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REACH, IMPLEMENTATION AND
EFFECTIVENESS OF A PILOT TO
TREAT CHILDHOOD OBESITY IN
LOW-INCOME FAMILIES



Translating Research into Practice

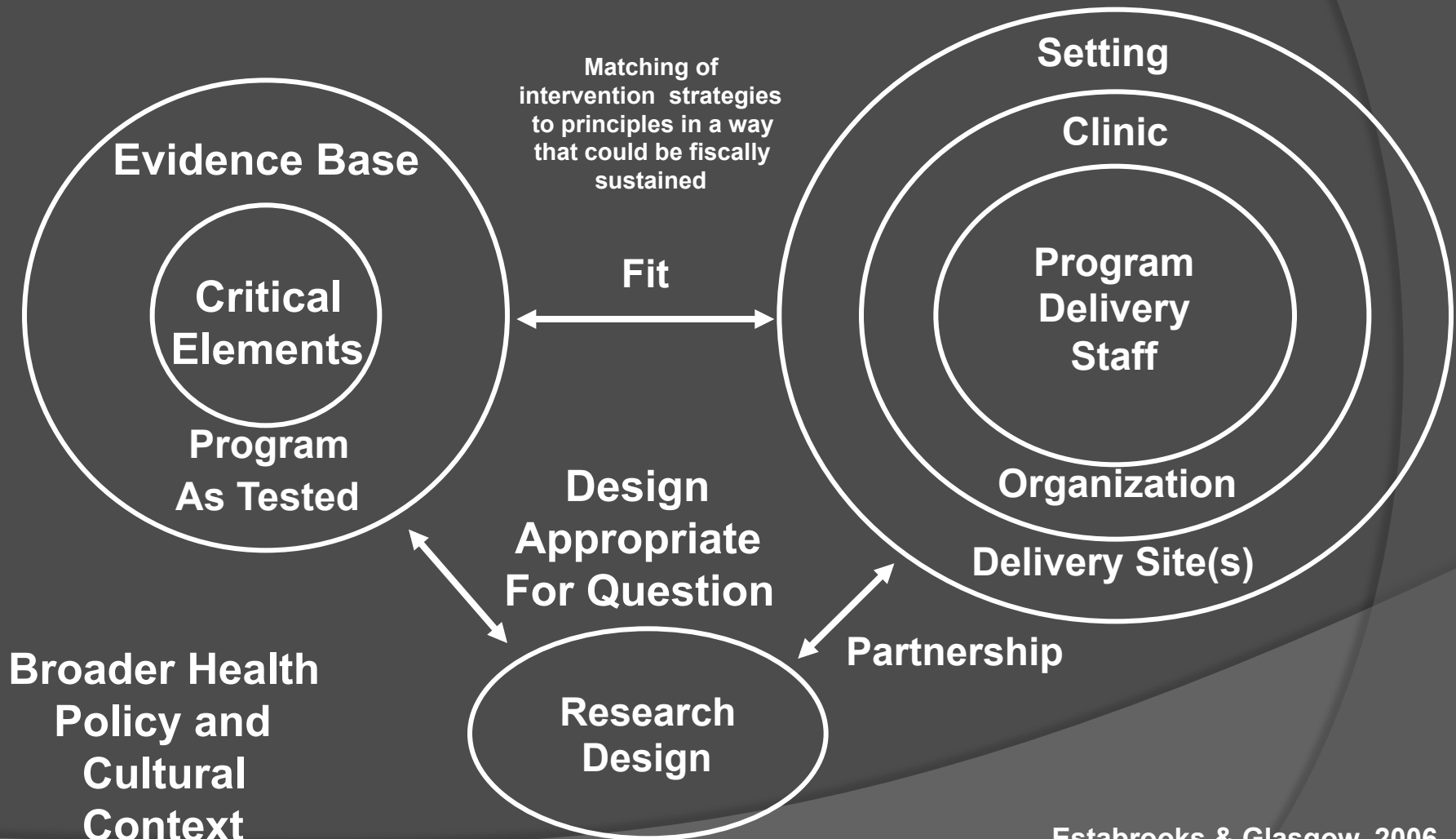
- Those with the highest need are often overlooked in efficacy trials
- Effective interventions often are multi-component and require numerous resources
- How can we design interventions that can easily be disseminated on a larger scale?

Who can we apply the evidence base to?

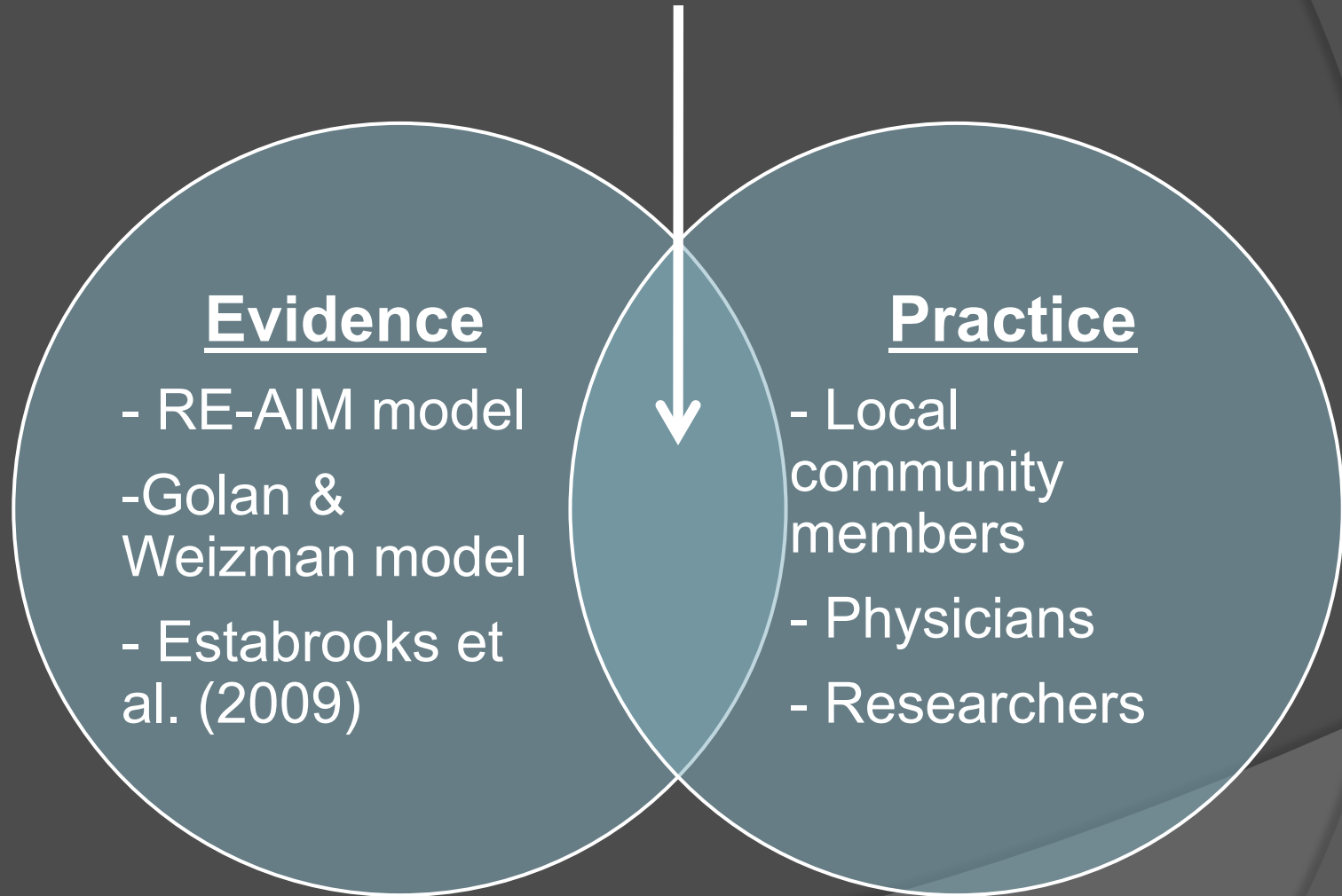
Difficult to replicate across different settings

Integrated Research-Practice Partnerships

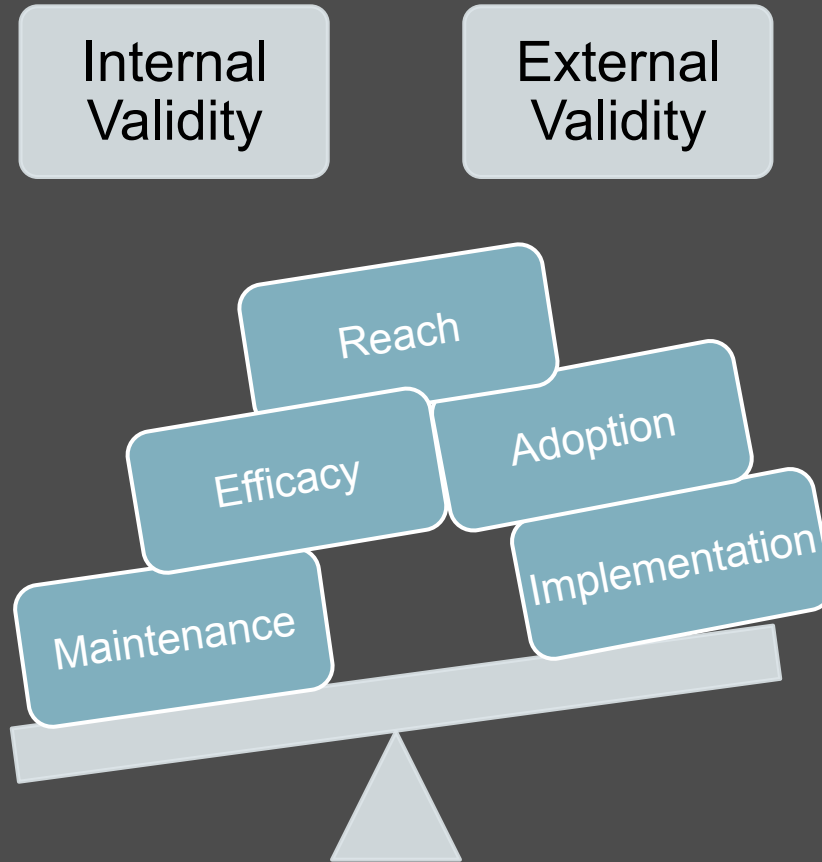
Systems Approach



Smart Choices for Healthy Families



RE-AIM Framework



Glasgow, Vogt & Boles, 1999

RE-AIM: Reach

Absolute number, proportion, and representativeness of individuals who are willing to participate in a given initiative, intervention, or program

RE-AIM: Efficacy

The impact of an intervention on important outcomes, including potential negative effects, quality of life, and economic outcomes

RE-AIM: Adoption

The absolute number, proportion, and representativeness of settings and intervention agents

RE-AIM: Implementation

The intervention agents' consistency in delivery to the various elements of an intervention's protocol, including consistency of delivery as intended and the time and cost of the intervention and the clients' use of the intervention strategies

RE-AIM: Maintenance

The extent to which a program or policy becomes institutionalized (practices and policies), the long-term effects of a program on individual outcomes

Familial Approach to the Treatment of Childhood Obesity: Conceptual Model

Parental Cognitive and Behavioral Change

Environmental Change

Increased Nutrition/Health Skills

Enhancing parental knowledge about nutrition
Purchasing healthy foods by reading food labels
Providing companionship at meal times
Preparing healthy balanced foods and meals
Selecting lower fat, higher fiber foods
Eating slowly
Selecting appropriate serving sizes
Increasing self-efficacy in appropriate parental food intake habits
Exercising regularly

Increased Parenting Skills

Reframing the problem
Reframing parental role and child responsibility
Exercising parental leadership
Exercising parental general skills
Promoting parent-child effective communication
Promoting problem-solving skills
Increasing self-efficacy in parental role of providing a positive family environment for healthy eating

Create Environment in the Family/Home for Healthy Habits

Practicing regular meal times and scheduling between-meal snacks
Allocating individual portions
Providing alternative leisure-time activities
Creating opportunity for physical activities
Reducing stimulus for overeating

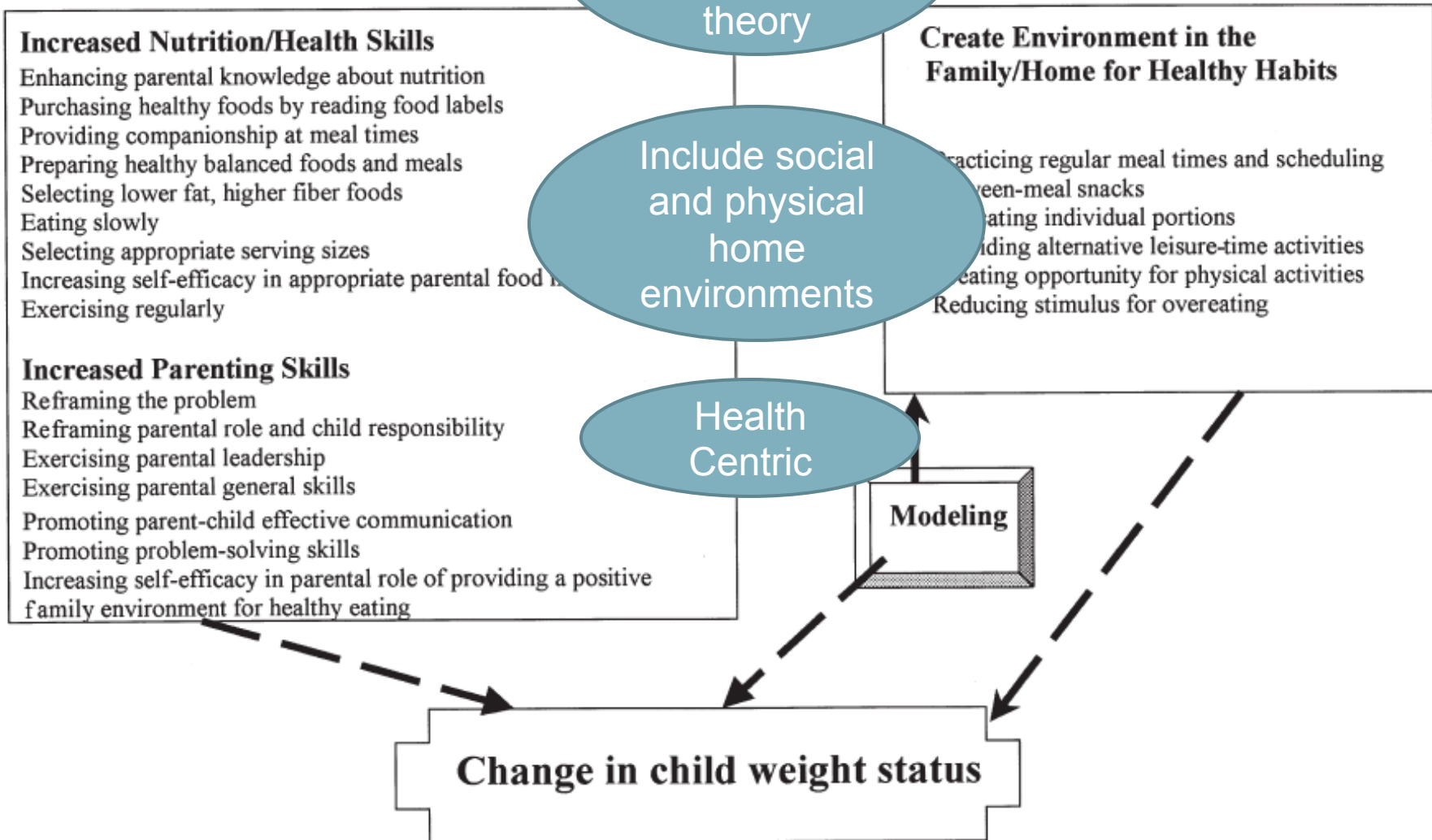
Modeling

Change in child weight status

Familial Approach to the Treatment of Childhood Obesity: Conceptual Model

Parental Cognitive and Behavioral Change

Environmental Change



Family Connections

- Parent-child dyads participated in a practical RCT

- Workbook
- Workbook + group sessions
- Workbook + groups session + IVR calls →

BMI-z scores decreased; parents who completed at least 6 of the 10 IVR calls

- Content of IVR calls promote changes to the home environment, parenting skills, role modeling, and positive parental health behaviors

Combination of automated and in-person components – not all IVR at end

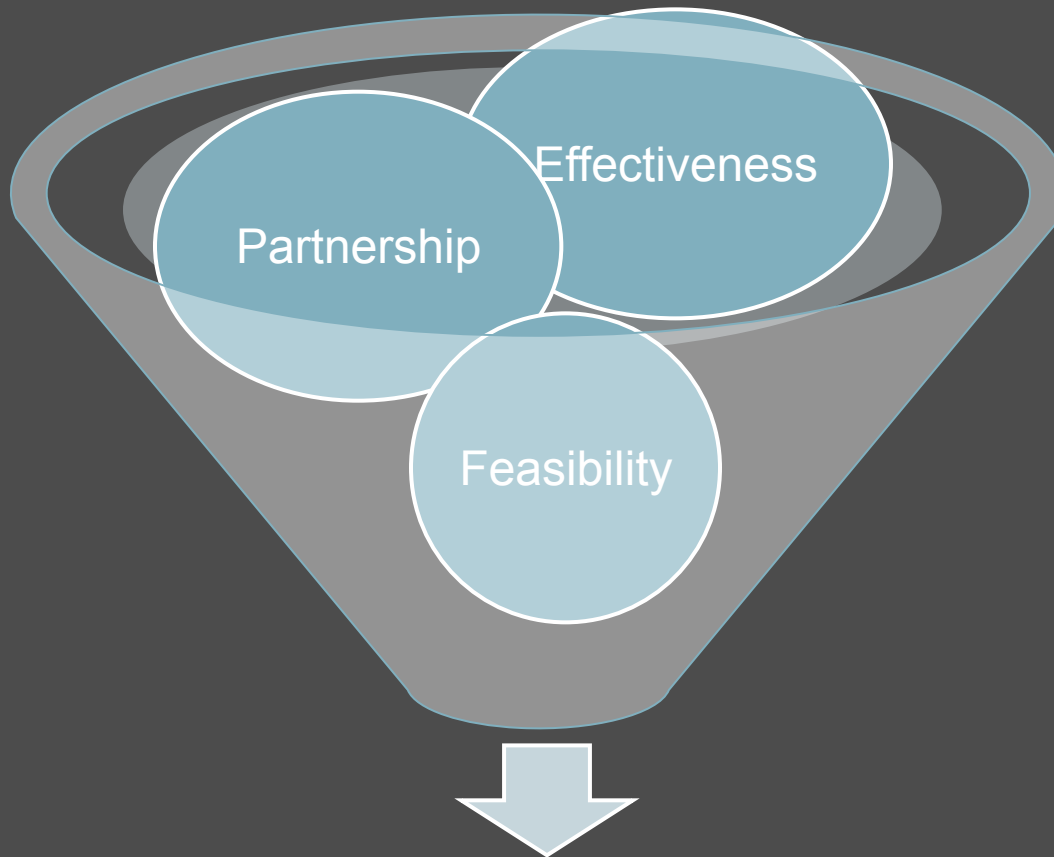
Smart Choices for Healthy Families

Background

- Low-income individuals experience obesity at disproportionate rates
- There is support for family-based interventions, yet little is known about interventions targeting low-income families
- Virginia Cooperative Extension
 - Healthy Weights for Healthy Kids: positive impact on children's nutrition and physical activity behaviors
 - Delivered to children – how can the message be transmitted home?

Smart Choices for Healthy Families

Purpose



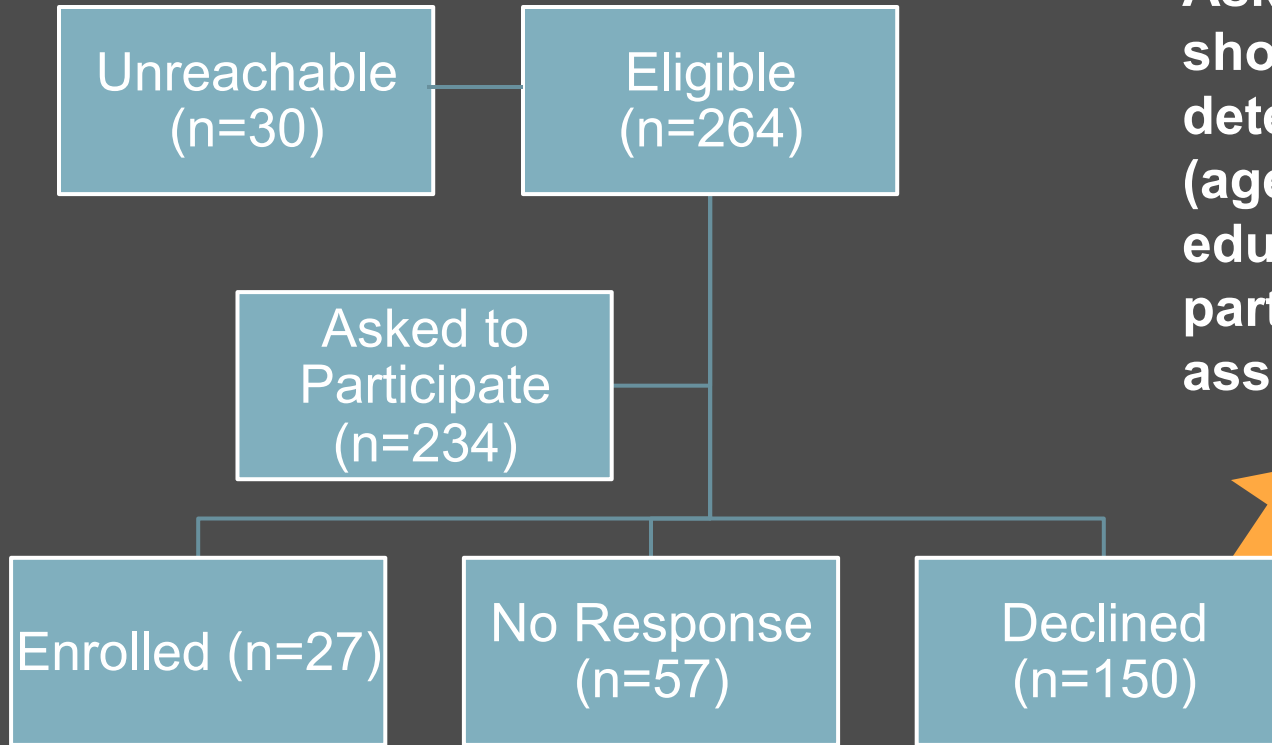
Family-based intervention to treat childhood obesity in a low-income population

Smart Choices for Healthy Families - *Participants*

- Parent-child dyads recruited through physician referral from the Carilion Medical Center in Roanoke, VA
 - Children ages 8-12 years; BMI between 90-99th percentile for age and gender
 - N = 27
- Post-pilot interview participants: maximum variation sampling
 - One physician, two program assistants, five parents, five children (focus group)

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- *Recruitment*



Asked to complete a short questionnaire to determine reach (age, BMI, race, ethnicity, education, income, participation in food assistance programs)

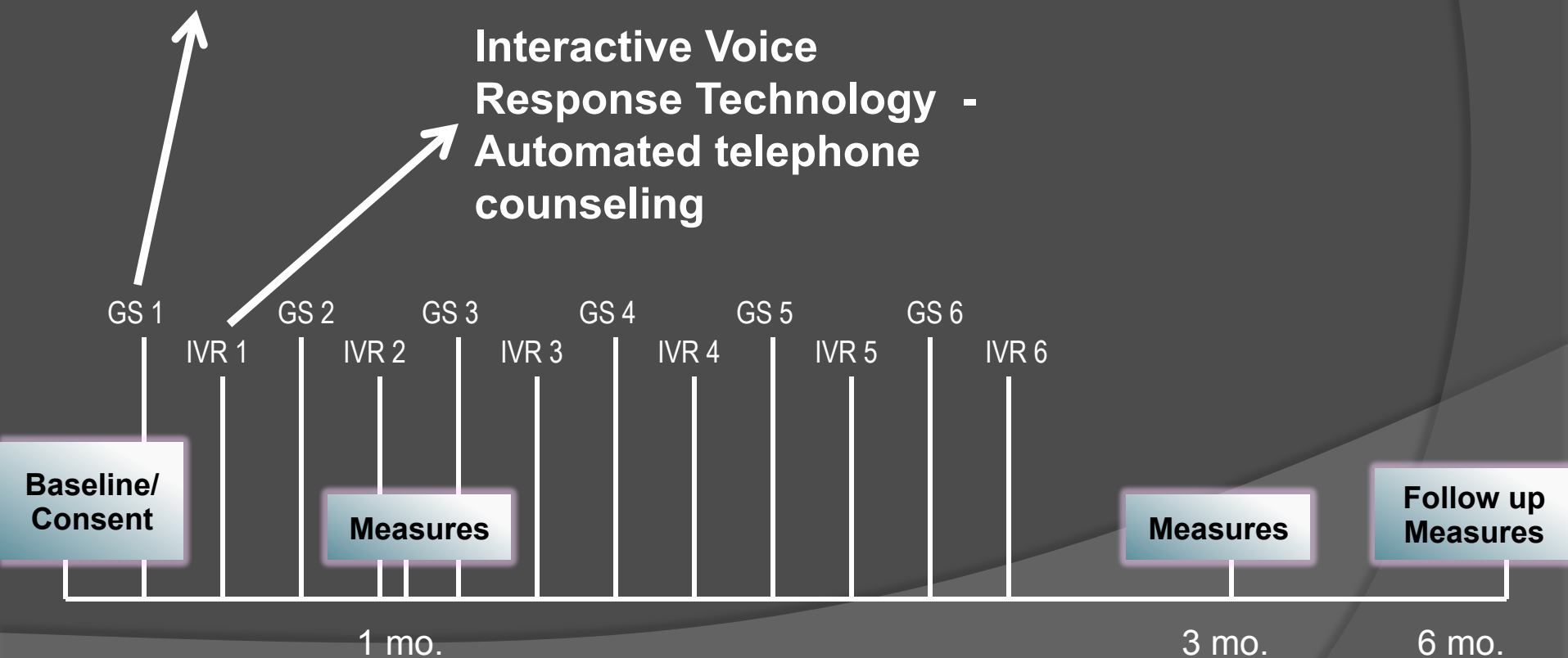


Smart Choices for Healthy Families

-Procedures

**Group Sessions led by
Virginia cooperative
extension program
assistants**

**Interactive Voice
Response Technology -
Automated telephone
counseling**



Smart Choices for Healthy Families

-Procedures

- Group sessions led by VCE program assistants

Children:
Healthy Weights
for Healthy Kids

Parents:
Strategies based
on Golan &
Weizman's Model

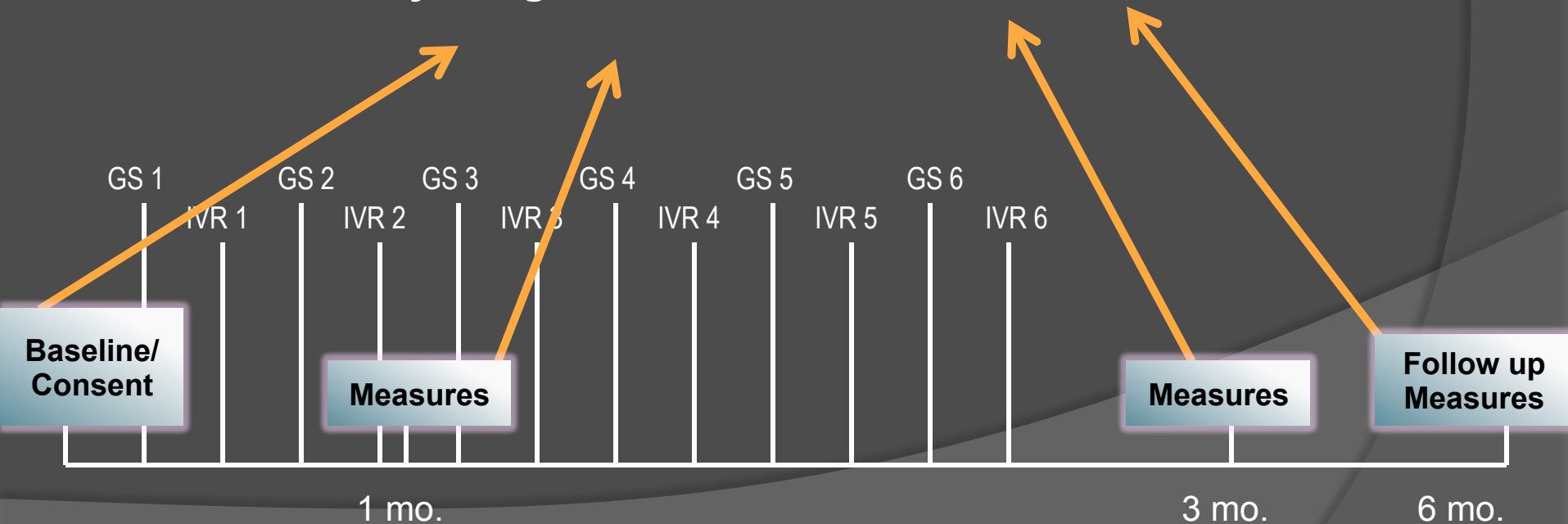
Join up at the end
of class for goal
setting and sample
healthy recipe

1. Basic nutrition, Mypyramid
2. Healthy drinks
3. Physical activity
4. Sensible portions
5. Positive body image/limit TV
6. Media and food/eating smart on the run

Smart Choices for Healthy Families

-Procedures

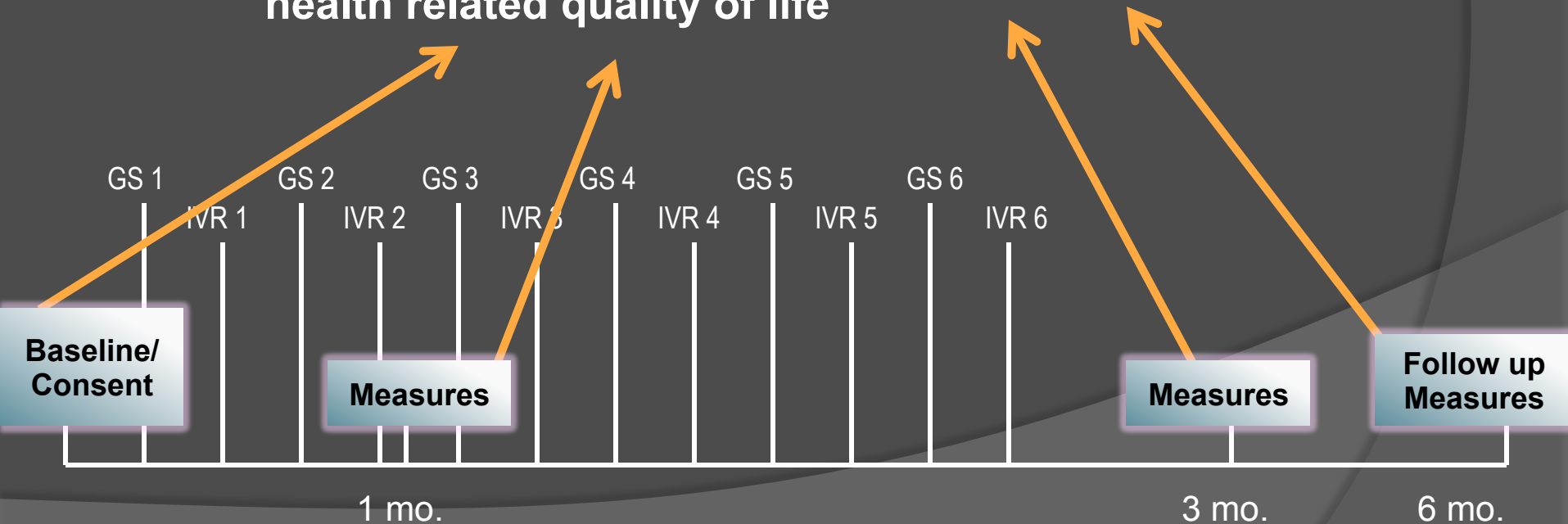
- **Child:** BMI percentile, lean mass, percent body fat, body image



Smart Choices for Healthy Families

-Procedures

- **Child:** BMI percentile, lean mass, percent body fat, body image
- **Child and parent:** weight, BMI, fruit and vegetable consumption, sweetened beverage consumption, screen time, physical activity, health related quality of life



Smart Choices for Healthy Families

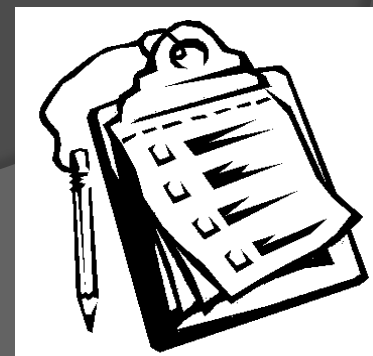
– Procedures

Children

- **Body weight and composition:** Dual x-ray absorptiometry (DEXA)
- **Physical activity; Fruit, Vegetable, & Sugared Drink Consumption; Screen Time:** Short questionnaire, 22-items (Gresock, 2004)
- **Body Image:** Kids Eating Disorder Survey, 14-items (KEDS; Childress et al., 1993)
- **Quality of Life:** Pediatric Health Related Quality of Life, 23-items (Varni et al., 2001)

Parents

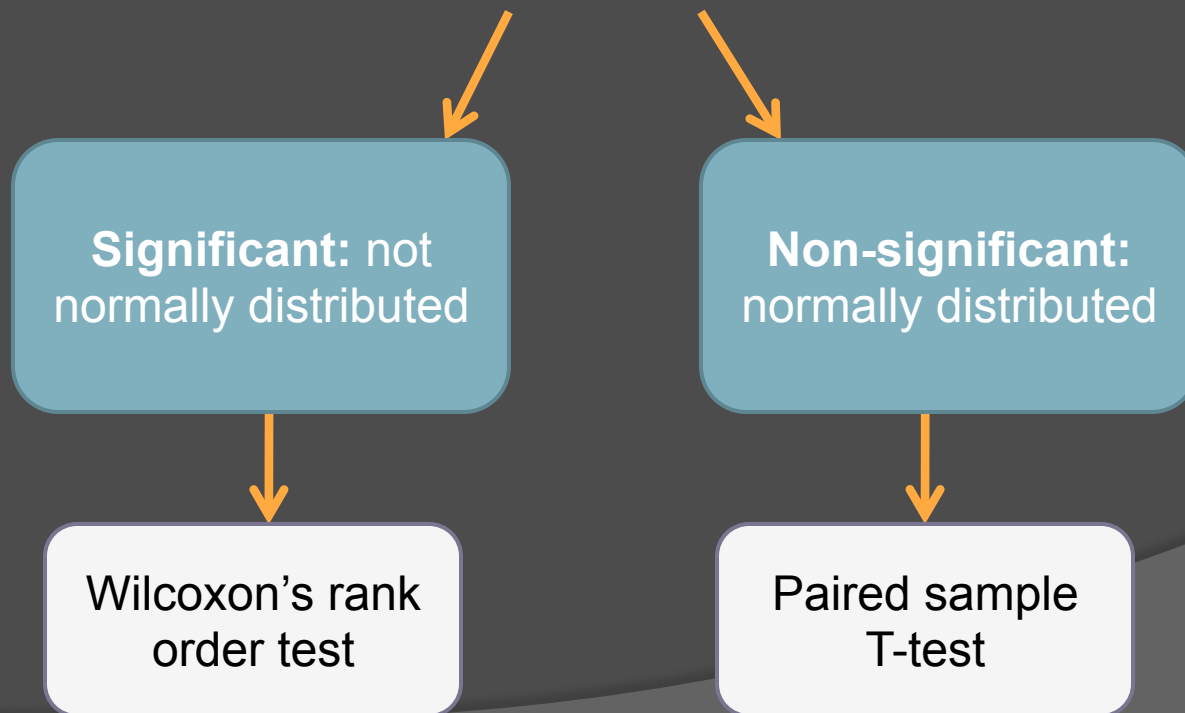
- **Physical activity:** The Rapid Assessment of Physical Activity, 9-items (RAPA; U of Wash)
- **Fruit, Vegetable, & Sugared Drink Consumption; Screen Time:** Short questionnaire, 24-items (Gresock, 2004)
- **Quality of Life:** CDC Healthy Day's measure, 4-items (Barger et al., 2007)



Smart Choices for Healthy Families

– Analysis

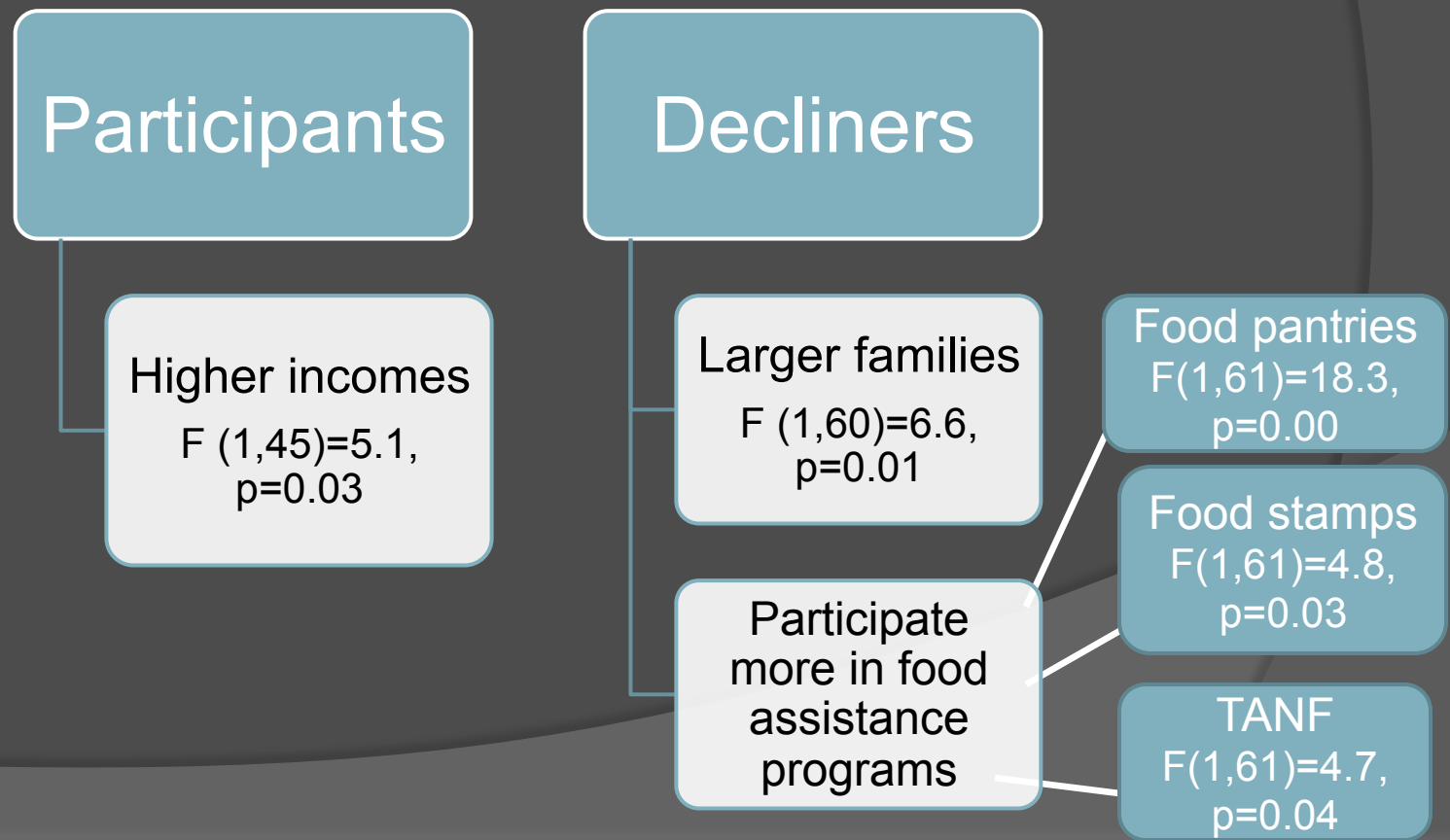
- SPSS
- Representativeness: one-way ANOVAs to determine differences between decliners and participants
- Test for normality: Komolgorov-Smirnov test



Smart Choices: Results

– Reach & Representativeness

- 12% participation rate amongst eligible patients



Smart Choices: Results

- *1-month Follow-Up*

Children

Decrease
BMI-z-score
($t = -4.33, p = 0.000$)

Decrease in
sweetened
beverage
consumption
($T = -2.00, p = 0.046$)

Improved HRQL
($t = -3.95, p = 0.001$)

Parents

Increased
vegetable intake
($T = -2.18, p = 0.029$)

Increased meal
regularity
($t = 11.85, p = 0.000$)

Smart Choices: Results

- 3-months Follow-Up

Children

Decrease in BMI
($t=2.92$, $p=0.01$)

Decrease
BMI-z-score
($t=3.27$, $p=0.000$)

Increase in lean
muscle mass
($t=-4.03$, $p=0.001$)

Improved HRQL
($t=-4.23$, $p=0.001$)

Parents

Decrease
screen time
($T=-2.49$, $p=0.013$)

Increased parental
healthy cooking
($t=-3.89$, $p=0.001$)



Smart Choices: Results

- Interviews

Topic	Details
Physician felt unsuccessful in attempts to address childhood obesity in patients	Lack of time & resources; Ineffective messages for parents and children
Physician and program assistants valued partnership	VCE = educational component; physician = referral
Program assistants found approach of parent-child dyad novel	Message is not transferred to parents or the home; the children taught the parents what they had learned
Main barrier to attendance was transportation	“Sending a bus to come and pick us up. That would make it so much easier to get over there.”
Favorite components of the program were hands on activities and sampling recipes	“They liked the actual fact that they could taste the recipes before trying them, they loved that.”

Smart Choices: Results

– Interviews

Topic	Details
Positive changes in diet	“I started to use those wraps more often and we are trying to increase our vegetables.” “...and we had smaller plates, we don’t eat off these plates (gesture to larger plate size), we eat off like saucers now.”
Positive changes in physical activity	“We are walking a lot more now as a family. And the kids are playing outside instead of watching the TV.”
Main recommendations: more behavior change strategies	“Umm, but as far as actually doing what I learned, I haven’t actually applied what I learned like I should have.”
IVR component was accepted	“It was nice to be reminded and keep us on track.”

Smart Choices for Healthy Families

– *Conclusions*

- ⦿ Feasible model to treat childhood obesity in a low-income population in a clinical setting
 - Support for clinical-community partnership
- ⦿ Effective in improving the health behaviors of the parent and child & reducing BMI of the children

Questions?

