

The Role of Family, Culture, and Body Image on Eating and Physical Activity in Hispanic Families



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Latinos in the U.S.

LATINOS IN THE U.S. ARE...



16.3%



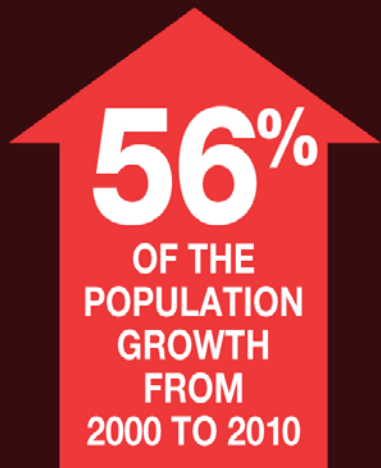
OF THE POPULATION



1 IN EVERY 6 INDIVIDUALS



1 IN EVERY 4 CHILDREN



65.5%	MEXICAN
9.1%	PUERTO RICAN
3.6%	SALVADORAN
3.5%	CUBAN
2.8%	DOMINICAN
2.2%	GUATEMALAN
1.9%	COLOMBIAN

...AND MORE



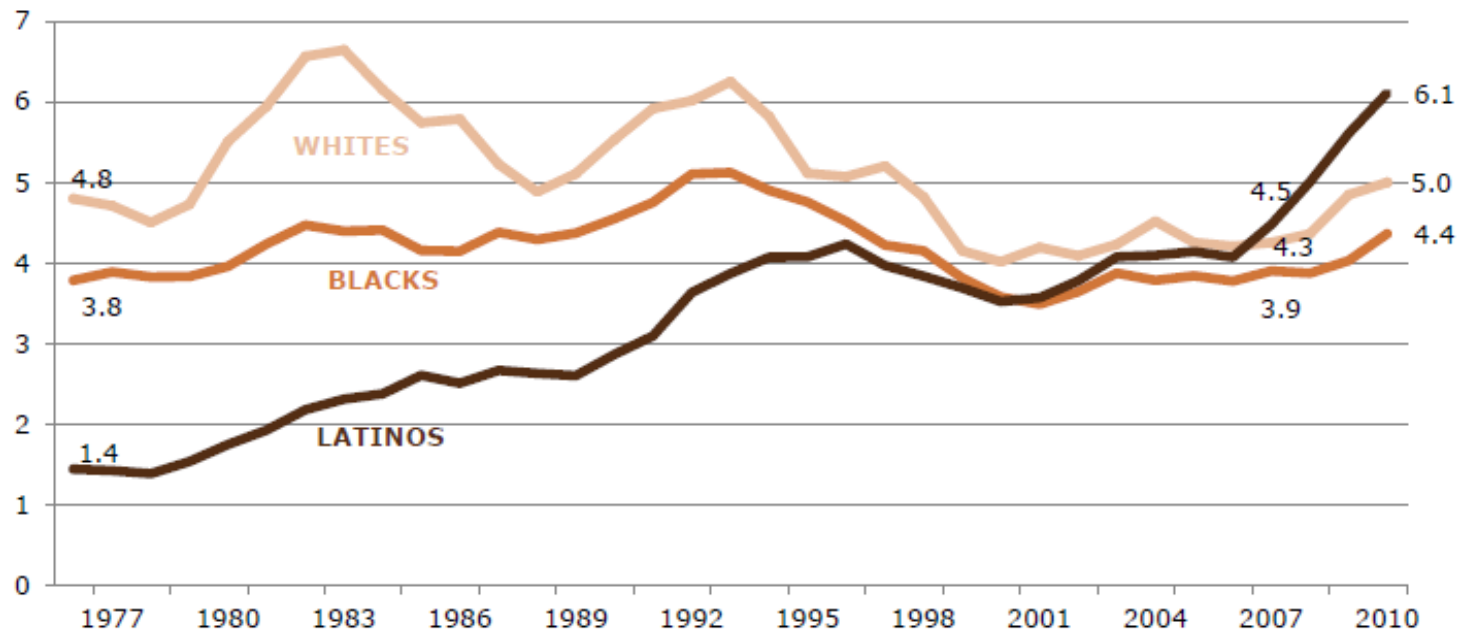
LATINO[®]
BRANDINGPOWER

Hispanic Family and Poverty

Figure 1

Number of Children in Poverty, by Race and Ethnicity, 1976-2010

(in millions)



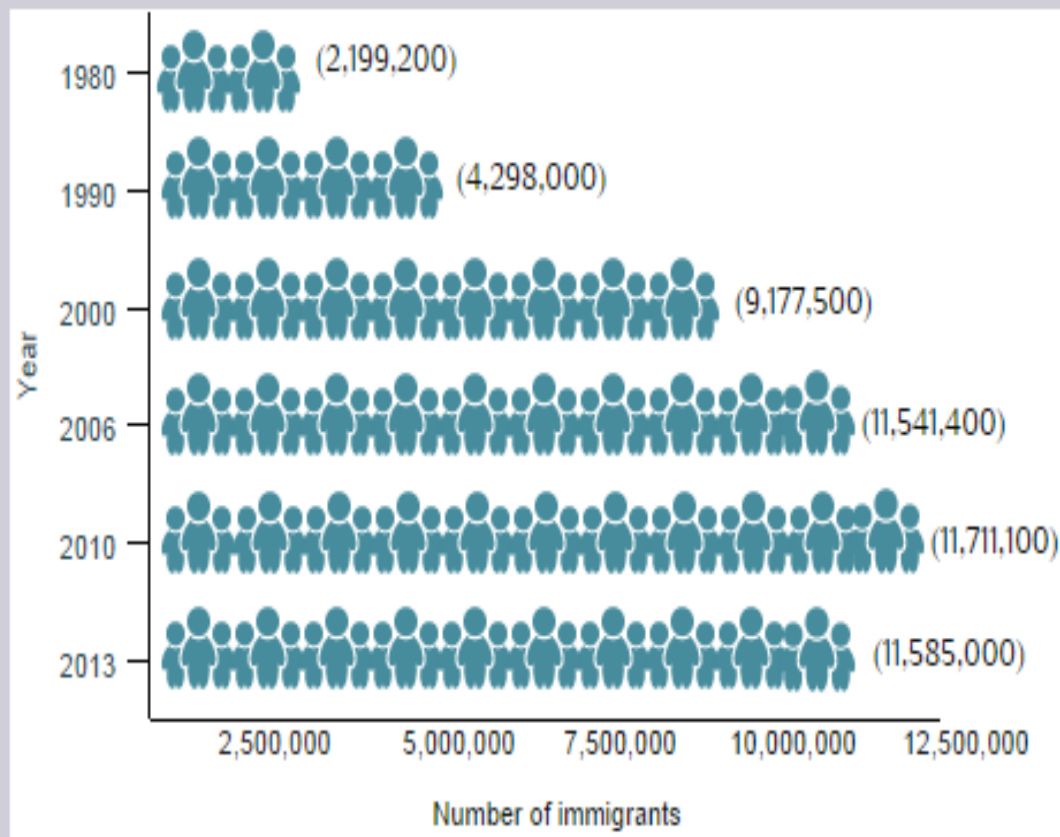
Notes: Children include all individuals younger than 18. Whites include only non-Hispanic whites. Blacks include both Hispanic and non-Hispanic components of the black population.

Source: U.S. Census Bureau <http://www.census.gov/hhes/www/poverty/data/incpovhlth/2010/index.html>

PEW RESEARCH CENTER

Immigration from Mexico

Figure 1. Mexican Immigrant Population in the United States, 1980-2013



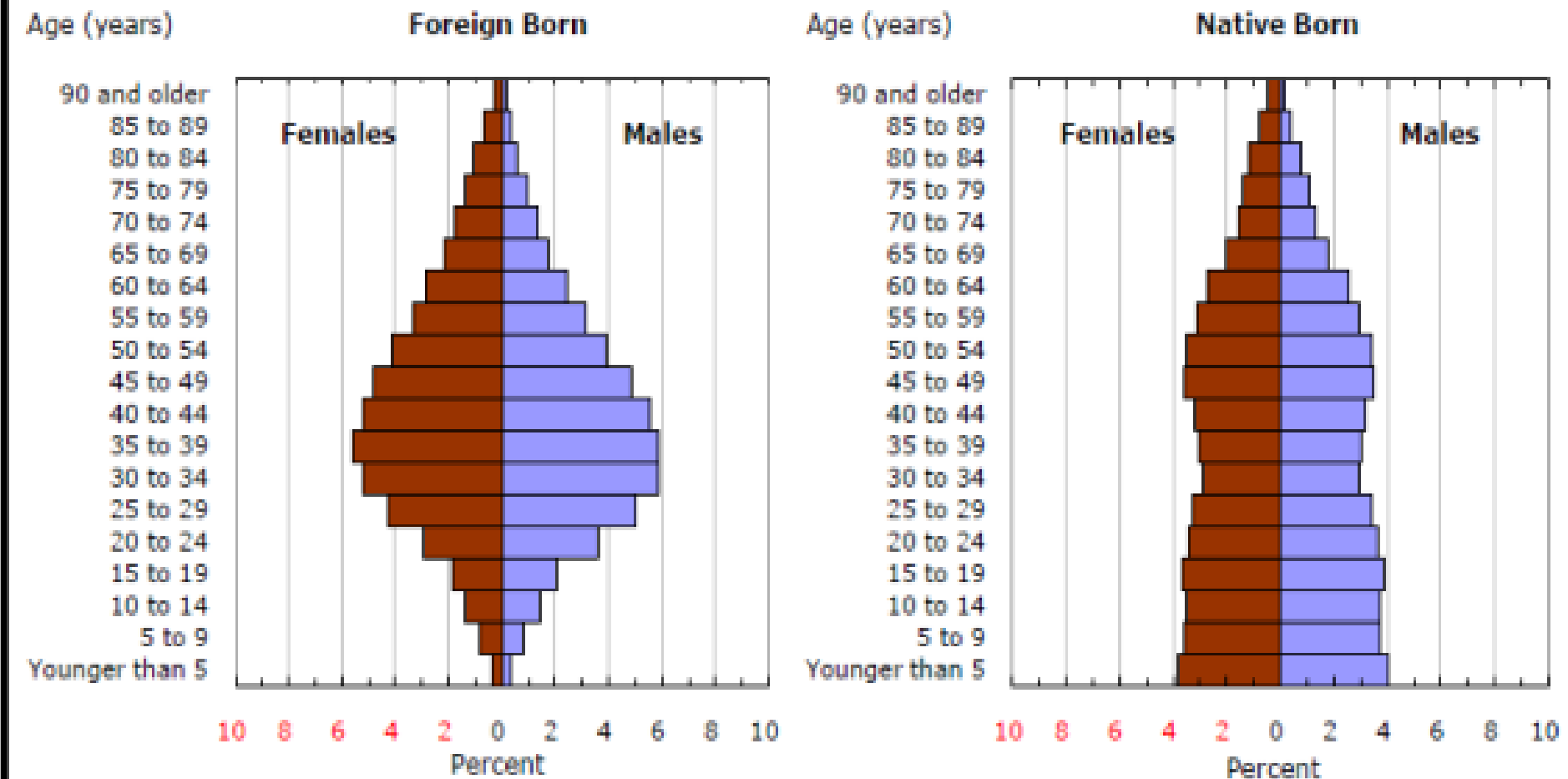
Source: Data from U.S. Census Bureau 2006, 2010, and 2013 American Community Surveys (ACS), 2000 Decennial Census, and Campbell J. Gibson and Emily Lennon, "Historical Census Statistics on the Foreign-born Population of the United States: 1850-1990" (Working Paper No. 29, U.S. Census Bureau, Washington, DC, February 1999),

www.census.gov/population/www/documentation/twps0029/twps0029.html.

Statistical Portrait of the Foreign-Born Population in the United States, 2009

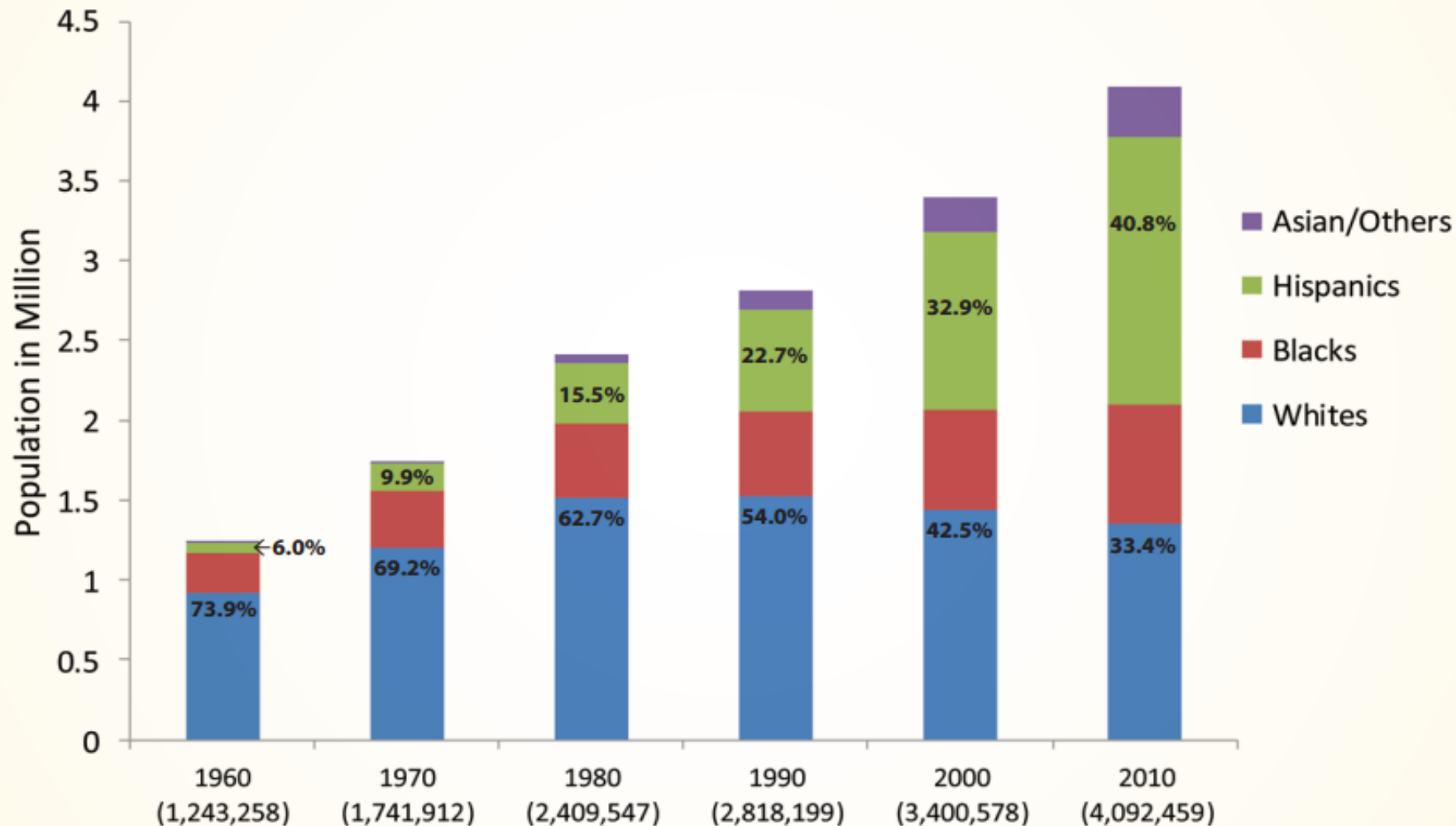
Table 9a. Age and Gender Distributions for Nativity Groups: 2009

Universe: 2009 resident population



Demographic Transformation of Harris County (U.S. Census, 1960-2010)

Census data show consistent growth in the Hispanic population in Harris County from 1960 to present.



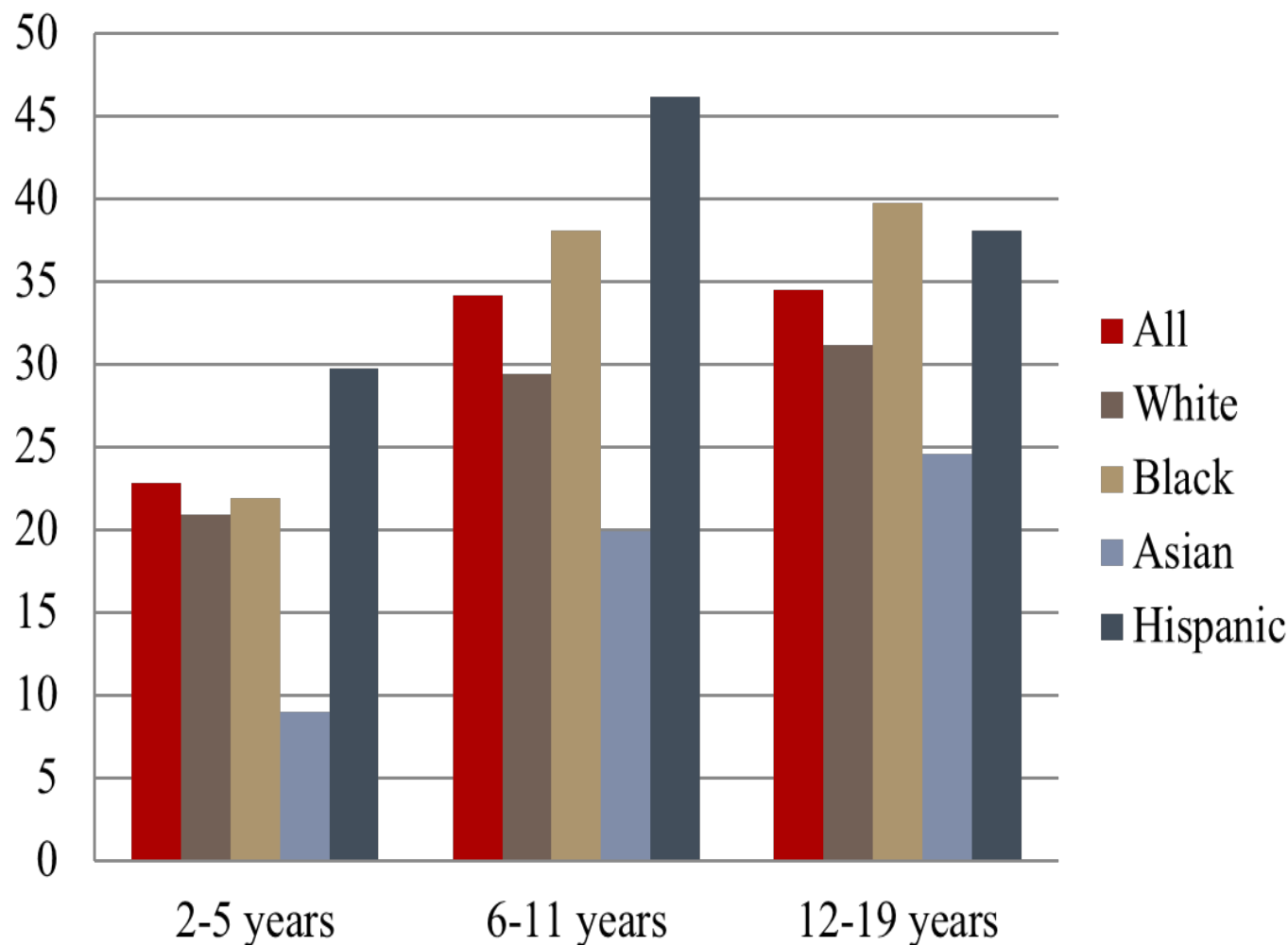
Major Health Problems Affecting Latinos



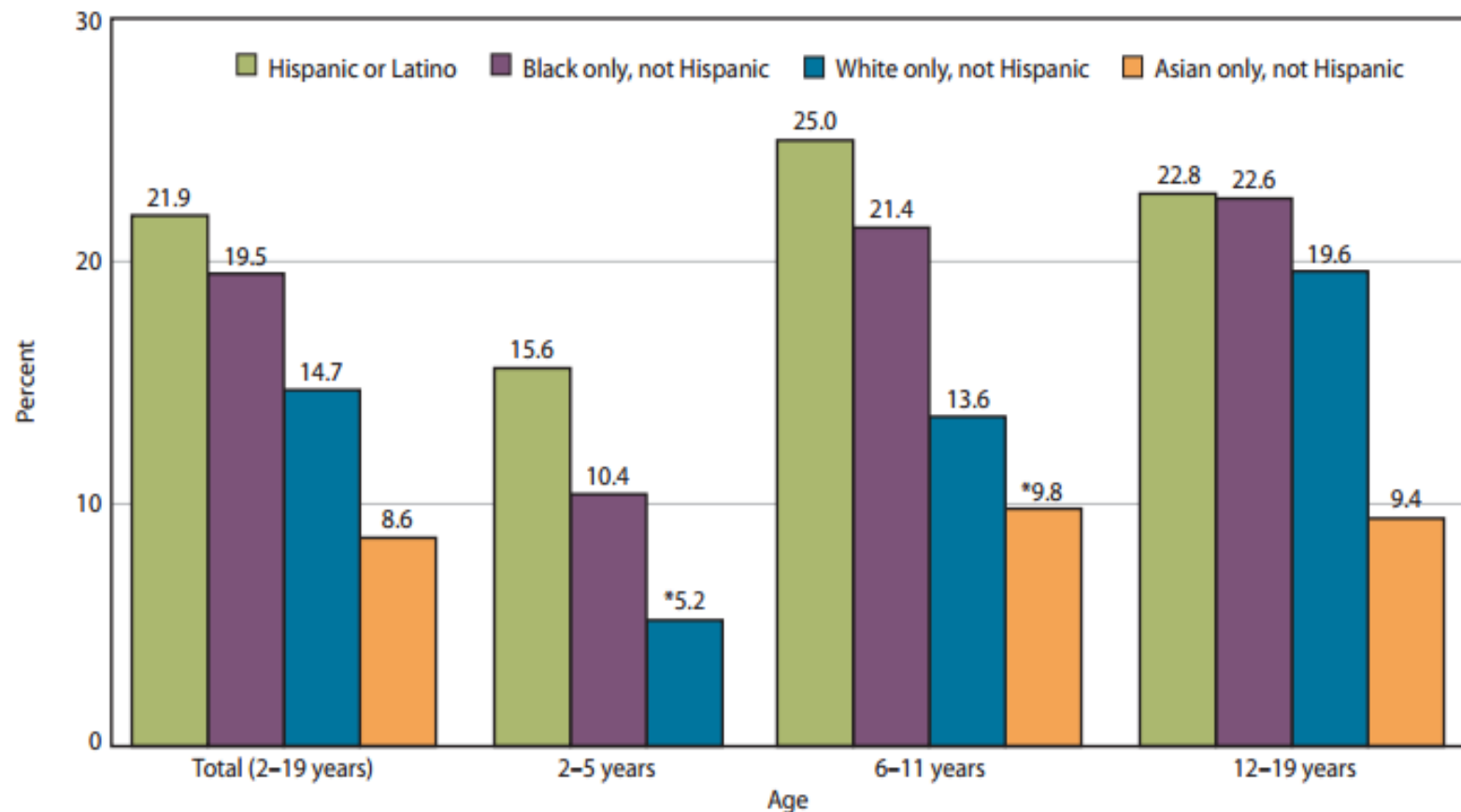


Influence of Acculturation

Prevalence of Overweight (BMI $\geq$ 85th Percentile) 2011-2012



Obesity (BMI Prevalence $\geq$ 95th Percentile) among Children and Adolescents aged 2-19 Years by Age and Race: United States, 2011-2014



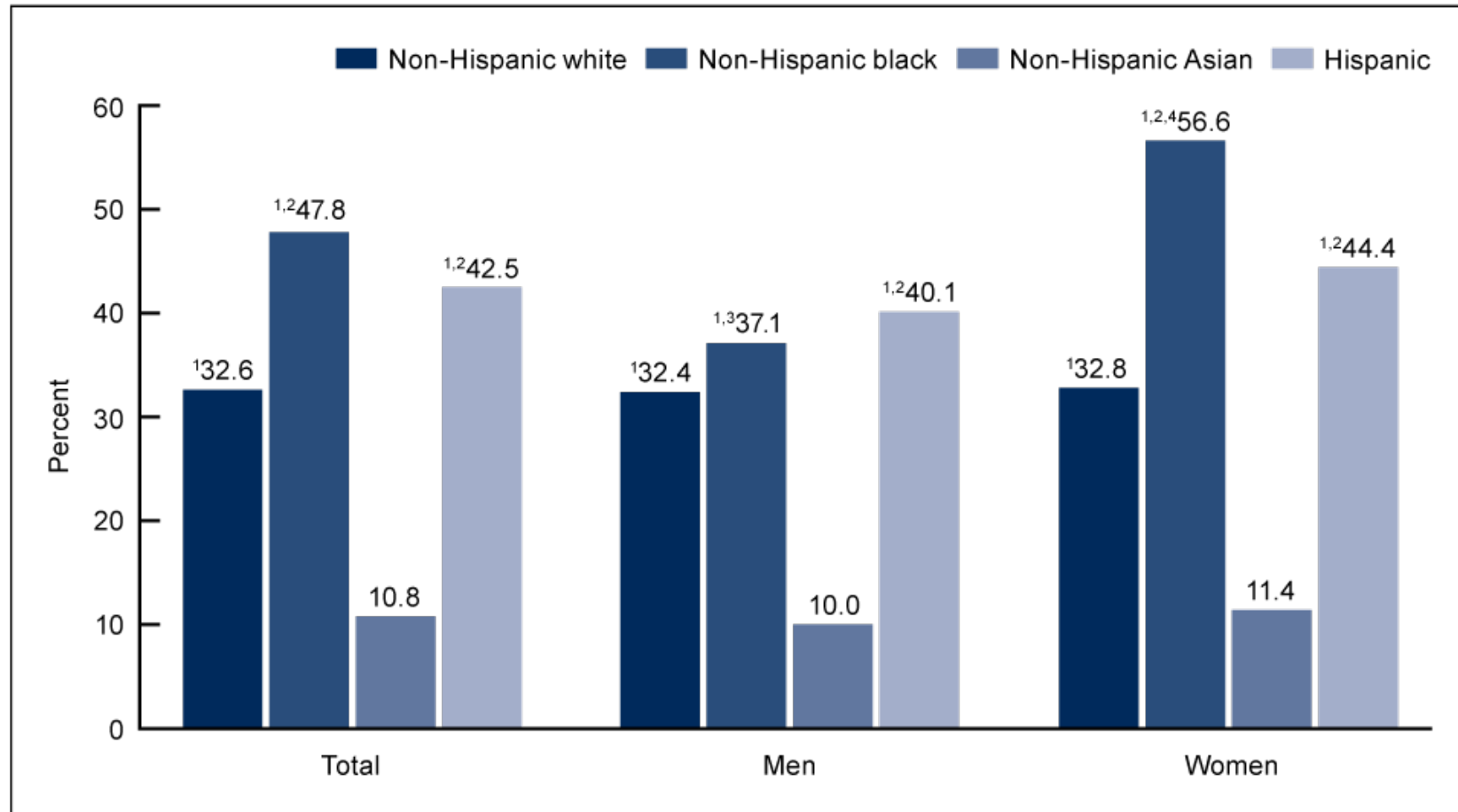
* Relative standard error (RSE) of 20%–30%. The estimate for non-Hispanic Asian children aged 2–5 is not shown because the RSE is greater than 30%.

NOTES: Obesity is defined as a body mass index at or above the sex- and age-specific 95th percentile of the CDC growth charts. Highest and lowest percentages

are based on observed percentages and were not tested for statistically significant differences against other percentages. See [Technical Notes](#) and [data table for Figure 22](#).

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey (NHANES).

Figure 2. Age-adjusted prevalence of obesity, by sex and race and Hispanic origin, among adults aged 20 and over: United States, 2011–2012



¹Significant difference from non-Hispanic Asian.

²Significant difference from non-Hispanic white.

³Significant difference from women.

⁴Significant difference from Hispanic.

NOTE: Estimates are age-adjusted by the direct method to the 2000 U.S. census population using the age groups 20–39, 40–59, and 60 and over.

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, 2011–2012.

Obesity is an Intergenerational Health Problem

1 Obese parent



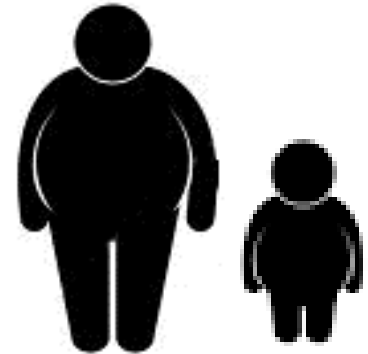
50% probability
of a child becoming
obese as an adult

2 Obese parents



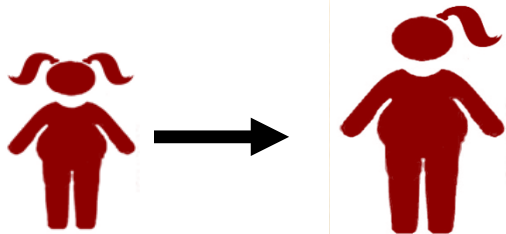
80% probability
of a child becoming
obese as an adult

**Obese 10-14 year old
teen + an obese parent**

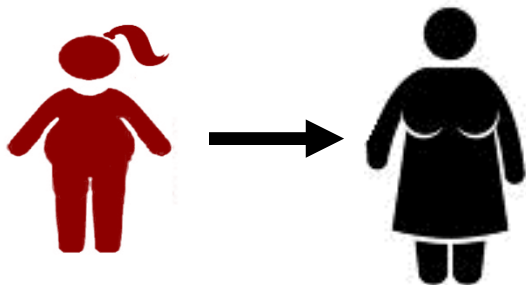


80% probability
of a child being
obese as an adult

Relation of Child BMI to Adult Adiposity



40% overweight children will remain overweight during adolescence

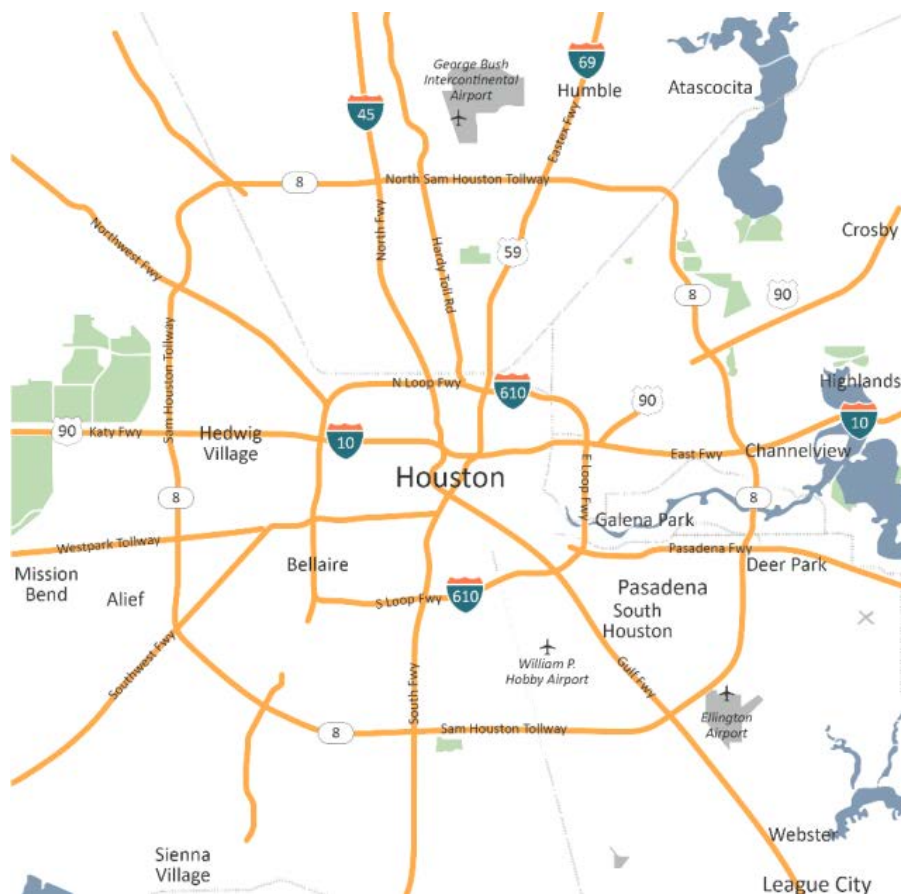


75-80% obese adolescents become obese adults



Child with high BMI is likely to be overweight or obese at 35 years of life

Obesity Rates among 12-17 Year Old Adolescents in Houston



34%
adolescents
were overweight

- Near Northside-Fifth Ward (57%)
- Downtown-East End (55%)
- Pasadena-South Houston (65%)

Source: The Health of Houston Survey 2010

Obesity and Acculturation



- Acculturation is associated with increased rates of obesity in Hispanics living in the United States.
- Longer duration of US residency increases prevalence of obesity.
- Research indicates that immigrants who moved to the US when they were 14 years old or younger are more likely to be obese than those who moved to the US at an older age.

Food Acculturation in Mexican and Mexican Americans

Food Acculturation Level



HIGH

- Eat more processed foods, salty snacks, and fried and fast food
- Drink more sweetened beverages and added sugars
- Eat more low-fat meat, dairy, fish, and fiber



LOW

- Eat more fruits and vegetables
- Eat less calories, saturated fat, and sugar
- Have reported to have more access to fruit and vegetables in home country

Sources: Batis, C., et al., 2011. Food acculturation drives dietary differences among Mexicans, Mexican Americans, and non-Hispanic whites. *The Journal of nutrition*, 141(10), 1898-1906.

Ayala, G. X., Baquero, B., & Klingler, S. (2008). A systematic review of the relationship between acculturation and diet among Latinos in the United States: implications for future research. *Journal of the American Dietetic Association*, 108(8), 1330-1344.

Food Acculturation in Children

Food Acculturation Level



- Eat more processed foods, salty snacks, and fried and fast food
- Drink more sweetened beverages and added sugars
- Eat more low-fat meat, dairy, fish, and fiber

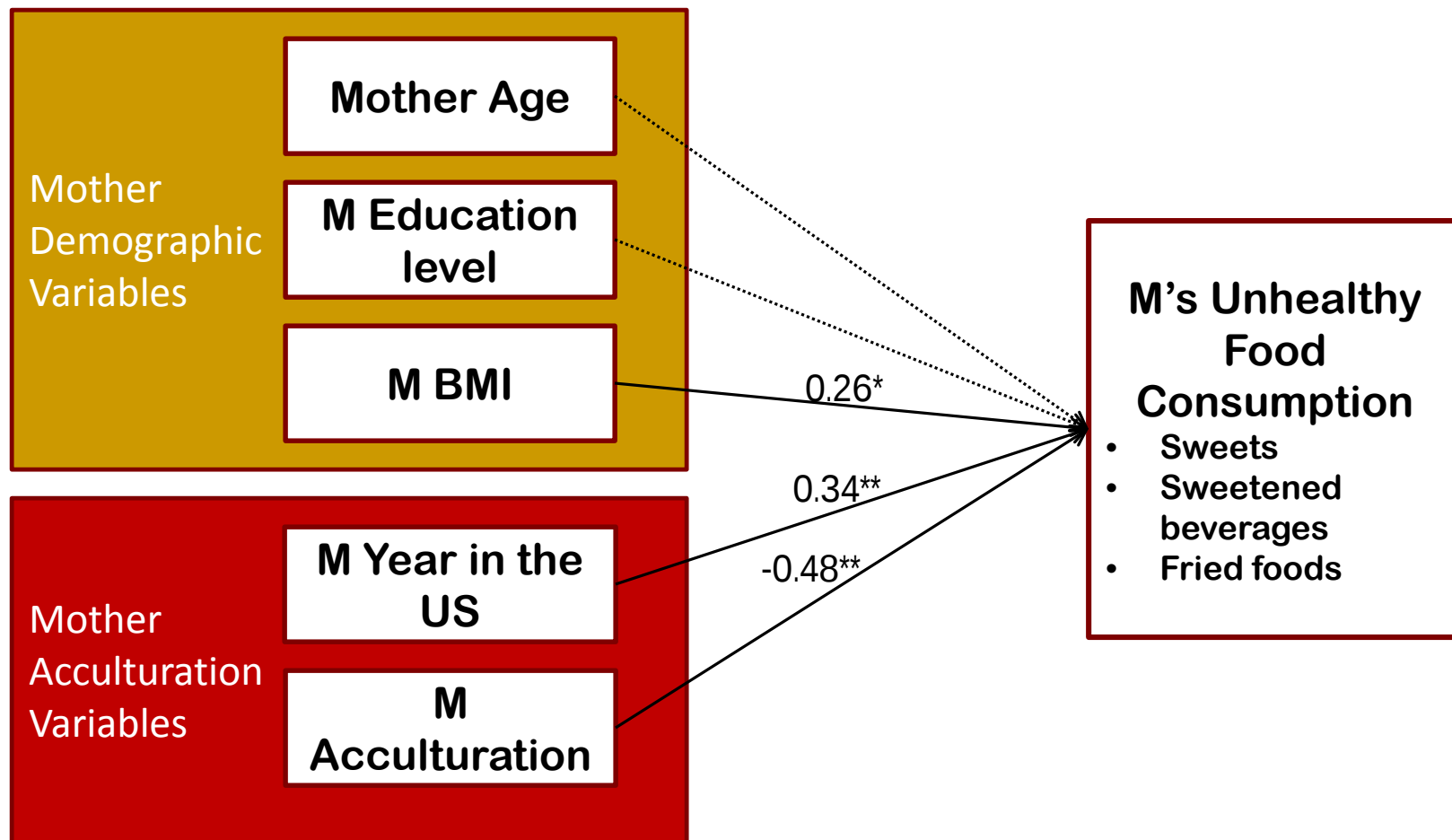


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Impact of Hispanic Mothers' Acculturation on their Food Consumption



Acculturation and Body Image

Maternal Acculturation

- Daughters 'choice of thinner figures as ideal
- But not with boys

Child Acculturation

- More likely to select thinner figures as attractive than were less acculturated counterparts

- Mothers viewed their daughters' actual body size as ideal though 34% of the girls were overweight (Olvera et al, 2005, *Obesity Research*, 13(11), 1970–1979).
-

Access to Food at Schools, Streets, and Farmer Markets





McDonald's Restaurants in Mexico



McDonald's Restaurants in the United States

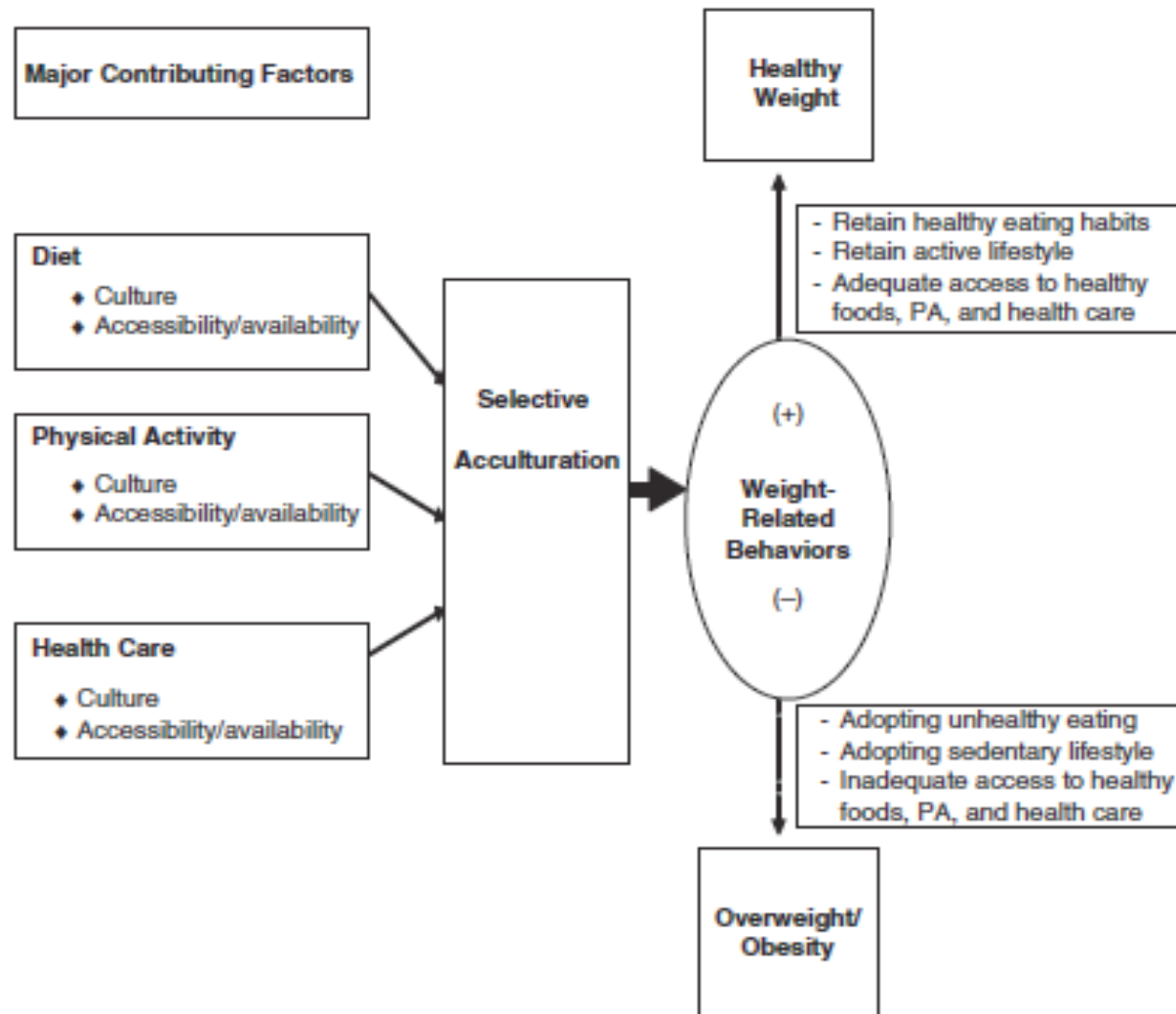
Map of Every McDonald's in the Country



As of 2014,
there were
14,350
McDonald's
restaurants in
the United
States



Conceptual Framework for Major Contributors to Immigrant Weight Status Through a “Selective Acculturation” Process



Source: Ming-Chen Yeh, et al, 2009. Determinants of Latina Obesity in the United States: The Role of Selective Acculturation. Journal of Transcultural Nursing, 20(1), 105-115

Selective Acculturation

Eating Patterns
Food Preparation
Food Home
Environment
Cultural
Perceptions:
Body Weight
Size

- Protective
- Risky



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Research Areas

Family and Peer

- Maternal Acculturation
- Parenting Socialization Strategies
- Maternal Body Image Disturbances
- Maternal and Peer Weight-Related Teasing
- Maternal Physical Activity
- Maternal Eating Behavior



Environment

- Neighborhood
- Schools
- Parks
- Spatial Landscape

Child Physical Variables

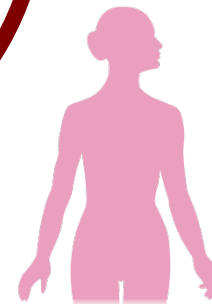
- BMI
- Adiposity
- Eating Behaviors
- Weight Control Strategies
- Physical Activity



**Low income and
Immigrant
Hispanic Families
with an
Adolescent
(9-14 years old)**

Child Psychological Variables

- Acculturation
- Body Image Dissatisfaction
- Weight-Related Teasing
- Weight Control Strategies





❖ Summer Program



❖ Cooking Demonstration

BOUNCE
12
YEARS



❖ Parenting Program



❖ Grocery Shopping Tours



❖ Grow Program



❖ Nutrition Ambassadors/Champions



❖ BOUNCE 5K Fun Run/Walk



❖ Positive Parenting Workshop



❖ BOUNCE STEM Integrated Program



❖ Lace Up and Move



❖ Fun with Food Program



BOUNCE HIGHLIGHTS

(SINCE 2010)



Reached over 1,000 individuals per year!



Reached over 15 elementary
and middle schools.



Accumulated over 20,000 volunteer
hours.

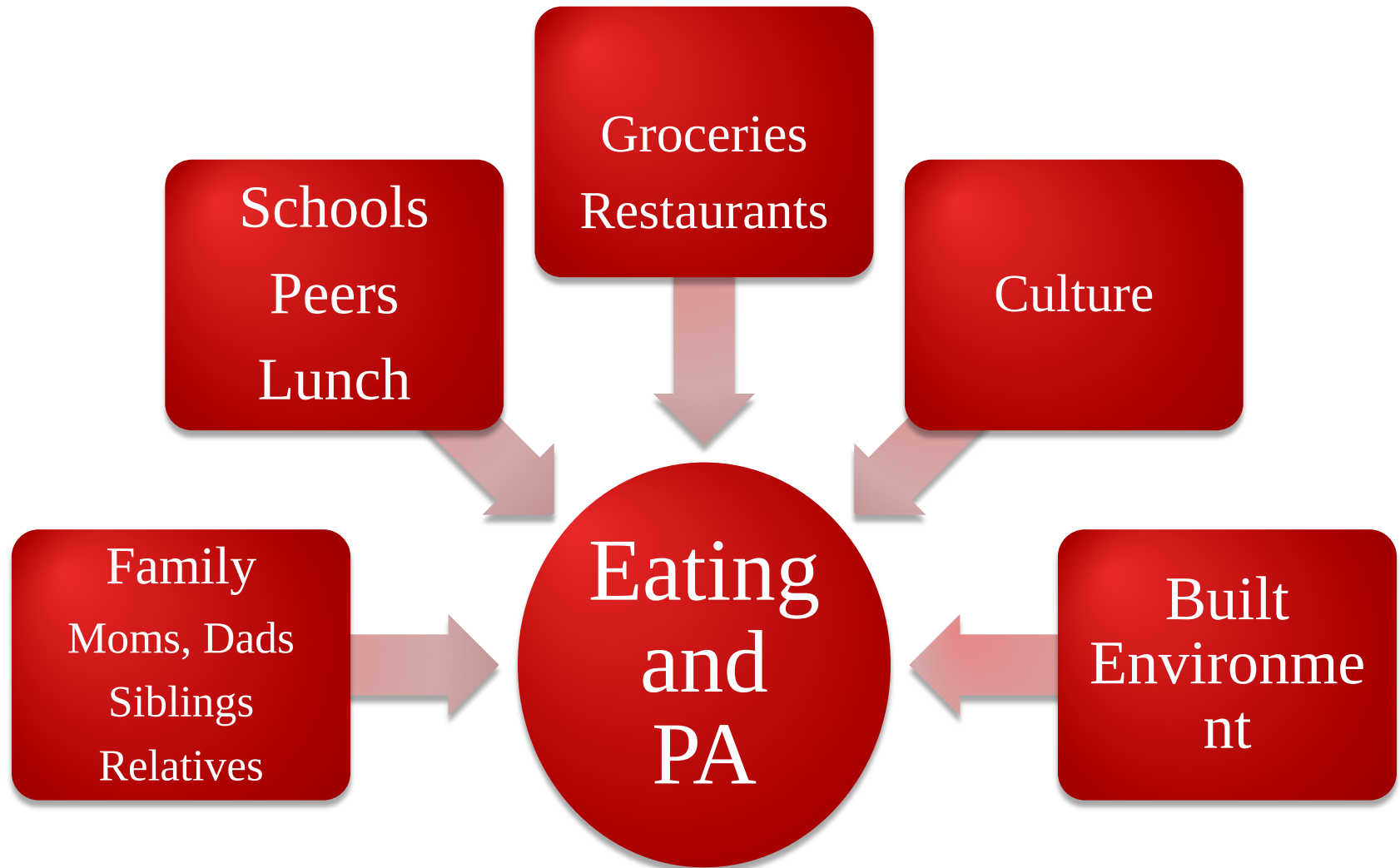


Featured in over 20 conferences at the local,
national and international level.



17 Scientific Manuscript Published

SOCIO-ECOLOGICAL MODEL



BEHAVIORAL OPPORTUNITIES UNITING IN NUTRITION, COUNSELING, & EXERCISE

(EST. 2005)



TYPICAL DEMOGRAPHICS

	Daughters	Mothers
M_{age}	11 years $\pm$ 1.3	38 years $\pm$ 5.6
Country of Birth		
<i>United States</i>	90%	23%
<i>Mexico/Central Am.</i>	10%	73%
<i>Other</i>	---	4%
Ethnicity		
<i>Hispanic</i>	85%	
<i>African American</i>	15%	

	Daughters	Mothers
Education		
<i>Grade 8 or less</i>	100%	14.2%
<i>Grade 9 – 12</i>	---	36.5%
<i>Some college or higher</i>	---	33.3%
Income		
$\leq 25,000$	---	68%
$>25,000$	---	31%
Average Family Size	---	5

*CDC Guidelines: Children status based on BMI percentiles (overweight: $> 85^{\text{th}}$ and $< 95^{\text{th}}$ percentile, obese $> 95^{\text{th}}$ percentile); Adults based on BMI (overweight: BMI > 25 and <30 , Obese > 30)

TYPICAL ADIPOSITY CHARACTERISTICS



	Daughters	Mothers
%BF M(SD)	42% $\pm$ 6.0%	41% $\pm$ 7.8%
Waist Circum.	96.9cm $\pm$ 13.7cm	101.7cm $\pm$ 19.3cm
BMI M(SD)	30.9 $\pm$ 5.5	32.9 $\pm$ 8.5
<i>Healthy</i>	--	20%
<i>Overweight</i>	18%	32%
<i>Obese</i>	82%	48%

*CDC Guidelines: Children status based on BMI percentiles (overweight: > 85th and < 95th percentile, obese > 95th percentile); Adults based on BMI (overweight: BMI > 25 and <30, Obese > 30)

BOUNCE Summer Programs



A statistically significant reduction of 2.49%-3.5% in percent body fat

A statistically significant mean reduction in waist circumference (5.27 cm)



A statistically significant reduction in 2.5 minutes in one mile walk/round

IMC	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00
110	44	45	47	49	51	53	55	57	59	61	63
105	41	42	44	46	48	50	52	54	56	58	60
100	38	39	41	43	45	47	49	51	53	55	57
95	35	36	38	40	42	44	46	48	50	52	54
90	32	33	35	37	39	41	43	45	47	49	51
85	29	30	32	34	36	38	40	42	44	46	48
80	26	27	29	31	33	35	37	39	41	43	45
75	23	24	26	28	30	32	34	36	38	40	42
70	20	21	23	25	27	29	31	33	35	37	39
65	17	18	20	22	24	26	28	30	32	34	36
60	14	15	17	19	21	23	25	27	29	31	33
55	11	12	14	16	18	20	22	24	26	28	30
50	8	9	11	13	15	17	19	21	23	25	27

A mean reduction of 1 pound per wk

Combined (2008-2010)

Variable	Pre	Post	F	df	Sig. (2-tailed)	Effect Size (Partial Eta ²)
%BF M (SD)	42.18 (6.69)	39.69 (7.38)	46.14	1, 87	<0.001	.374
WC (cm) M (SD)	93.93 (14.86)	88.30 (14.44)	25.95	1, 87	<0.001	.230
Weight (lb) M (SD)	159.16 (47.17)	157.60 (46.14)	22.00	1, 87	<0.001	.202
1-Mile Run/Walk (min) M (SD)	17.43 (3.36)	15.00 (2.76)	66.10	1, 85	<0.001	.473

Note: Small effect ($\leq .10$ to < 0.30); Medium effect (≥ 0.30 to < 0.50); Large effect (≥ 0.5)

Pre/Post-Intervention Changes
in Adiposity Indicators and Aerobic Endurance Among Mothers by Status

	Gainers (%)	Maintainers (%)	Losers (%)	Losers M(SD) Range
BMI	39.3%	10.7%	50.0%	1.02(2.20) .1 to -2.6
Percent Body Fat	10.7%	7.1%	82.1%	1.58(1.04) .1 to -4.10
Fat Mass	10.7%	7.1%	82.1%	3.44(3.12) 4 to -13.4
Waist Circumference	50.0%	0.0%	50.0%	2.30(2.24) .25 to -7.0
One Mile Run/Walk	40.7%	0.0%	59.3%	1.49(1.29) 1 to - 4.7 min

Body Image

How do you describe your child's body size?

Plump

Heredo el cuerpo
de su papá

Gordita

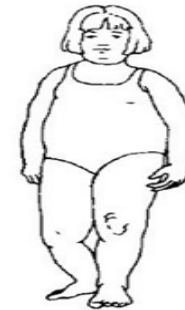
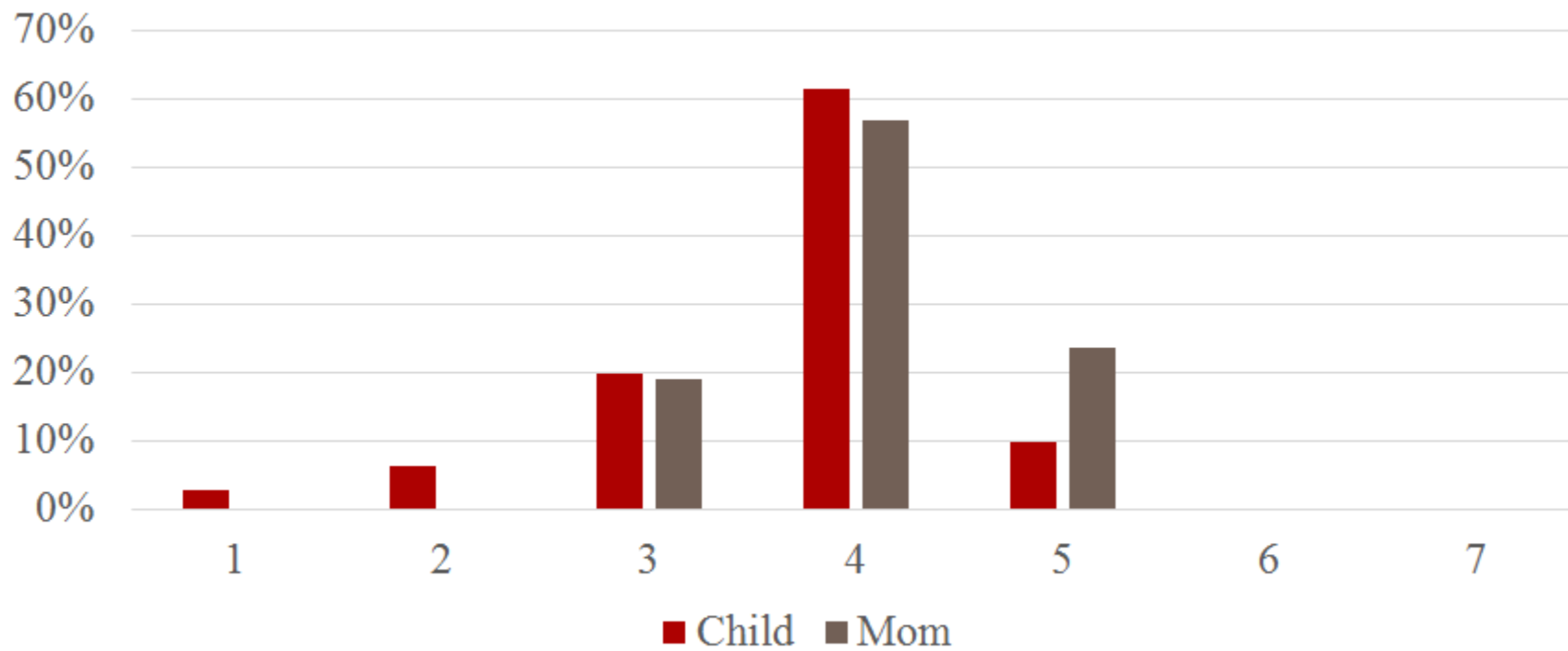
Fluffy

Big Boned

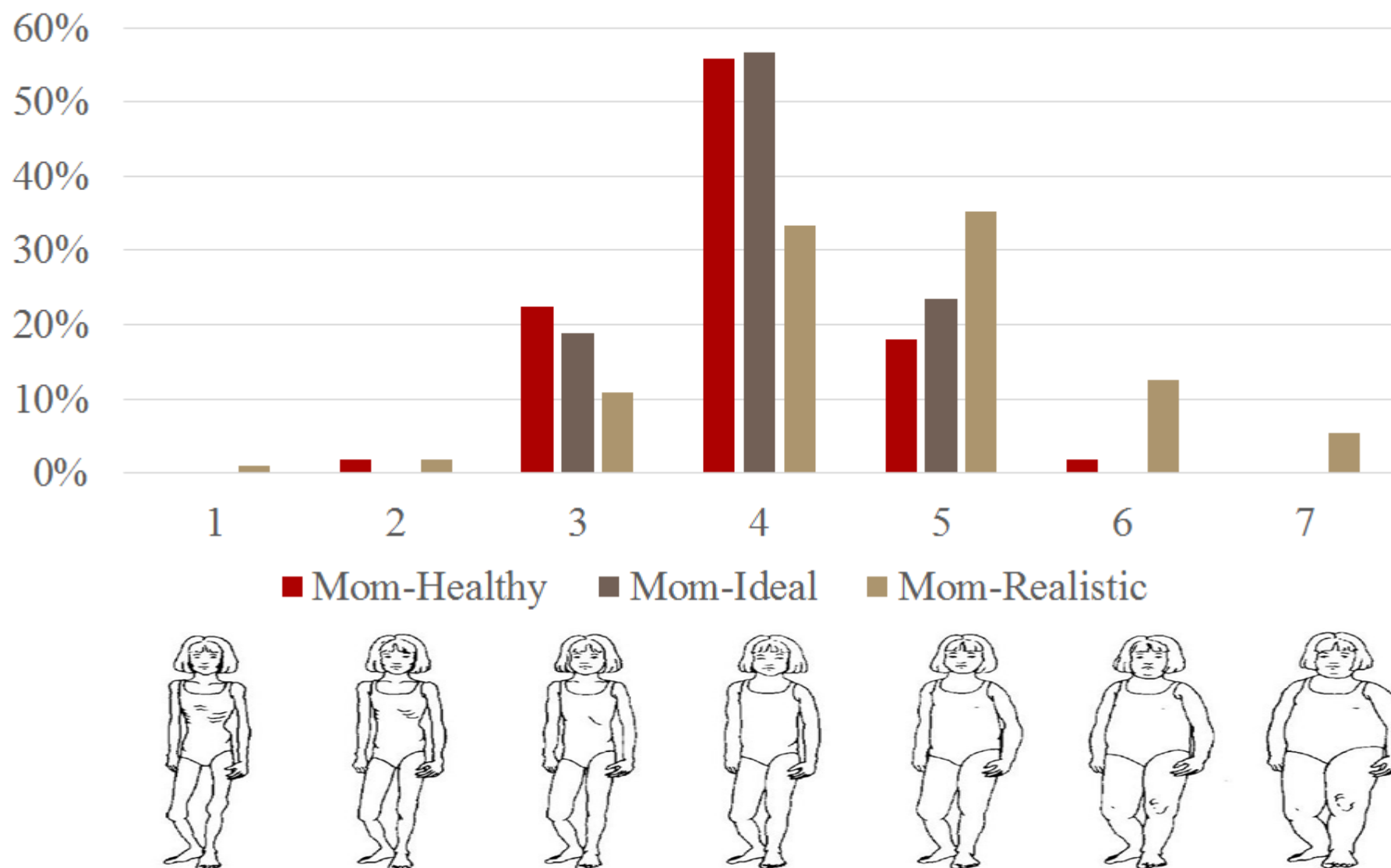
Well Rounded



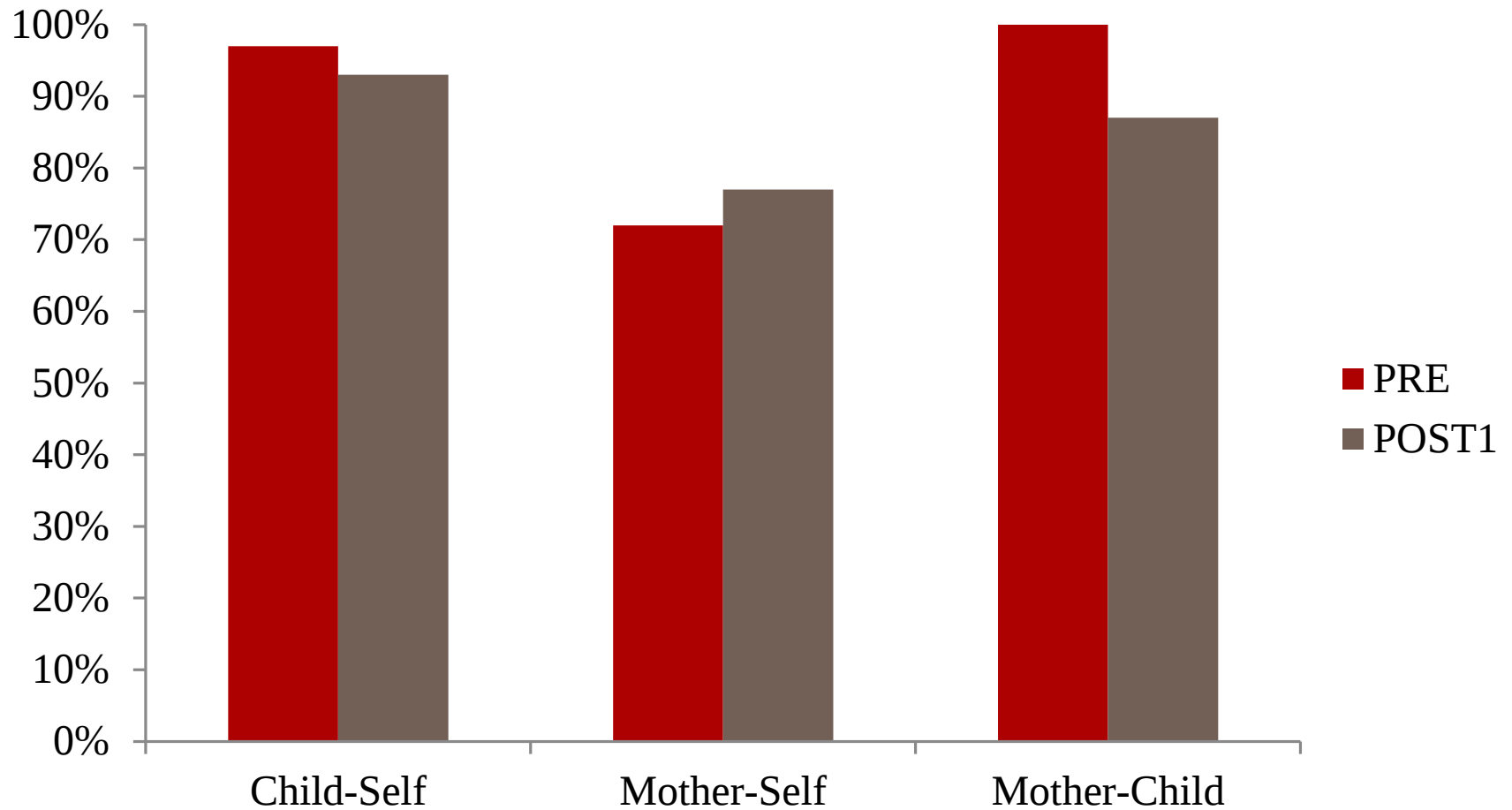
Ideal Body Size for Daughters



Mother's Ideal, Healthy, and Realistic Perception of Daughter's Body Size



Body Dissatisfaction



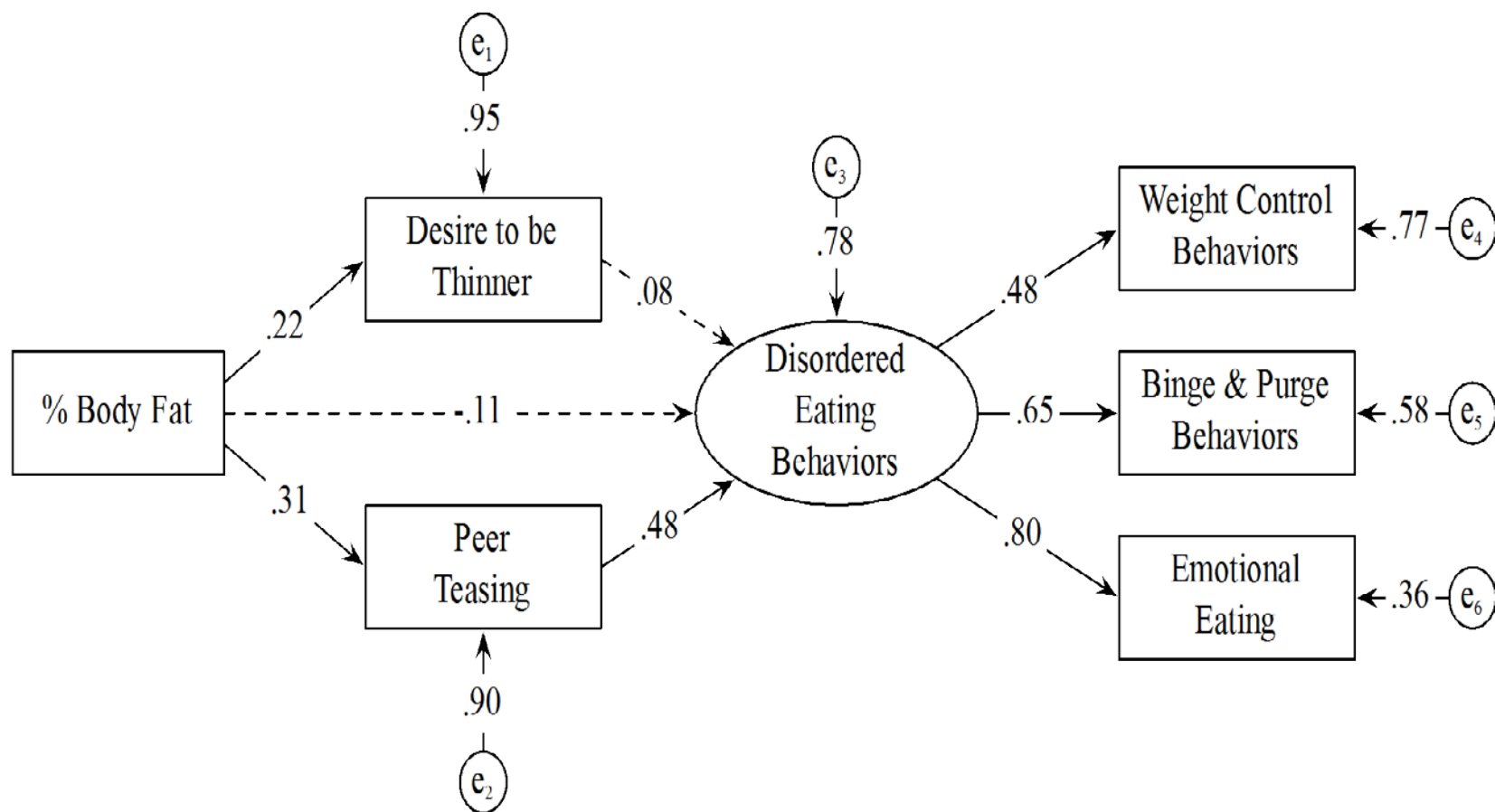
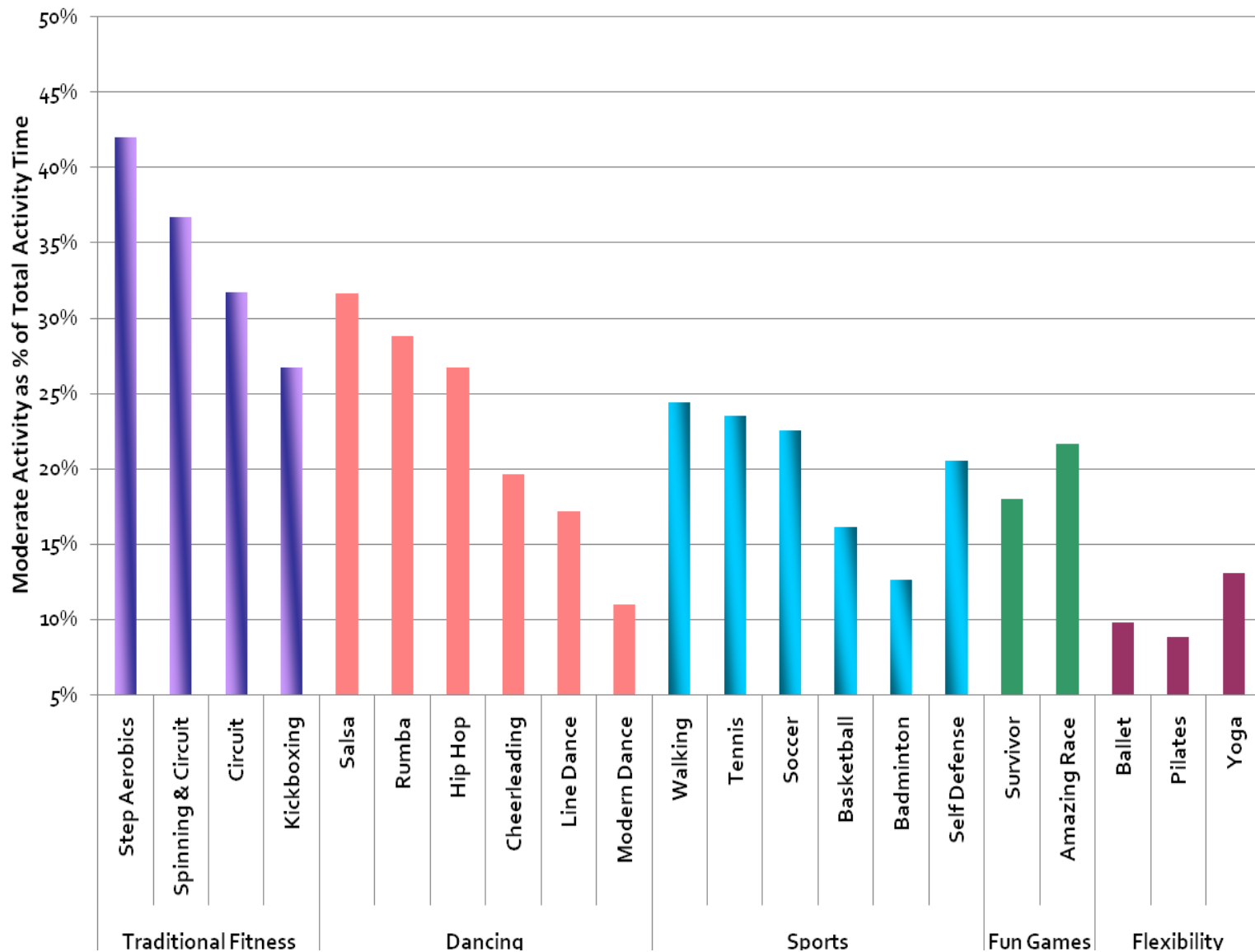


Figure 2. Final structural model with standardized path coefficients and residual variance. Solid lines represent significant paths, dashed lines represent non-significant paths.

Source: Olvera, N., McCarley, K., Matthews-Ewald, M. R., Fisher, F., Jones, M., & Flynn, E. G. (2015). Pathways for Disordered Eating Behaviors in Minority Girls The Role of Adiposity, Peer Weight-Related Teasing, and Desire to Be Thinner. *The Journal of Early Adolescence*, 0272431615609155.

PROPORTION OF MVPA BY ACTIVITY



Factors to Consider when Working with Hispanic Immigrant Families



Acculturation Level-Language,
Years in USA, place of birth

Literacy Level

Family Structure

Traditions & Values

Future Studies



Mindful Eating and
Exercise

Summer Program-Boys
and Girls

Use of Technology
Fitbits/Active Watch

Youth – Leadership

Major Collaborators and Partners

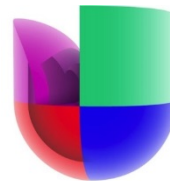
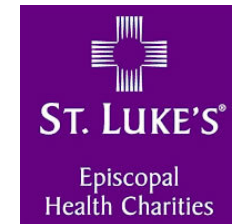
- City of Houston, Department of Health and Human Services
 - Clinics and Social Agencies (e.g., Community Family Centers, Gulfgate Pediatric Clinic)
 - Community Health Choice
 - Good Neighbor Healthcare Center
 - Grocery Stores: H-E-B, Kroger, Fiesta
 - Hispanic Health Coalition
 - Houston Food Bank
 - Texas Children's Hospital
 - UH ARAMARK
 - UH-Main Campus and Downtown: Health Experts, Graduate and Undergraduate Students
 - United HealthCare
 - UT MD. Anderson Cancer Center
-

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For questions

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