerdo

CONTINUAR

Piensa en los hábitos de consumo de bebidas de en el año pasado.

¿Con qué frecuencia consumió las siguientes bebidas?
Ten en cuenta el desayuno, almuerzo, cena, meriendas y comidas fuera de la casa.

	Menos de 1 vez a la semana	1 día a la semana	2 días a la semana	3 días a la semana	4 días a la semana	5 días a la semana	6 días a la semana	7 días a la semana	Más de 1 vez por día
Leche para beber	○	○	○	○	○	○	○	○	○
Jugo de fruta al 100% (como de naranja, manzana, uva, naturales, congelados, enlatados [no sodas u otro tipo de bebidas])	○	○	○	○	○	○	○	○	○
Jugo de verduras (como jugo de tomate, V-8 o zanahoria)	○	○	○	○	○	○	○	○	○
Refrescos y gaseosas (como Coca-Cola o 7-Up [no incluye las bebidas dietéticas])	○	○	○	○	○	○	○	○	○
Bebidas de frutas u otras bebidas azucaradas (tales como Hawaiian Punch, Hi-C, Kool-Aid, cóctel de jugo de arándano Ocean Spray, Snapple, Sunny Delight, Limonada Country Time, Sobe, Arizona Ice Tea, té azucarado [no incluye las bebidas dietéticas])	○	○	○	○	○	○	○	○	○

CONTINUAR

Piensa en lo que hizo tu hijo la semana pasada

	0 días	1 día	2 días	3 días	4 días	5 días	6 días	7 días
En la semana pasada, ¿cuántos días caminó de forma continua durante por lo menos 10 minutos para hacer actividades como salir a caminar, pasear al perro o caminar a la escuela?	○	○	○	○	○	○	○	○
En la semana pasada, ¿cuántos días corrió, saltó, o hizo otras actividades que le hicieron sudar o respirar un poco más fuerte de lo habitual?	○	○	○	○	○	○	○	○
En la semana pasada, ¿cuántos días corrió, saltó, o hizo otras actividades que le hicieron sudar o respirar mucho más fuerte de lo habitual?	○	○	○	○	○	○	○	○

En la semana pasada, ¿qué cantidad de tiempo pasó diariamente mirando televisión o películas o jugando en una computadora o con un teléfono inteligente?
(Por favor, informa las horas y los minutos; por ejemplo, si tu hijo pasó 8 1/2 horas viendo televisión y jugando juegos de computadora, selecciona 8 horas en el primer cuadro, y 30 minutos en el segundo cuadro)

Horas [▼]
Minutos [▼]

En la semana pasada, ¿cuántas horas durmió cada noche? Esto puede ser diferente al número de horas que se pasó en la cama.
(Por favor, informa las horas y los minutos; por ejemplo, si tu hijo pasó 9 horas y 15 minutos durmiendo, selecciona 9 horas en el primer cuadro, y 15 minutos en el segundo cuadro)

Horas [▼]
Minutos [▼]

En la última semana, ¿cuántas horas generalmente tomó de siesta por día?
(Por favor, informa las horas y los minutos; por ejemplo, si tu hijo pasó 2 horas y 0 minutos tomando la siesta, selecciona 2 horas en el primer cuadro, y 0 minutos en el segundo cuadro)

Horas [▼]
Minutos [▼]

Durante el mes pasado, ¿cuál fue la calidad general del sueño de ?
○ Muy bueno
○ Bueno
○ Regular
○ Malo
○ Muy malo

[CONTINUAR]

Por favor, cuéntanos más sobre

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
Es más probable que mire televisión a que ser físicamente activo.	○	○	○	○	○
Es más probable que juegue en la casa, o haga tales cosas como leer o dibujar a que esté físicamente activo.	○	○	○	○	○
simplemente no disfruta de la actividad física.	○	○	○	○	○
es enérgico/a y activo/a.	○	○	○	○	○

CONTINUAR

Por favor, cuéntanos más sobre

	Totalmente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo
disfruta de probar nuevos alimentos.	○	○	○	○	○
Al principio, rechaza los nuevos alimentos.	○	○	○	○	○
Si se le da la oportunidad, comería la mayor parte del tiempo.	○	○	○	○	○
Si se le permitiera, comería demasiado.	○	○	○	○	○
come más cuando se siente nervioso/a.	○	○	○	○	○
decide que un alimento no le gusta sin siquiera probarlo.	○	○	○	○	○
_está interesado en probar alimentos que no ha probado antes.	○	○	○	○	○
come más cuando se siente preocupado/a.	○	○	○	○	○

CONTINUAR

Selecciona la primera foto que muestre a una persona que opinas que tiene bajo peso.
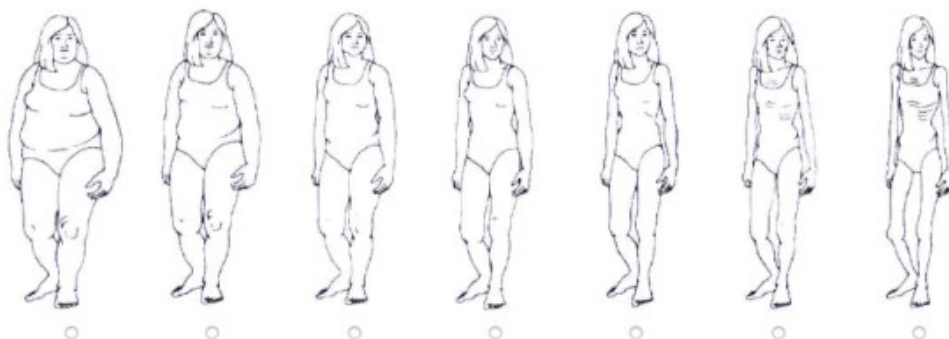
Selecciona la primera foto que muestre a una persona que opinas que tiene sobrepeso.
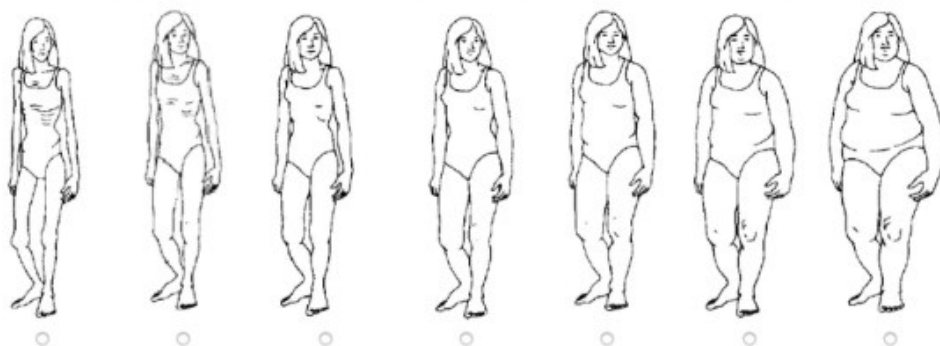
CONTINUAR

¿Cómo clasificarías tu salud en general?

○ Excelente

○ Muy buena

○ Buena

○ Regular

○ Mala

Piensa en tu salud física la cual incluye enfermedades físicas y lesiones. **Durante los últimos 30 días**, ¿cuántos días <u>no</u> fue buena tu salud física?

[▼]

Piensa en tu salud mental, lo cual incluye estrés, depresión y problemas emocionales. **Durante los últimos 30 días**, ¿cuántos días <u>no</u> tuviste buena salud mental?

[▼]

Durante los últimos 30 días, ¿en cuántos días sentiste que los problemas de **salud mental o física** te impidieron realizar tus actividades habituales, como cuidado personal, trabajo o recreación?

[▼]

¿En cuántos de <u>los últimos 30 días</u> fumaste <u>uno o más</u> cigarrillos?

[▼]

CONTINUAR

Piensa en estas dos últimas semanas

	Nunca	Varios días	Más de la mitad de los días	Casi todos los días
En las últimas 2 semanas, ¿con qué frecuencia sentiste poco interés o placer en hacer las cosas?	○	○	○	○
En las últimas 2 semanas, ¿con qué frecuencia te sentiste triste, deprimido o sin esperanza?	○	○	○	○
En las últimas 2 semanas, ¿con qué frecuencia te sentiste incapaz de controlar las cosas importantes en tu vida?	○	○	○	○
En las últimas 2 semanas, ¿con qué frecuencia sentiste confianza en tu capacidad para manejar tus problemas personales?	○	○	○	○
En las últimas 2 semanas, ¿con qué frecuencia sentiste que las cosas estaban funcionando a tu gusto?	○	○	○	○
En las últimas 2 semanas, ¿con qué frecuencia sentiste que las dificultades se te estaban acumulando tanto que no podías superarlas?	○	○	○	○

CONTINUAR

¿Qué eres?

○ Hombre

○ Mujer

¿En qué país naciste?

○ Estados Unidos

○ Otro país (especifica, por favor)

[   ]

¿Qué idioma hablas en tu casa?

○ Inglés

○ Español

○ Otro (especifica, por favor)

[   ]

¿Cuál es tu grupo étnico o raza? *(elige todos los que correspondan)*

☐ Hispano, latino o español

☐ Raza blanca

☐ Raza Negra o Afroamericana

☐ Indígena americano o nativo de Alaska

☐ Indio asiático

☐ Asíatico (por ejemplo, japonés, chino o coreano

☐ Nativo de la Polinesia

☐ Otro (especifica, por favor)

[   ]

¿Cuál es tu nivel de educación <u>más alto</u>?

○ Menos de preparatoria

○ Preparatoria

○ Algunos estudios universitarios

○ Diplomado/graduado de un colegio técnico profesional

○ Título universitario

○ Estudios de postgrado

○ Otro, (especifica, por favor)

[   ]

CONTINUAR

¿Qué edad tienes?

[▼]

¿Cuántos niños menores de 18 años viven contigo?

[▼]

¿Qué edades tienen los niños que viven contigo? *(Escoge todas las que necesites)*

☐ Menos de 1 año (12 meses o menos)   ☐ 10

☐ 1 (13 a 24 meses de edad)   ☐ 11

☐ 2 (25 a 36 meses de edad)   ☐ 12

☐ 3 (37 a 48 meses de edad)   ☐ 13

☐ 4 (49 a 60 meses de edad)   ☐ 14

☐ 5   ☐ 15

☐ 6   ☐ 16

☐ 7   ☐ 17

☐ 8   ☐ Mayor de 18 años

☐ 9   ☐ No vivo con niños la mayor parte del tiempo

¿Tienes correo electrónico regular o acceso al Internet?

○ Si

○ No

En tu familia, ¿quién toma la mayoría de las decisiones sobre qué alimentos comprar y servir en las comidas?

○ Yo

○ Mi pareja/cónyuge

○ Mis niños

○ Otra persona (especifica, por favor)

[   ]

CONTINUAR

¿Cuál es tu ocupación?

¿Cuántas horas de trabajo <u>remunerado</u> tienes <u>por lo general</u> cada semana?
- ○ 0 horas
- ○ 1 a 9 horas
- ○ 10 a 19 horas
- ○ 20 a 29 horas
- ○ 30 a 39 horas
- ○ 40 horas
- ○ Más de 40 horas

¿Cuántas veces fuiste de vacaciones con tu familia durante los últimos 12 meses?
- ○ Nunca
- ○ 1 vez
- ○ 2 veces
- ○ 3 o más veces

¿Tienes tu propia habitación (solamente para ti, o para ti y tu pareja/cónyuge?)
- ○ Si
- ○ No

¿Cuál es tu estado civil <u>actual</u>?
- ○ Soltero/a, nunca me casé
- ○ Soltero/a, viviendo con pareja
- ○ Casado/a
- ○ Divorciado/a
- ○ Viudo/a

CONTINUAR

Tu Cónyuge o Pareja

¿Cuál es el nivel más alto de educación de tu pareja?

○ Menos de preparatoria

○ Preparatoria

○ Algunos estudios universitarios

○ Diplomado / graduado de un colegio técnico profesional

○ Titulo universitario

○ Estudios de postgrado

○ Otro, (especifica, por favor)

¿Cuál es la ocupación de tu pareja?

¿Cuántas horas de trabajo renumerado tiene por lo general tu pareja cada semana?

○ Mi cónyuge o pareja no trabaja

○ 1 a 9 horas

○ 10 a 19 horas

○ 20 a 29 horas

○ 30 a 39 horas

○ 40 horas

○ Más de 40 horas

CONTINUAR

¿Cuál de estas imágenes es más parecida a tu figura?

CONTINUAR

Por favor, indica cómo deseas tu pago de $15 por completar esta encuesta y cualquier "bonus buck" que haya ganado. (Tarjetas electrónicas de regalo se entregan en unos 3 días a tu dirección de email)

○ Tarjeta electrónica de regalo de $15 de Kmart y Sears

○ Tarjeta electrónica de regalo de $15 de Amazon.com

○ Tarjeta electrónica de regalo de $15 de Toys "R" Us

○ Tarjeta electrónica de regalo de $15 de Michael's

○ Tarjeta electrónica de regalo de $15 de Kohl's

○ Tarjeta electrónica de regalo de $15 de Bed, Bath, and Beyond

Por favor llene las casillas de abajo para que te podamos enviar tu tarjeta electrónica de regalo de $15.

Nombre	
Dirección de email (por favor, no utilices una dirección de yahoo, tarjetas electrónicas de regalo a menudo no se puede entregar)	
Dirección	
Ciudad	
Estado	
Código Postal	
Número de teléfono (con correo de voz)	

¿Cómo te enteraste de HomeStyles?

○ Mi visitante domiciliario

○ Un amigo o miembro de la familia

○ Mi médico

○ La escuela, el preescolar o la guardería de mi hijo

○ Un anuncio en Facebook

○ Otro, (especifica, por favor)

CONTINUAR

¡Felicidades!
Has completado la encuesta Survey Café 1

Ahora te conectarás a las páginas que te permiten acceder a HealthyHomestyles.com.

En el sitio web HealthyHomeStyles.com podrás
- **conseguir la guía HomeStyles 1**
- **te enviaremos podómetros**
- **te enviaremosun kit para medir la altura**

Por favor, asegúrete de revisar tu email y filtros de SPAM por las tarjetas electrónicas de regalo.

CONTINUAR

APPENDIX D

RECRUITMENT ADVERTISEMENT IN ENGLISH

APPENDIX E

RECRUITMENT ADVERTISEMENT IN SPANISH