Title: Helping Federal Programs Combat Childhood Obesity with New Valid Evaluation Tools & Education Materials

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Our partners
Seta Head Start; WIC Sacramento; EFNEP
Learning Objectives for Today

• Discuss the purpose and audience of each evaluation tool presented.
• Describe two ways the evaluation tools were tailored for low-literate, low-income audiences.
• Identify three methods used to validate the evaluation tools.
• Describe how the evaluation tools can be tailored to different cultural groups.
• List two intervention strategies developed that will work with federal program participants.
Goals for this Healthy Kids Research

Develop and validate tools

• obesity risk
• low respondent burden
• low-income, limited literacy clients
• readability at grade 2-3rd
• for WIC, EFNEP, SNAP-Ed, Head Start
Poll question #1

• Where is your place of employment?
Poll question #2

What kind of program do you deliver?

• EFNEP
• SNAP-Ed
• WIC
• Head Start
• Other
Literature review identified 12 *determinants* & 23 behaviors related to pediatric obesity

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Evidence analysis literature reviews

- Literature: Validated questionnaires
- Cognitive interviews
  - Head Start, WIC parents
Tailored to Needs of Low-literate Clients

- Cognitive testing interviews (n=77)
- Initial: How often do you buy vegetables for your child?
  9 words, 13 syllables, interrogative format.

- Final: ‘I buy vegetables’ with 2-part visual

3 words, 6 syllables, declarative format.
Tailored to Needs of Low-literate Clients

- Readability index…Grade 2
- Respondent burden….10-12 min, limited literacy 25 min.
- Captured 23 behaviors and parenting style
- Content & face validity established.

Next phase of validation: Methods

• Longitudinal study design with 4 phases over 2 years
• Target Audience (n=144)
  – Parent/child pairs from WIC & Head Start
  – Ethnically Diverse
• Data collected
  – Food, PA, Sleep, Activity and Screen Time Logs x 9
  – Surveys x 4
  – Anthropometrics x 4
  – Mealtime videos
  – Blood draw x 3
    • Biomarkers
Biomarkers – Why?
Multiple approaches to validation are valuable

HEALTHY KIDS

BIOMARKERS

OBESITY

Disease risk

prediction

assessment

Anthropometric x4
Dietary Intake X9
PA, sleep behaviors

Health status
Nutritional status
## Biomarkers-Literature Review

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<th>Pro-Inflammatory</th>
<th>Anti-Inflammatory</th>
<th>Metabolic</th>
<th>Lipid</th>
<th>Carotenes</th>
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<td>Liver</td>
<td>Pancreas</td>
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<td>Adiponectin</td>
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**Adult Studies**
Purpose of validation studies

• Take a simple tool and find out its worth.
• Use complex methods to find out its worth.
• Then going forward use the simple tool instead of the complex methods.
Results:
Childhood Obesity Risk Assessment Tools

#1 Focuses on eating, physical activity, screen time & sleep - 45 items

Validity established:
- content
- face
- predictive
- criterion
- convergent
Results: 45 to 14 items

- Child eating fruit
- Child drinking milk
- Child type of milk
- Parent buying vegetables
- Child TV
- Child healthy snacks
- Child vegetables main meal
- Child sweets, X/day
- Child soda, days/wk.
- Child sports drinks or sugared drinks, X/day
- Child chips
- Parent food prep
- Parent buying fruits
- Child video games
Validation results

• Children with healthier Healthy Kids [HK] behaviors are less likely to be overweight 2 years later.
• Children with healthier HK behaviors have more favorable vitamin & mineral intakes.
• Children with healthier HK behaviors have higher levels of carotenoids and anti-inflammatory biomarkers in their blood samples.
Results:
Childhood Obesity Risk Assessment Tools

#2 Focuses on child feeding practices - 27 items

Validity established:
- content
- face
- factor
- criterion
- predictive
Results:
Childhood Obesity Risk Assessment Tools

- Mimics CFSQ (Hughes et al., 2005) with 3 additional items for family structure/routines
- 2 factor structure (consistent with CFSQ typological measurement)
  - Child Centered Behaviors (includes structure/routine items) (α = .79)
  - Parent Centered Behaviors (α = .83)
  - Used to create 2 dimensions
    - Responsiveness & Demand ingness

New MCMT results

- Factor scores correlated to observed mealtime behaviors of parents
  - Child Centered scores associated with adult at table and warmth
  - Parent Centered scores associated with parent centered behaviors (e.g. physical manipulation of child, bargaining)

- Responsiveness associated with BMI 2-years later
  - Responsive feeding initially associated with higher BMI across preschool years but with lower BMI in early childhood (age 6)
Tailor Tools to Reflect Program Participants

- The tool photos were taken with clients’ permission in their homes and using their children as models.
- Real program families, real settings!
- All tool photos represent the multiple races and settings typical to the target audience.
Tailor Tools to Reflect Program Participants

• The Photobank gives you up to 4 additional photos for each HK & MCMT question
  – Asian
  – Black
  – White
  – Hispanic/Latino ethnicity
Tailor HK & MCMT Tools to Reflect Program Participants

Question:

My child eats fruit.

- rarely
- some days
- most days
- almost every day
- every day

Up to 4 photo options
Three Bonus Tools
Focus on Veggies

My child eats vegetables.
- rarely
- some days
- most days
- almost every day
- every day

I buy vegetables.
- rarely
- sometimes
- often
- very often
- always

My child eats snack foods like apples, bananas or carrots.
- rarely
- some days
- most days
- almost every day
- every day

My child sees me eat vegetables.
- rarely
- some days
- most days
- almost every day
- every day

My child eats more than one kind of vegetable a day.
- rarely
- some days
- most days
- almost every day
- every day

My child is picky about the foods he eats.
- rarely
- some days
- most days
- almost every day
- every day

My child eats ______ vegetables at his main meal.
- 0
- 1
- 2
- 3 or more

I keep vegetables ready for my child to eat.
- rarely
- some days
- most days
- almost every day
- every day

http://HealthyKids.ucdavis.edu
Figure 1 Conceptual framework for validation of Focus on Veggies for a primary prevention intervention for increasing vegetable consumption targeting preschool children.\textsuperscript{a}

\textsuperscript{a} UC Fruit & Vegetable Inventory; \textsuperscript{b} UC Food Behavior Checklist
Validation results

- Children with healthier vegetable behaviors reported eating more vegetables measured by cup equivalents.
- Children with healthier vegetable behaviors had higher intakes of vegetable micronutrients: Vitamins A and C, folate, potassium, magnesium and fiber.
- Children with healthier vegetable behaviors were less likely to be overweight 2 years later.
- Children with healthier vegetable behaviors had higher levels of vit A/carotenoids in their blood.
Focus on Sweet Drinks

3 items
Readability Index
Grade 1-2
Validation results

- Children with healthier SSB behaviors have lower dietary sugar intakes [grams]
- Children with healthier SSB behaviors have more favorable vitamin & mineral intakes based on 3 diet recalls.
- Children with healthier SSB behaviors have more favorable scores on anti-inflammatory biomarkers in their blood samples.
Focus on Fats & Sweets

12 items
Readability Index
Grade 1
Validation results

- Tool was related to child dietary energy density calculated from three 24-hr recalls. Healthier score, lower ED.

- Tool was related to grams of fat in child dinners. Healthier score, lower fat.
How Could You Use These Tools?

• As a needs assessment; educator scores

• Assessment of risk; participant scores

• Pre/post evaluation for a nutrition intervention; educator scores

• To generate participant guided goals to be used with an existing intervention; educator scores
Goals are Individualized to Parent Responses
Intervention with Guided Goals

- Parents reported a high level of goal effort and goal achievement.
- Parents reported preference for goal personalization & goal options.
- Parents showed significant improvement the HK's energy density and sugar sweetened beverage scales, FBC milk scale and FVI.

Healthy Kids Website

PARENTS

Want to keep your child healthy?

Take the survey and have goals created just for you and your child!

Click a survey to begin

Educators

Are you using these surveys with your classes? Healthy Kids or My Child at Meal Time?

Begin here to quickly enter completed surveys for an entire class. Create personal goal sheets for each participant.

Directors

Want to use these surveys with your program? Register and open an account to have access to these tools.

Download the current Healthy Kids or My Child at Meal Time surveys or create photo-customized versions tailored to your target audience.

New User? Create an account here.
Parents

- Select a tool
- Answer questions
- Print individualized goal sheets
Educator

- Enter participant data easily
- Print multiple goal sheets at once

**YOUR NUTRITION Quiz Results**

Thank you for taking the time to complete the Healthy Kids quiz. We hope this feedback will help you and your family make healthy lifestyle choices.

Good job! You are serving dairy and calcium foods at your family's meals.

**Check one major goal. Then choose one of the minor goals.**

**Major Goal:** You may want to choose foods low in fat. 3 ways to do this would be:

- Trim fat from meat or remove skin from chicken 3 times this week.
- Instead of whole milk, serve reduced-fat or fat-free milk at your main meal 3 times this week.
- Instead of eating out this week, plan a meal where your family is involved in the preparation.

**Minor Goals:**
- Keep your child's screen time to 1-2 hours, 3 days this week.
- Remove TV/video games from your child's room this week.

3. **Major Goal:** Your child goes to bed around ___ pm.

4. **Major Goal:** Your child goes to bed around ___ am.

5. **Major Goal:** Your child plays outside ___ days a week.

- Bypass Question
- Bypass Question
- Bypass Question
Director

- Customize HK & MCMT tools

- Access tools, guides and workbook

**Director Dashboard**

*Healthy Kids and My Child at Meal Time* are two researched based obesity risk rapid self-assessment tools designed for low-income and low-literate ethnically diverse parents of preschool age children. You can download PDF formatted files of these tools for use with your program participants. Alternatively, you may tailor the tools' photographs to better represent your program’s target population.

**Supplemental Materials**

If you would like to use the original version of the *Healthy Kids or My Child at Meal Time* surveys, download them here. Additional supplemental materials are provided as well such as instruction guides.
For more information on how to use the Healthy Kids website

- SNEB webinar
  - recorded March 31, 2014
  - Title: *Obesity Risk Assessment for Preschoolers: Tailor to your needs*
  - [http://www.sneb.org/events/webinars.html](http://www.sneb.org/events/webinars.html)
Poll question #3

Do you see potential uses of these tools for your program? Select as many as apply.

• Use as a survey to assess need.
• Use to assess risk.
• Use to capture change following an intervention [pretest, post test].
• Tailor tool to program’s cultural group.
• Use as a goal generator for participants in your program.
My Healthy Plate

- Reviewed EFENP client recalls (n=165)
- Food combinations & messages were tested (n=227)
MHP Materials

My Healthy Plate

Educator Materials

- Posters
- Lessons
- Meal Cards

Participant Materials

- Placemats
- Handouts
- Goal Sheets
Most parents (89%) reported that MHP made it easier to know what healthy meals look like.

Parents reported that the MHP visuals/photos gave them ideas of what to serve:

“Before with pizza, I just gave pizza as a meal, but now I put other things with it like fruit or carrots. I got the idea from the pictures in class”

Next Steps

• Scoring/Scales
• Selection of “responsive” biomarkers
• New USDA AFRI Grant 2015-68001-23280
  – Validation of HK & MCMT w/ Spanish speakers
  – EFNEP intervention with GGS in medical clinic setting
How to order?

- [http://Townsendlab.UCDavis.edu](http://Townsendlab.UCDavis.edu)
- [http://HealthyKids.UCDavis.edu](http://HealthyKids.UCDavis.edu)

UC Davis Reprographics
- Reprographics Store - Coming Soon
Healthy Kids References


Thank you!


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