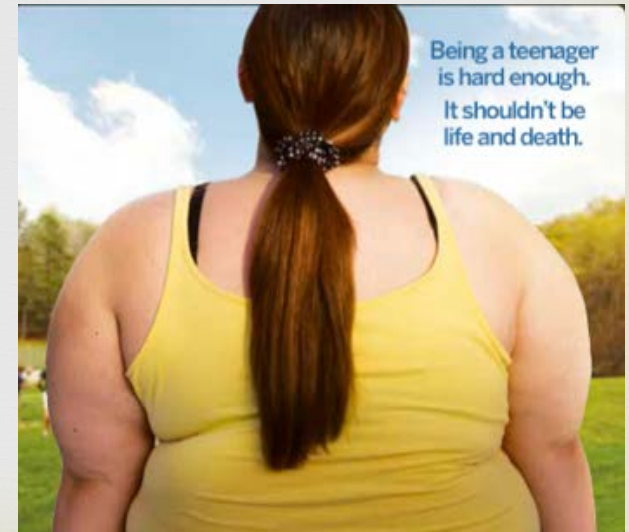


Obesity Interventions for African American Girls: *Does Family Involvement Make a Difference?*

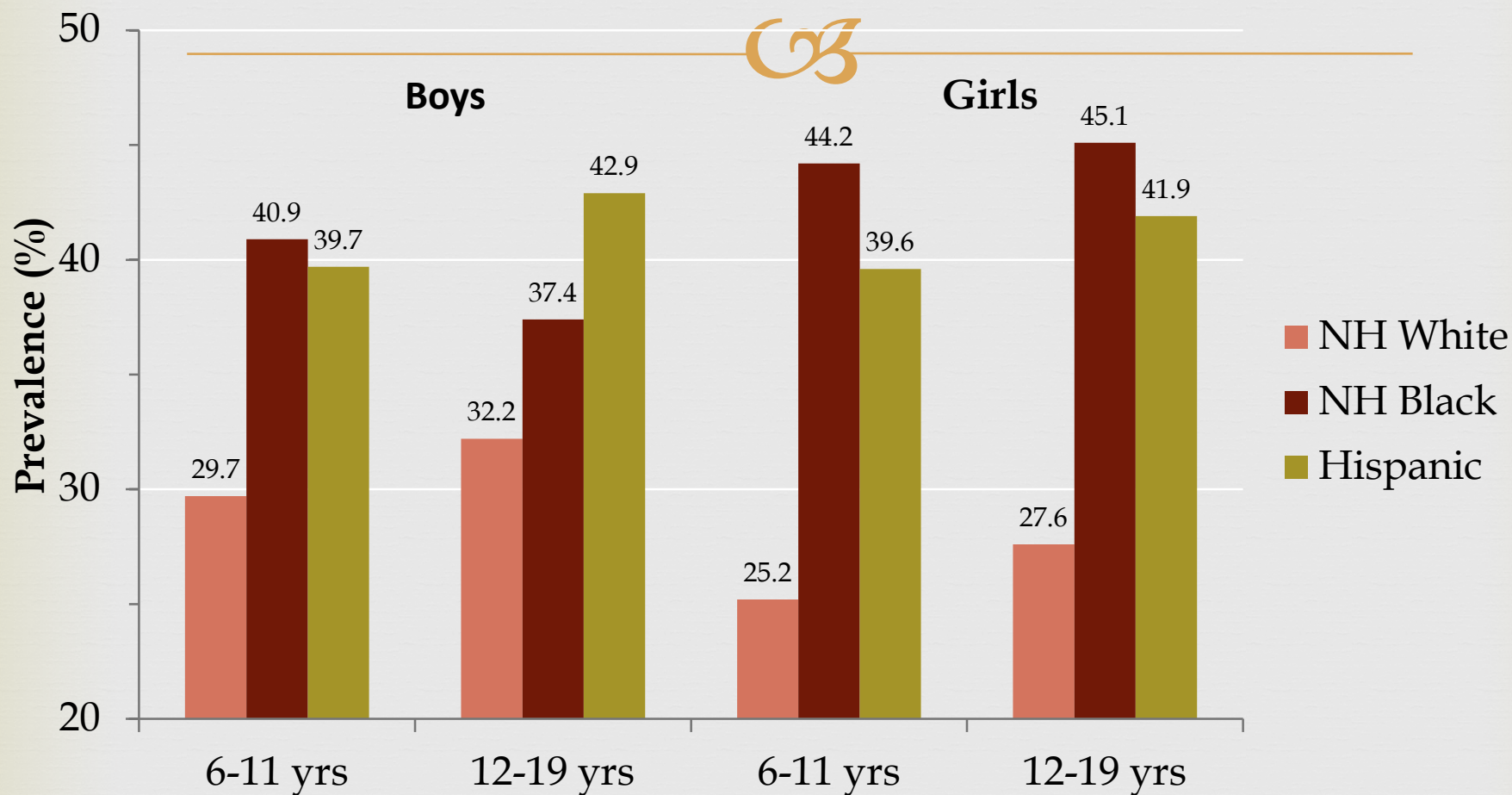


Daheia J. Barr-Anderson, PhD, MSPH
Assistant Professor of Epidemiology

Nutrition Center Seminar
Friday, September 28, 2012



Childhood Overweight, 2009-10



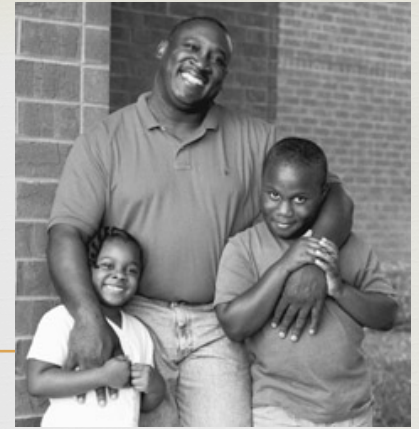
Our Future...



Need for Interventions



- ❧ Disparity in prevalence of obesity, PA, and eating behaviors
- ❧ Lesser effectiveness of weight loss interventions in AfAm vs. white populations – particularly in females
 - ❧ Attributable to...
 - ❧ Cultural tailoring?? Motivation?? Adherence?? Less effective strategies?? Environmental issues??
- ❧ Family-based interventions
 - ❧ Cultural relevance for AfAms
 - ❧ Inclusive of family dynamics and behaviors



What is meant by Family-based or Family Involvement?



Family Involvement



❧ Who is involved?

❧ Family member involvement

❧ What is done?

❧ Goal for the family member

❧ How will they interact?

❧ Session attendance

Family Member Involvement



- Parent-child only

- Multiple family members

 - Parent-child pair plus additional family member(s)

- Whole family involvement

 - 1st and/or 2nd degree relatives in same household

Goal of the Family Member



- ❧ Change in own behavior

- ❧ Support-related

 - ❧ Active or passive support

- ❧ No specific goal

Session Attendance



Full attendance

- Jointly

- Separately

Partial attendance

- Jointly

- Separately

Expected attendance is dependent on involvement and goal of family member(s).



Overview



- ❧ Physical activity and healthy eating program for AfAm girls ages 10-13 and their AfAm mothers
 - ❧ Community- and home-based
- ❧ Duration: 9 months
 - ❧ 2 month Intensive Phase I
 - ❧ 7 month Maintenance Phase II
- ❧ Expected family involvement
 - ❧ Change in both parent & child behaviors
 - ❧ Attend all sessions together



Outcomes



- ❧ Primary target: daughters; Secondary: mothers
- ❧ Physical activity
 - ❧ Increase physical activity
 - ❧ Decrease screen-time (TV, DVD/video, video games, recreational computer use)
- ❧ Healthy eating
 - ❧ Increase F&V, water, breakfast intake
 - ❧ Decrease sweetened beverage intake

Participant Criteria



Daughter

- Self-identified as AfAm
- Age 10-13 years
- $\geq 50^{\text{th}}$ BMI percentile
- No restrictions on physical activity
- No special dietary needs due to health issue(s)

Mother

- Self-identified as African American
- No restrictions on physical activity
- No special dietary needs due to health issue(s)

Physical Activity Component



- ❧ Home PA kits

 - ❧ Hand weights, jump ropes, resistance bands, stability ball

- ❧ AfAm guest instructors

- ❧ Brief PA conversations/activities during cool down

- ❧ Gym memberships

- ❧ Goal setting with incentives



Healthy Eating Component



❧ Interactive, nutrition education sessions

❧ Hands-on cooking demonstrations

❧ Taste testing of snacks and meals

❧ Goal setting with incentives



Social Support Component



- ☞ Face-to-face health coaching with goal setting
- ☞ Motivational interviewing counseling using text, email, and phone
- ☞ Daughter/mother accountability





Intensive Phase 1 Results

Intensive Phase 1 Sample



☞ Daughters (n=13)

- ☞ 11.9 years
- ☞ Mean BMI=30.5±7.86 kg/m²
- ☞ Mean BMI percentile=88.2

☞ Mothers (n=13)

- ☞ 36.2 years
- ☞ Mean BMI=38.3±5.97 kg/m²



Intensive Phase 1 Results



Positive trends among daughters

- Increased PA
- Reduced TV time
- Increased breakfast, water, and FV consumption
- Reduced non-carbonated sweetened drink and regular soda consumption

Positive trends among mothers

- Increased attempts at encouraging daughters to be more active
- Limited daughters' TV time
- Encouraged daughter to eat more fruits/vegetables

Program Activities and Educational Curriculum, Staff & Instructors



- ❧ “My health coach was very motivating and gave me really good advice!”
- ❧ “My mom and I enjoyed making [the different recipes] at home.”
- ❧ “I liked [the different instructors] because I could relate to their size...”
- ❧ “It’s nice to come here and hear about different lifestyles and to know we’re all kind of on the same quest of losing weight or learning to eat breakfast.”

Improved Relationship & Communication



❧ “We do a lot of things together now that we didn’t do before!”

❧ “Even on our drives here and back, it’s just us. The other kids aren’t around and we can talk about the things that are going on and normally we don’t have that time.”

Maintenance Phase II Sample



☞ Daughters (n=5)

☞ BL BMI=26.0 \pm 8.29 kg/m² (74.6th percentile)

☞ FU BMI=28.4 \pm 5.96 kg/m² (88.8th percentile)

☞ Mothers (n=5)

☞ BL BMI=36.2 \pm 5.19 kg/m²

☞ FU BMI=36.5 \pm 5.21kg/m²



Maintenance Phase II Results



Positive trends among daughters

- Increased PA
- Reduced screen time (TV, **computer, & video games**)
- Increased breakfast, water, and FV consumption
- Reducing non-carbonated sweetened drink and regular soda consumption

Positive trends among mothers

- Increased attempts at encouraging daughters to be more active
- Limited daughters' TV time
- Encouraged daughter to eat more fruits/vegetables, **eat breakfast, and drink water instead of pop**

Program Materials & Activities



- ❧ “I loved [the newsletters]...good eating tips for the summer...and fall, and this is what you can do.”
- ❧ “I wish I had [gone to the grocery store] and picked the things that I have at home rather than just looking at items.’
- ❧ “I wished we met more than once a month. I needed the support more often. The health coaching was good, but I needed to see the others so I could stay on track.”



Next Step

Previous F-B Reviews



Interventions that targeted and involved
children, or both

Any degree of family involvement

Children ages 5-18 years

Time of when study conducted or

Barr-Anderson DJ, Adams-Wynn AW, DiSantis KI, Kumanyika S. Family-based obesity interventions in African American girls: a systematic review. Obesity Reviews. In press.

Objectives



- ❧ Examine intervention strategies related to level of family involvement and cultural adaptation
- ❧ Assess the effectiveness of studies with different types and levels of family involvement
- ❧ *Qualitative assessment of patterns related to intervention approaches & effectiveness based on grouping of data*

Inclusion/Exclusion Criteria

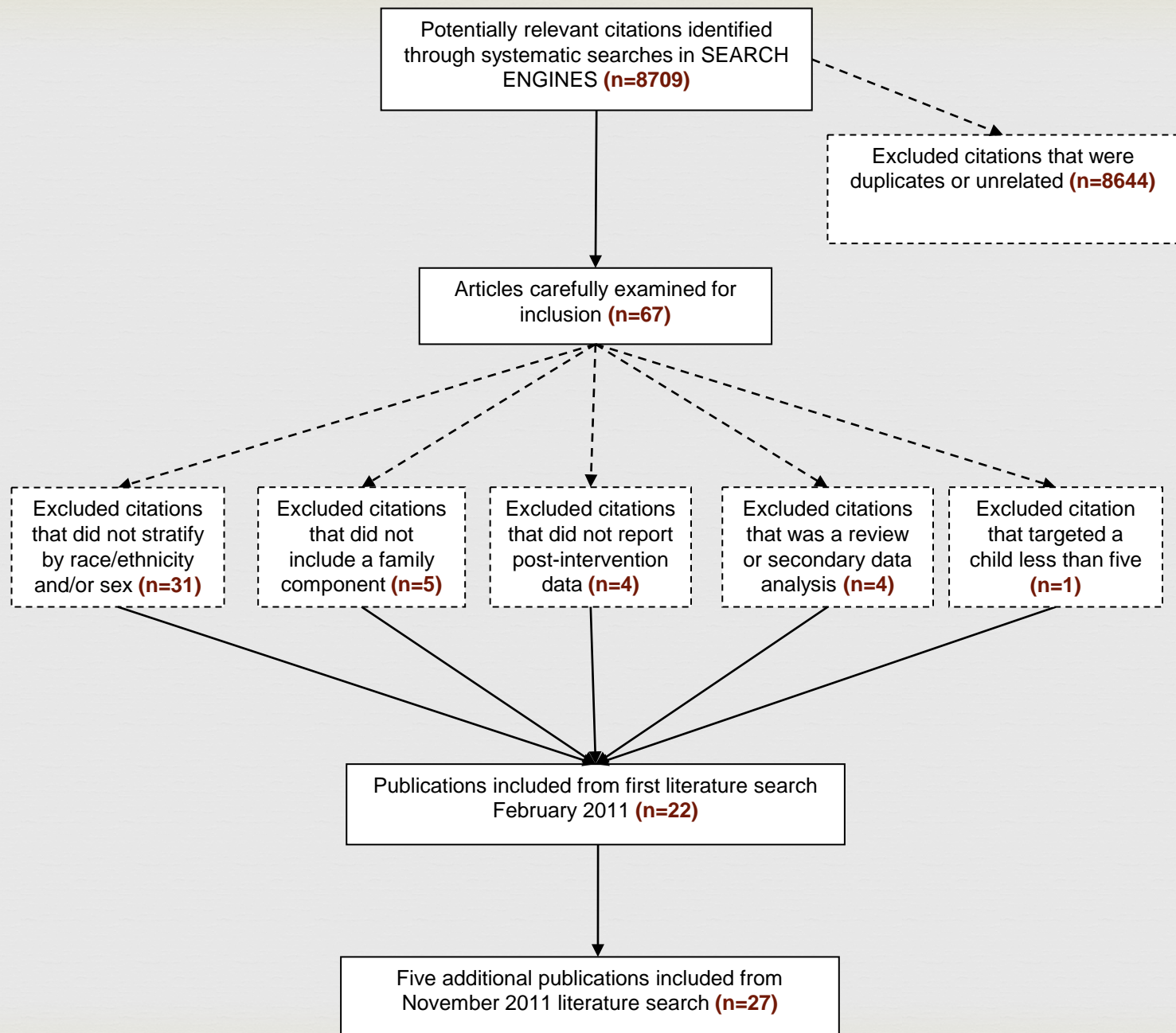


- ❧ Samples that included AfAm girls aged 5-18
- ❧ Some degree of family involvement
- ❧ Intervention studies only
- ❧ Targeted PA, nutrition, or weight
- ❧ Any study design
- ❧ Primary outcome: PA, eating behavior, or weight
- ❧ Description of intervention available
- ❧ US studies only

No Restrictions On...



- ∞ Length of study
- ∞ Year of intervention
- ∞ Weight of participants



Study Characteristics



- ∞ Duration: 3 weeks to 2 years
- ∞ 15 pilot studies → led to 4 RCTs
- ∞ 1 short-term (12 weeks but not pilot)
- ∞ 12 full-length, non-pilot studies
- ∞ Design
 - ∞ 17 RCTs
 - ∞ 8 uncontrolled trials
 - ∞ 2 non-randomized trials
 - ∞ 1 randomized trial with 3 active interventions

Study Populations



- ∞ AfAm girls only (n=15)
- ∞ AfAm girls and boys (n=6)
- ∞ Multi-ethnic girls and boys (n=5)
- ∞ Multi-ethnic girls only (n=1)

Prevention vs. Treatment Studies



- ❧ 18 prevention, 9 treatment studies
- ❧ Differences in study participants (weight), goals, and participant motivations
- ❧ Expect similar behavioral changes, but perhaps not weight changes
- ❧ Weight data not presented for:
 - ❧ Short-term or pilot prevention studies
 - ❧ Uncontrolled studies



Cultural Adaptation Strategies



- ❧ None mentioned (n=3)
- ❧ Limited adaptation (n=4)
 - ❧ AfAm only sample
- ❧ Specific attempts to tailor (n=20)
 - ❧ Formative assessment with AfAm
 - ❧ Tailored curriculum and program content
 - ❧ Culturally relevant PA/foods; infusion of AfAm culture; culturally specific health information
 - ❧ AfAm interventionists/data collectors

Results: No or Limited Cult Adapt

Author Year	Study Design	MQ	Physical Activity	Dietary Behavior	Weight-related
Frenn 2003	Prevention NRCT	2	~MVPA: +*	%fat: +	Not reported
Greening 2011	Prevention RCT	5	~# of activities: +*	Dietary habits: +*	%BF: +*
Janicke 2011	Treatment Pilot RCT	5	Not reported	Not reported	BMI-z: +
Cotton 2006	Prevention Pilot UCT	3	Not reported	Not reported	Not applicable [#]
Barbeau 2007	Prevention RCT	6	~MPA: +* ~VPA: + ~MVPA: +* ^Fitness: +*	Not reported	BMI: +* Waist circ: + %BF: +*
Newton 2010	Prevention Pilot UCT	1	~MVPA: +*	%fat: +* %satfat: +* %carb: +* %protein: +	Not applicable [#]
McDonnell 2011	Prevention Pilot RCT	6	~MET: +*	Fast food: +* Soft drink: + Fruit: + Veggie: +	BMI: -

* indicates a statistically significant difference at a level of $P < 0.05$.

^ indicates an objective measure of PA (e.g., accelerometer, pedometer).

~ indicates a subjective measure of PA (e.g., self-report questionnaire).

Weight data not synthesized for short-term or pilot prevention studies or uncontrolled studies

Family Involvement Results:

LOTS OF VARIANCE



- ❧ Family member involvement
 - ❧ Parent-child only
 - ❧ Multiple family members
 - ❧ Whole family
- ❧ Index member (i.e., targeted participant) of the intervention
- ❧ Format of intervention delivery
 - ❧ Distant
 - ❧ Face-to-face
 - ❧ Other delivery
- ❧ Expected joint attendance by index and family member
 - ❧ Single/partial/all sessions attended jointly/separately
- ❧ Goal for the family member
 - ❧ No specific goal
 - ❧ Support-related goal
 - ❧ Change in own behavior goal
- ❧ Behavior targeted for change
 - ❧ PA or eating

Family Involvement Patterns



❧ Whole family involvement

- ❧ Prevention studies only
- ❧ Targeted younger (8-10 yrs) children
- ❧ Attendance of whole family to some sessions

❧ Multiple family member involvement

- ❧ Prevention studies
 - ❧ Support-related goals for family members
 - ❧ Child attendance emphasized
- ❧ Treatment studies: No clear pattern

Family Involvement Patterns: Parent-child dyad



❧ Prevention studies (n=12)

- ❧ Change in parent behavior (n=4)
 - ❧ Targeted younger children
 - ❧ Parent attend all sessions, but child attendance varied
- ❧ Support-related goal (n=7)
 - ❧ Some sessions jointly or all sessions child alone
- ❧ No specified goal for parent (n=1)

❧ Treatment studies (n=5)

- ❧ Change in parent behavior (n=2)
 - ❧ All sessions attended separately then jointly
 - ❧ Face-to-face delivery
- ❧ No similarities with other 3 studies

Prevention Studies Results



❧ Most studies measured PA & diet using multiple measures

❧ PA (n=14)

❧ Positive findings (n=14)

❧ Null findings (n=4)

❧ Diet (n=15)

❧ Positive findings (n=15)

❧ Null findings (n=8)

❧ Mixed weight outcome results (n=6)

❧ Positive findings (n=4)

Treatment Studies Results



∞ PA (n=5)

- ∞ Positive findings (n=3)

- ∞ Null findings (n=2)

∞ Diet (n=2)

- ∞ Positive findings (n=1)

- ∞ Negative findings (n=1): psychosocial factors

∞ Generally positive weight outcome results (n=6)

- ∞ Positive findings (n=4)

Discussion



- ❧ Diverse patterns of family involvement
 - ❧ No incorporation of AfAm family systems theory
- ❧ Most were at least minimally culturally adapted
- ❧ Limited comparison of type of family involvement (whole vs partial vs parent-child)

Discussion/Future Research



- ❧ Generally positive trends (some significant) in behaviors, especially PA
- ❧ Overweight children reported more favorable results when parents also changed behavior
- ❧ Attending sessions jointly may be beneficial

PA-11-104: Reducing Health Disparities Among Minority and Underserved Children

- ❧ Examine influence of social and physical environmental change on PA in obese AfAM girls
 - ❧ Social: family member involvement
 - ❧ Physical: Changes to home physical environment
- ❧ Control: Ed sessions (girls only)
- ❧ Arm 1: Ed sessions + Δ in physical env (girls only)
- ❧ Arm 2: Ed sessions + Δ in social env (girls + entire family)
- ❧ Arm 3: Ed sessions + Δ in social & physical env (girls + entire family)



Thank You!

Any
Questions?

