



# Obesity and Nutrition among Latino Population

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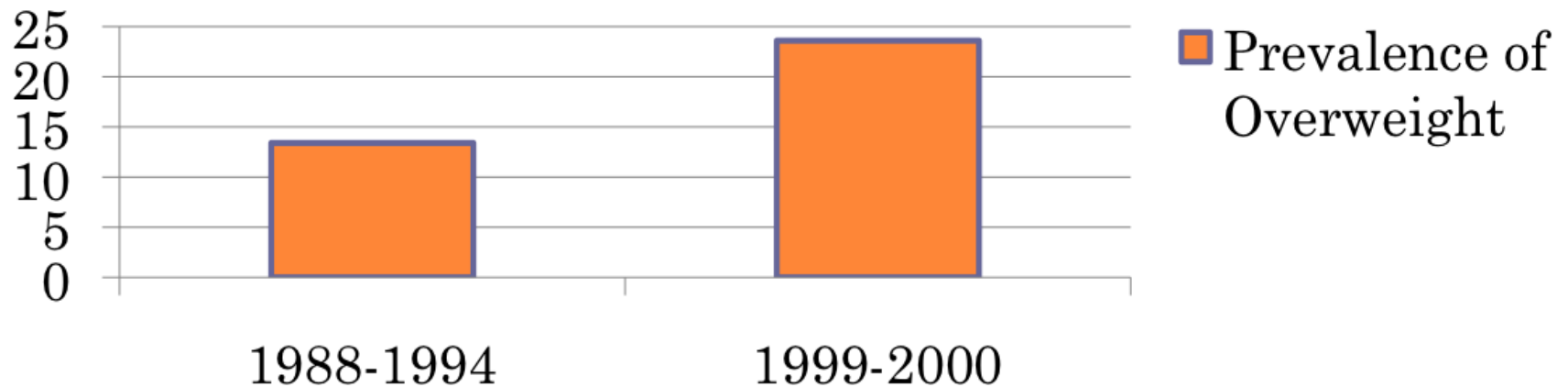
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# OBESITY IN LATINO/HISPANIC CHILDREN AND YOUTH



- Children and youth – 4 to 21 years old

## Prevalence of Overweight



# OBESITY IN LATINO/HISPANIC CHILDREN AND YOUTH



- Socioeconomic status and ethnic differences
  - Lower SES ~ Higher BMI (Clarke, Malley, Johnston & Schulenberg, 2009)
  - 29% at risk for overweight; American Indians/Pacific Islanders followed by Latinos/Hispanics (Ahn Joon & Gittelsohn, 2008)
  - High rates of overweight and obesity among Mexican Americans (36.7%; 24.2%) and Central Americans (39.4%; 22.2%) (Bates, Acevedo-Garcia, Alegria & Krieger, 2008)
  - First (39.0%) and second generation (38.5) Latinos/Hispanics had the highest prevalence of obesity (Singh, 2009)

# OBESITY IN LATINO/HISPANIC CHILDREN AND YOUTH

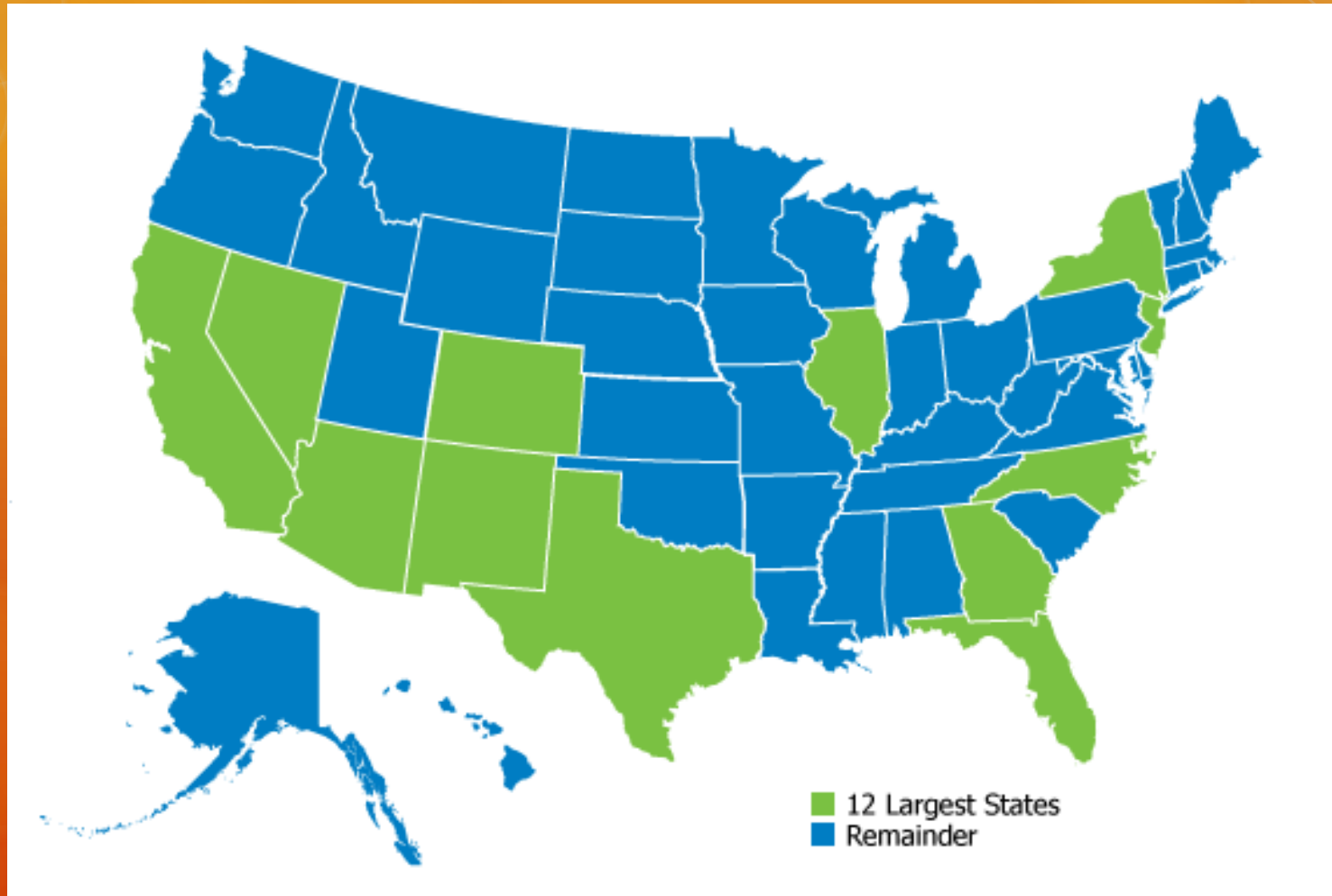


- Gender differences
  - Latino/Hispanic boys = 22.1%
    - ✦ Higher than non-Hispanic white boys (17.3%) and black boys (18.5%)
  - Latino/Hispanic girls = 19.9%
    - ✦ Second to non-Hispanic black girls (27.7%) and non-Hispanic white (14.5%)
  - Girls become overweight at age 5, boys become overweight at age 8 (Lagstrom et al., 2008)

<http://www.youtube.com/watch?v=pnfZvxXlTIc&feature=related>



# Twelve States With the Most Latinos, 2009



Source: U.S. Census Bureau 2008 American Community Survey

# **CALIFORNIA HISPANIC POPULATION CHANGE 2000 - 2010 IN %**

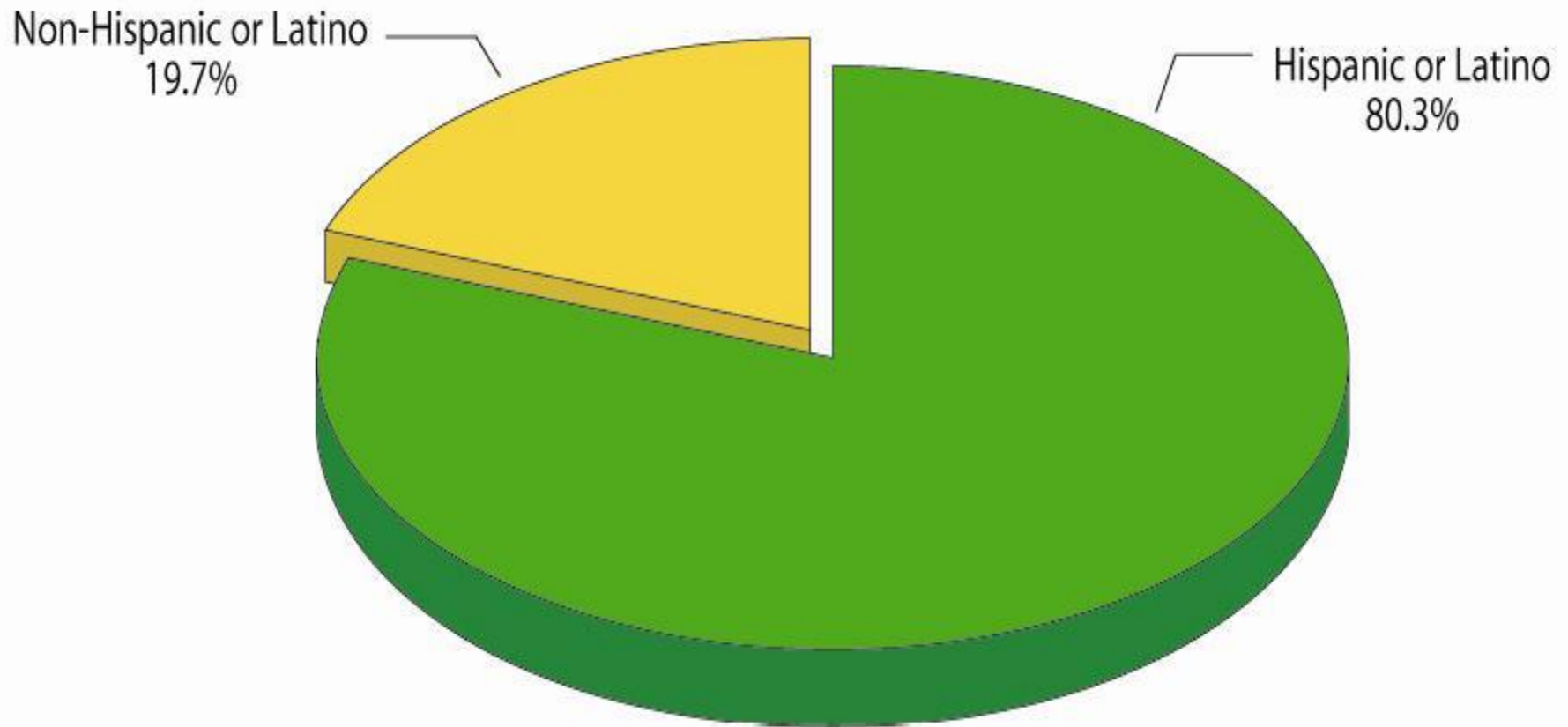
**27.8 %**

**(CA. POPULATION 38 MIL.)**

**Source: U.S. Census Bureau 2008 American Community Survey**

Graph 4

## **Santa Ana Hispanic Ethnic Composition 2008**



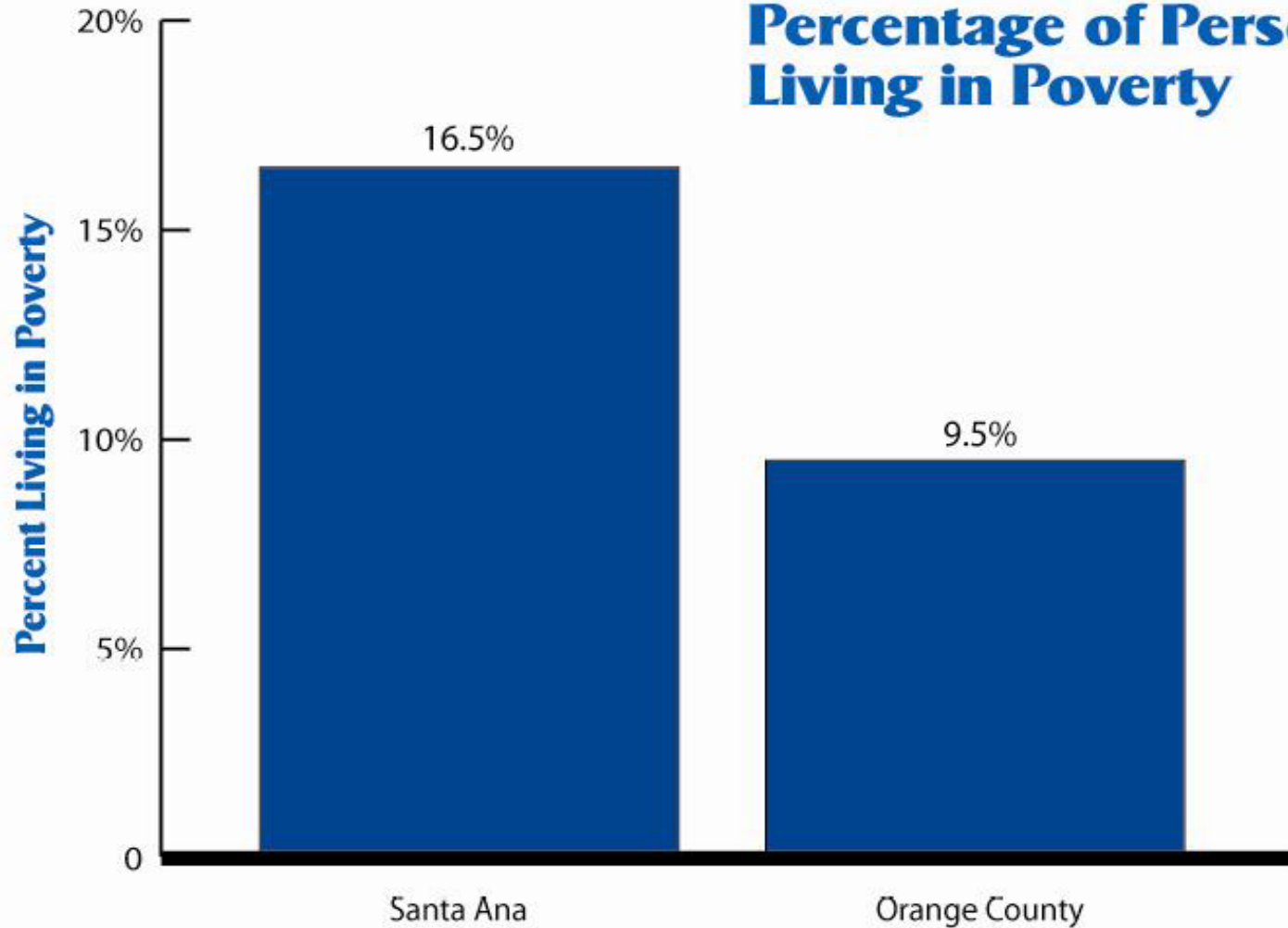
**Source: U.S. Census Bureau 2008 American Community Survey**

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Graph 7

## Percentage of Person Living in Poverty



Source: U.S. Census Bureau 2008 American Community Survey

# DISPARITIES & BARRIERS

- Poor health outcomes and disparities are a result of multiple factors, such as socioeconomic status, individual characteristics, emotion, family, environmental and other social and cultural factors
- Barrier to healthcare access is a significant contributor to poor health outcomes and disparities

# **Barriers to Healthcare Access among Latino Population**

## **Primary Access Barriers**

### **Health Insurance**

**Lack of insurance, and inability to pay for care or treatments**

## **Secondary Access Barriers**

**Organizational and systems of care**

**All barriers encountered between home and providers' office: availability of care, transportation, childcare, waiting times, etc.**

## **Tertiary Access Barriers:**

**Communication between provider and patient**

**when language and culture hinder the provider-patient communication**

# **Access Barriers Impact on Latinos' Health**

**A. Less screening and preventive care**

**B. Late presentation to healthcare**

**C. Less treatment or no treatment**

- **poor adherence to therapeutic plan**
- **limited health education**

**C. Leads to poor health outcomes and disparities**

# **How to Provide Patient-Centered Cross-Cultural Care ?**

- **Acknowledge and engage the patient**
- **Explain and gain their trust**
- **Negotiate**
- **Identify and address areas of cross-cultural sensitivity**

(Carrillo, '04)

# **Challenges in Diagnosis and Treatment of Obesity in Hispanics**

**CULTURE  
STIGMA  
COMPLIANCE  
PATIENT CENTERED DESIGN**

**“WORK IN PROGRESS”**

# Why Do Kids Eat More and How?

- **Generational – “My parents taught me and expect me to clean the plate and not waste food.”**
- **Relational - “Feelings will be hurt if children don’t finish what was cooked or served.”**
- **Economical - “This is hard to get so it has to be consumed.”**
- **Convenience - “Mom and Dad work and food is bought prepared”**
- **Emotional - “Extreme moods may increase the chances for emotional eating.”**



# **Treating Hispanics – Points to Consider**

- **Do most parents seek help for overweight or obesity?**
- **Does the parent accept the diagnosis and the need for treatment?**
- **Will the parent accept the type of treatment?**
- **Can they afford the treatment?**
- **Do they understand they need to make lifestyle changes?**
- **Do they understand this will be a long term plan?**
- **Do we trust what the patient tells you?**
- **Does the parent trust what we tell him/her?**
- **Will the parent accept changes that may interfere with their preferences for lifestyle**
- **Will the parent tell you about non compliance?**



# Common Obesity Intervention Approach

- **Decrease intake (lower calories)**
- **Increase output (increase physical activity and decrease sedentary time)**
- **Family involvement and parental modeling**
- **Longer programs between 8 – 16 weeks work better**
- **Must include goal setting and self monitoring**

**PEDIATRICS 18 January 2010, 10.1542/peds.2009-1955**

# Program Evaluation



- Whether the changes in obesity vary according to baseline psychological characteristics

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- To evaluate the short-term and long term effectiveness of the program with respect to changes in selected indicators of obesity



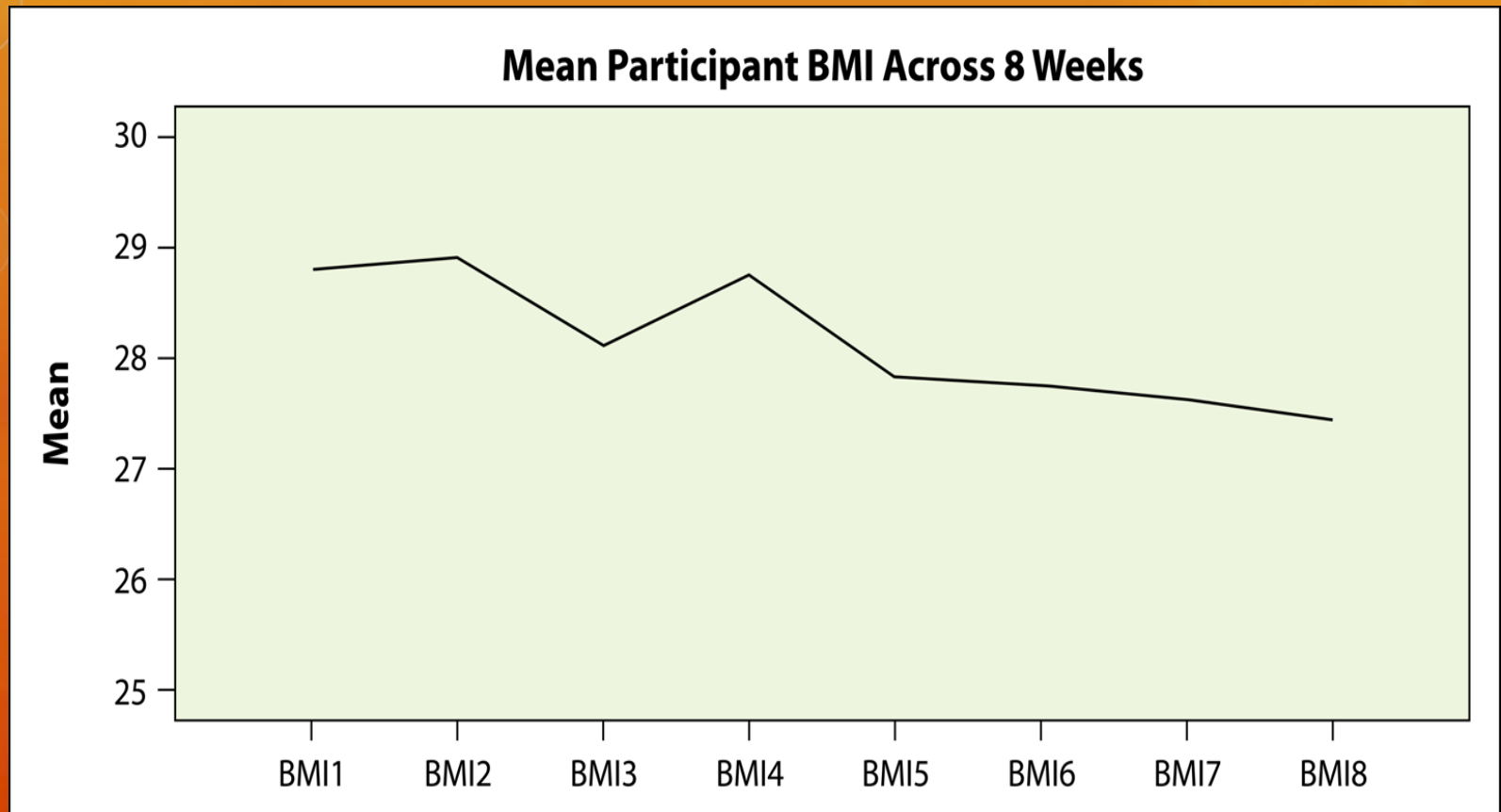
# Methods



- **The target population included:**
  - \* **A total of 553 Latino children that participated in the program in 2007 and 2008 were evaluated**
  - \* **Ages 5-18 years old at enrollment**
  - \* **Body Mass Index (BMI) at the 85<sup>th</sup> percentile or higher**
  - \* **No previously diagnosed co-morbidity**
- **The essential intervention program lasted 8 weeks**
- **Changes in BMI, BMI percentile, waist circumference, and body fat were evaluated at the end of 8 weeks, 6 and 12 months follow-up**

# Results– BMI across 8-Weeks

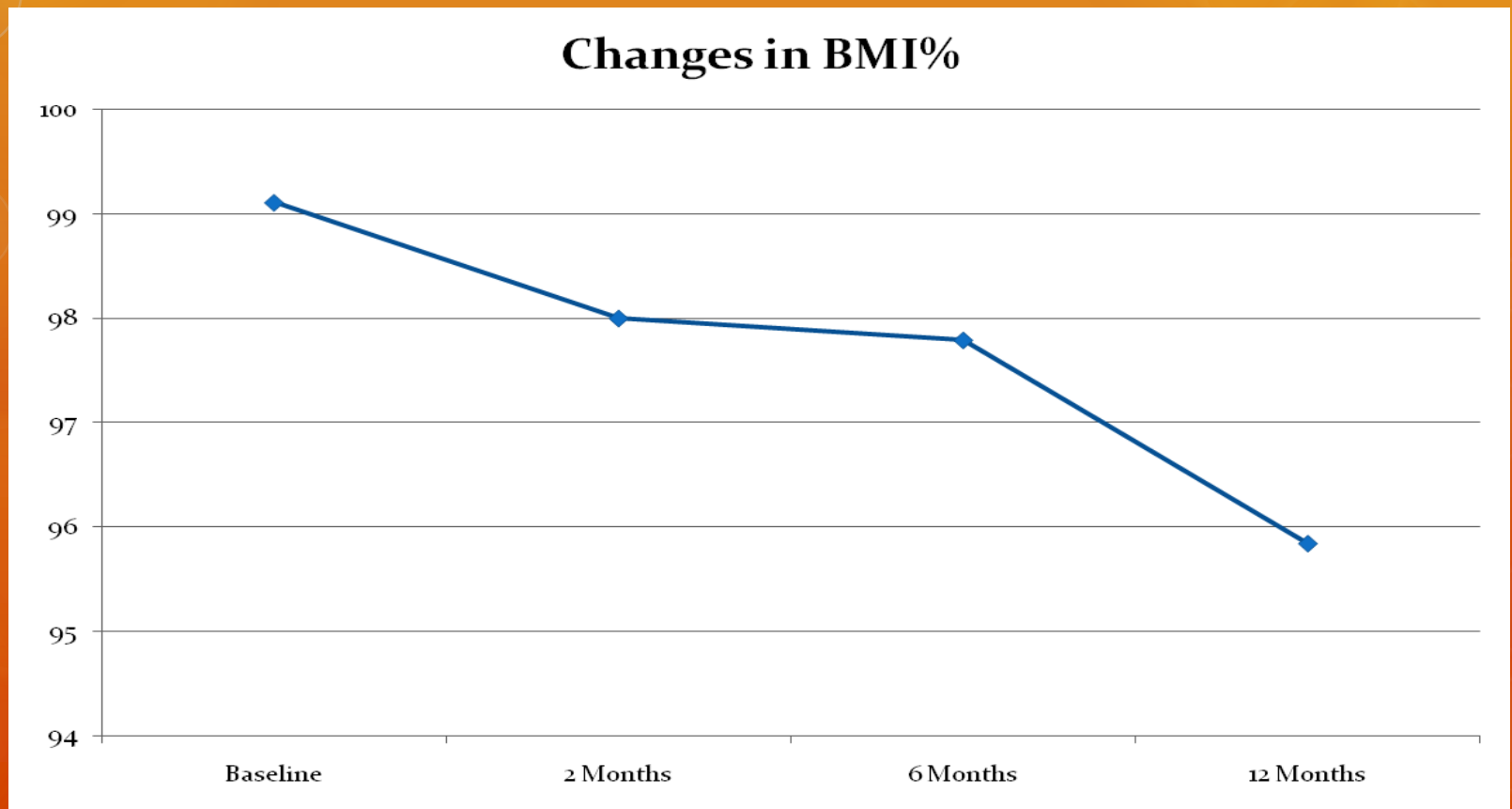
- Results indicated that decreases in BMI across the 8-week intervention was significant at the .10 level ( $F = 2.64$ ,  $p = .07$ ). Changes in BMI did not vary by gender ( $p = .73$ ) or age ( $p = .99$ )





# Results-- BMI Percentile

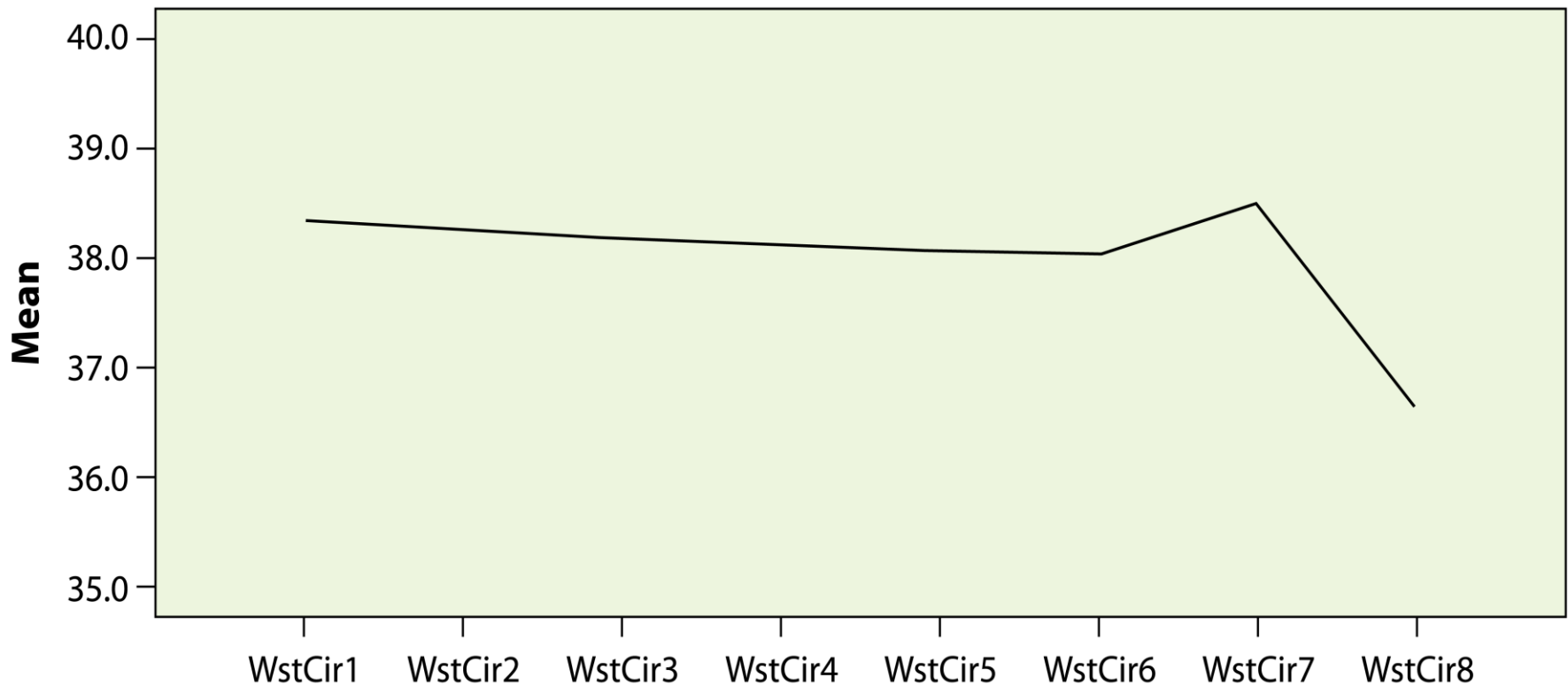
- Results indicated that decreases in BMI percentiles across the 8-week intervention were significant ( $F=11.383$   $p<0.001$ ) and these changes were maintained for 6 and 12 months



# Results– 8-weeks in Waist Circumference

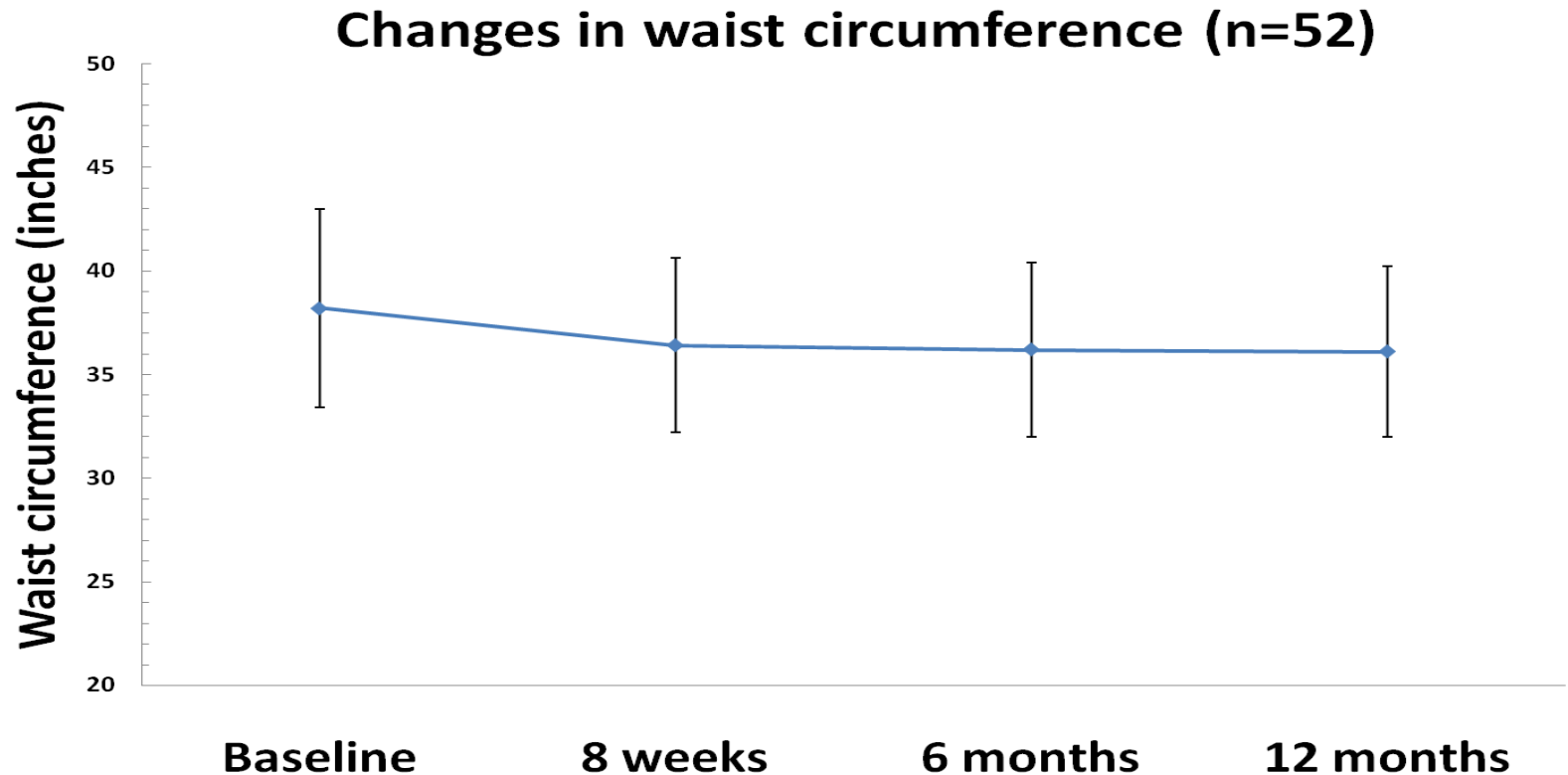
- Results indicated that decreases in waist circumference across the 8-week intervention was significant at the .10 level ( $F = 6.35$ ,  $p = .01$ ). Changes in waist circumference did not vary by gender ( $p = .50$ ) or age ( $p = .80$ )

**Mean Participant Waist Circumference Across 8 Weeks**



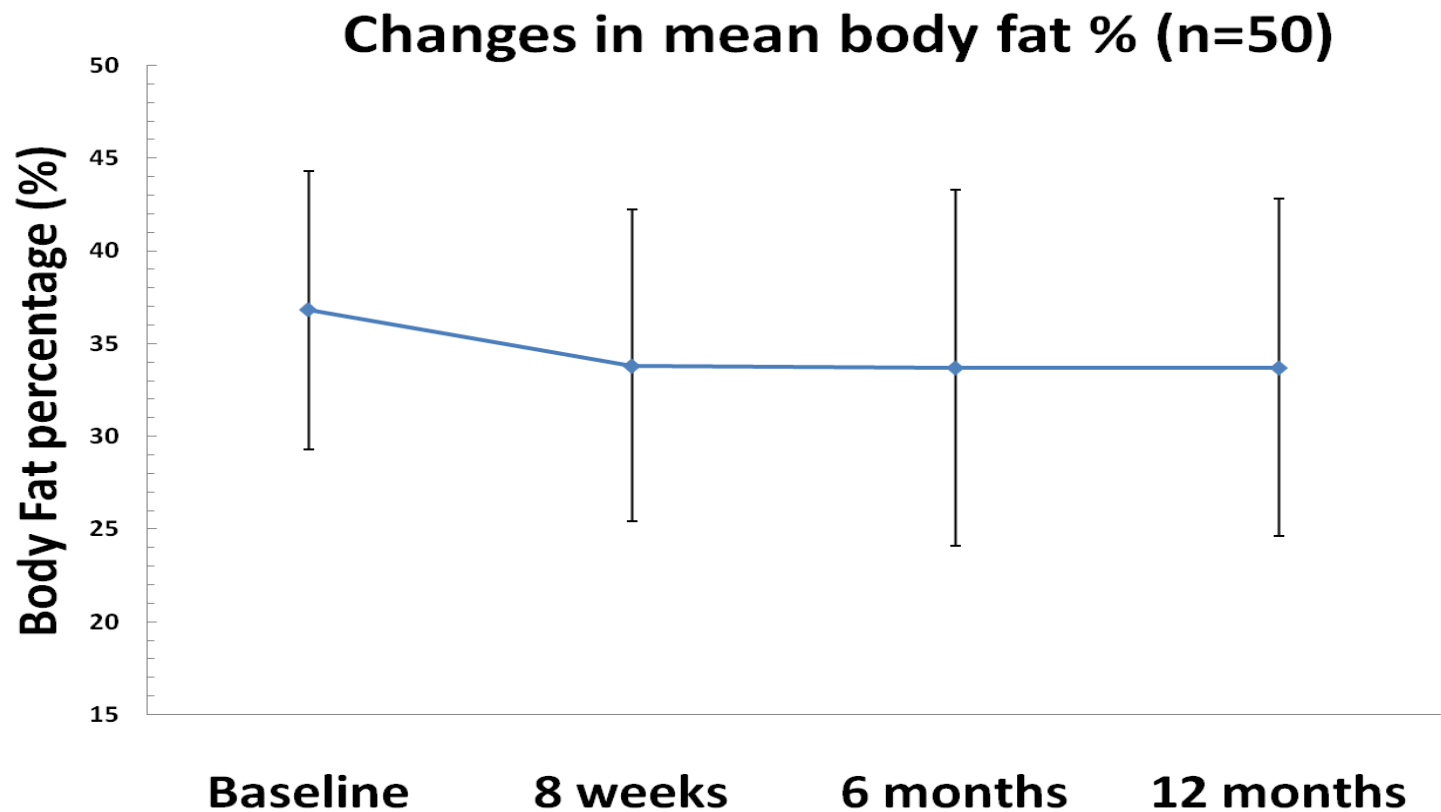
# Changes in Waist Circumference

- Significant ( $F=35.074$  ,  $p<0.001$ ) decreases in waist circumference across the 8-week intervention that were sustained after 6 and 12 months post-intervention



# Results – Changes in Body Fat

- Changes in body fat percentage were also significant ( $F=8.427$ ,  $p<0.001$ ) after the intervention and remained constant after 12 months

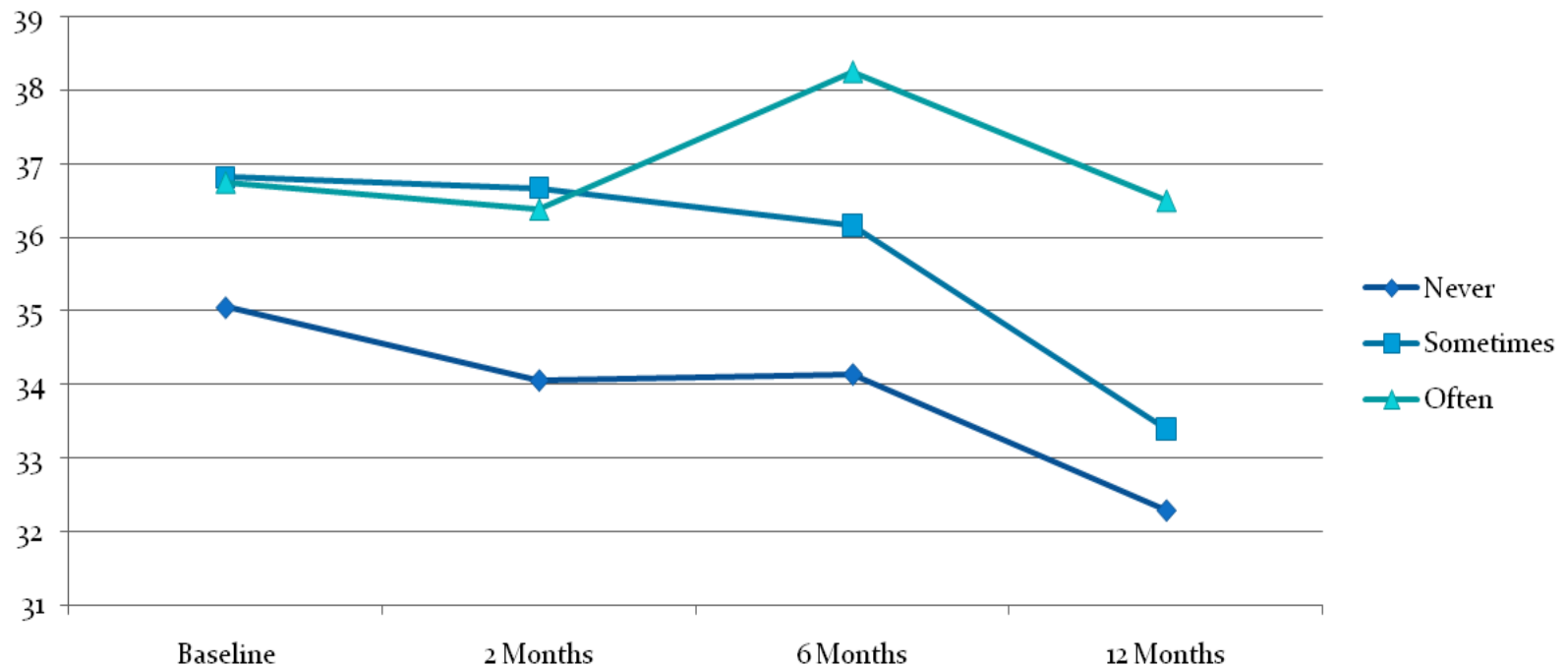




# Results – Depression Symptom

- **Unhappiness**: ( $F=4.804$ ,  $p=0.007$ ) . Those who were unhappy more often were less likely to continue long-term reductions in waist circumference

Changes in Waist Circumference by Levels of Unhappiness



# Role of Parents

- **For young children, parents play a huge role in their eating and exercise habits.**
- **They are responsible for providing opportunities for children to be active and can set rules for TV and video game use.**
- **Younger children are still spending most of their time at home and eating most meals at home.**
- **Parents buy and prepare food, and decide what and how much kids should eat.**

# Parent's Outcomes

- After the intervention sessions, parents said they felt more comfortable saying "no" to their children's demands
- Creating contracts to promote positive behaviors
- Limiting the amount of time they spent watching TV or playing video games
- Setting limits on the type of food the children could eat
- Improving their own lifestyle

# Do Mothers Practice What they Know?

- **Purpose:** Examine gaps between mothers' knowledge, intension, and their actual feeding behavior

- **Participants:** Mothers paired with their children who are in the obesity intervention at the Wellness Center; **those mothers attend the weekly nutrition class at the wellness center**

- **BIG Decision:**

- Further help children eat healthy and be more physical active
- Decrease the chance of my child being overweight
- Feel proud about doing something good for my family
- Establish healthy eating habits for my child

## **Little decision: Possible consequence for dinner's choice each day**

- My child is happy eating what they want tonight
- My child's weight is affected by what they eat tonight
- My child enjoys the taste of tonight's meal
- My child enjoys eating with family tonight
- Saving time preparing tonight's meal
- Not disappointing my family with tonight's meal
- Spending less money for tonight's meal not feeling tired preparing tonight's meal
- Preparing food to quickly satisfy my child's hunger

# Study Design

## 1. Experiment group (X1): all the moms attend weekly nutrition class

- Report decision making process for dinner choice on a PDA (before cooking) for 6 weeks—PAD serves as reminder which should have intervention effect
- Take pictures of the dinner prepared for their child each night
- Food logs to report meal chosen for their target child after the dinner each night for 6 weeks

## 2. Experiment group (X2):

- Report decision making process for dinner choice on a PDA
- **No picture taken**— to verify the validity of the responses
- Food logs to report meal chosen for their target child after the dinner each night for 6 weeks

## 3. Control group (X3):

- Food logs to report meal chosen for their target child after the dinner each night for 6 weeks (no PDA and pictures)



# mHealth (Mobile Health) --Future Health Care

- **mHealth** is a recent term, broadly defined as health care supported by mobile devices
- 1. **mHealth** technology services remove the distance barrier between patient and the health care providers and health educators. Therefore, mHealth technology could be of great use for improving clinical output and also can be used for public health monitoring and education
- 2. **mHealth** helps in “real-time” monitoring of vital medical signs and direct provision of health-related messages and care for citizens (Byrne, 2005).



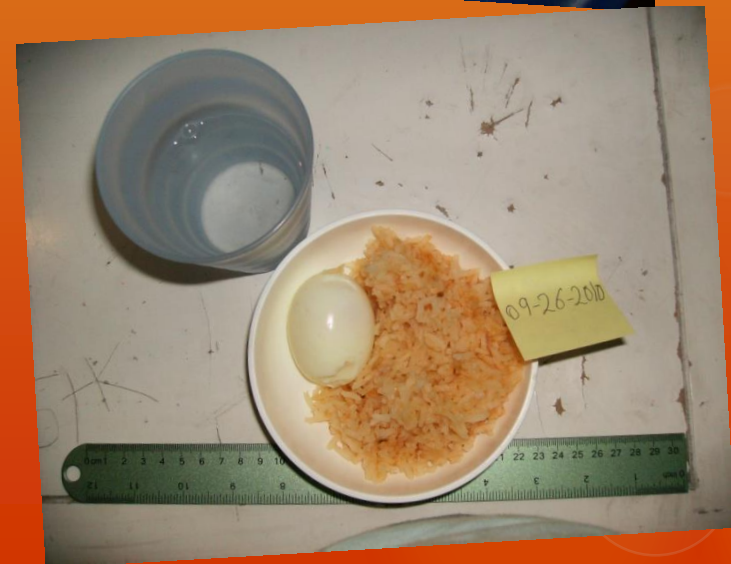
# mHealth—the Future Health Care

- 3. mHealth services remove the distance barrier between patient and the health care providers and health educators. Therefore, mHealth technology could be of great use for improving clinical output and also can be used for public health monitoring and education**
  - 4. mHealth technology is capable for adding efficiency and effectiveness to existing health systems, developing new ideas and ultimately distributing health care benefits across society**
- ❖ **MDM is in working progress--excited for the results. We also plan to interview fathers to examine their role if food choices for their children...**





# Pictures for Foods Taken by Parents



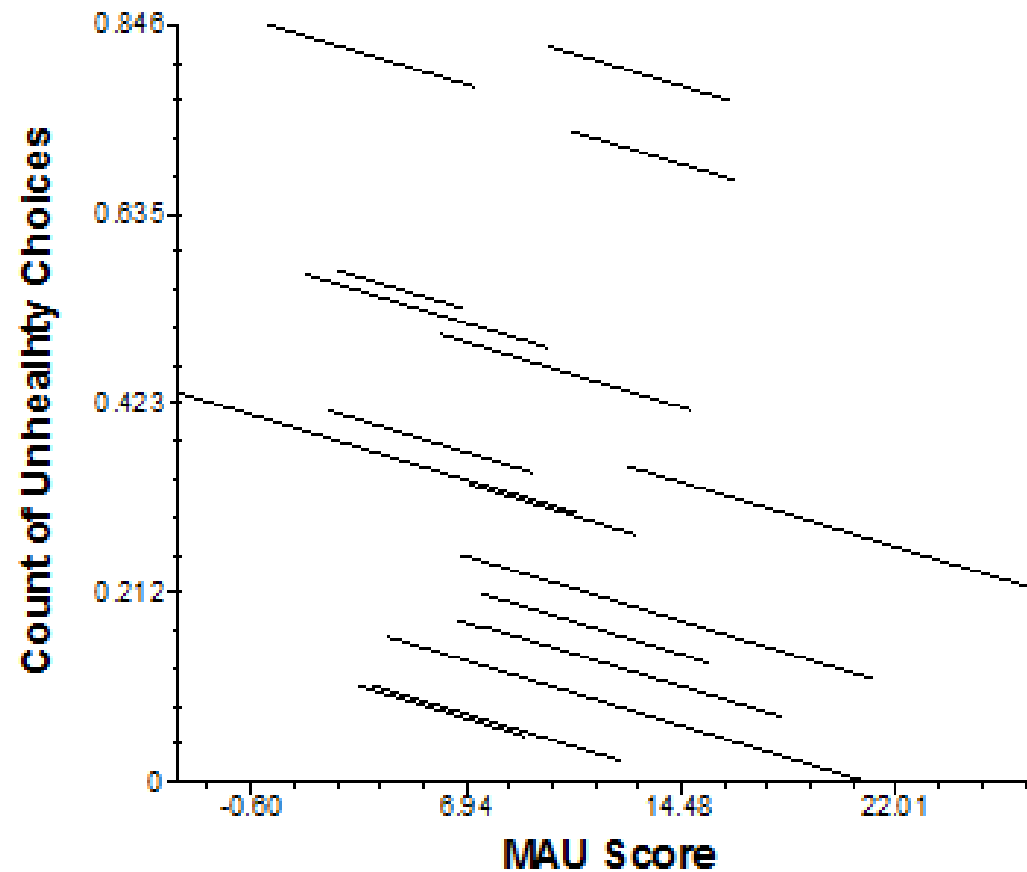


# Preliminary Findings



- MAU ( $b = -.032$ ,  $p < .001$ ) predicted unhealthy choices. Specifically when participants had higher MAU scores than their own average, they reported a lower amount of unhealthy foods.
- Of the different product scores, Happy ( $b = -.062$ ,  $SE = .032$ ,  $p = .05$ ), Enjoy ( $b = -.080$ ,  $SE = .039$ ,  $p = .040$ ) and Tired ( $b = -.086$ ,  $SE = 0.039$ ,  $p = .027$ ) all were related to amount of unhealthy food.

# Higher MAU scores-- lower unhealthy foods



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"Steak? Let's go with the fish. It's brain food. After, if you still think eating steak is a good idea, we'll do that."