Engaging fathers of preschool age children in the prevention of childhood obesity

Amy R. Mobley, PhD, RD
Health Education and Behavior

Obesity prevention in preschool children

What about fathers?

Surprising Findings....

Overweight or Obese Dad + Normal Weight Mom = Child 4.18-14.88x more likely to be obese

Normal Weight Dad + Overweight or Obese Mom = Not Significant Predictor of Child Weight


Freeman et al., Int J Obesity, 2012, 36: 12-15
How involved are fathers?

- Almost 75% residential fathers fed or ate meals with their child under age 5 on a daily basis.
- Approximately 30% of fathers report:
  - being responsible for child feeding half the time
  - have primary or shared responsibility for shopping and meal prep.
- Fathers have been underrepresented in obesity prevention and treatment research
  - Prior few studies targeted fathers of school age children

DHHS, 2013; Blissett et al., 2006; Snethen et al., 2007; Davison et al. 2016 & 2018

‘Healthy Dads, Healthy Kids’ - Australia

- Program intervention for overweight fathers
  - Included children ages 5-12 years old
- Significant weight loss for intervention fathers vs. control fathers
  - Increased physical activity
- Children of intervention fathers
  - Reduced energy intake
  - Increased physical activity

Morgan et al., Int J Obesity. 2011; 35: 436-447

FORMATIVE AND FEASIBILITY RESEARCH
Project Aim

Phase 1: To determine whether an association exists between fathers’ and preschool age children’s body mass index (BMI), diet quality, and physical activity duration and intensity level.

Methods

- One-on-one interviews with biological fathers (n=15) of preschool children (60 minutes)
  - 24 hour dietary recall using AMPM; HEI score
  - Pre-Physical Activity Questionnaire (Pre-PAQ)
- Demographic data
- Height and weight measured
  - Body Mass Index (BMI) calculated for father
  - BMI z-score calculated for child

Phase 1: Summary

- Father BMI significant, positive predictor for child BMI z-score.
- Significant, positive relationship between father-child weekday and weekend vigorous physical activity.
- Father diet quality significant, positive predictor for child diet quality.
Phase 2 & 3: Project Aims

1) Conduct focus groups with low-income fathers to determine the perceived key barriers and resources needed to improve nutrition and physical activity habits of their children ages 3-5 years old;

2) Develop and pilot test a father-focused “Dad and Me” childhood obesity prevention program to improve nutrition and physical activity related knowledge; skills; self-efficacy; and behavioral intentions of fathers and their young children.

Methods – Focus Groups

- Low-income fathers (n=35) with at least one child (eligible for Head Start) between the ages of 3-5 years were recruited from Connecticut for a focus group (n=8)

- A trained male facilitator conducted the focus groups lasting 60 minutes.
  - Focus group questions grounded in the Social Cognitive Theory constructs related to father’s nutrition and physical activity habits for themselves and their children.
  - Programmatic questions were also included to ascertain program interest and related logistics.

Table. Thematic Analysis Quotes from Focus Groups with Low-Income Fathers of Preschool Children

<table>
<thead>
<tr>
<th>Focus Group Question</th>
<th>Sample Quotes from Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you prepare for your family? (Self efficacy)</td>
<td>“I want to learn. So, it’s like I don’t know another way to make the food. There are ways to make it that would be healthier, you know? But it is like, never thought of that way. So it’s like that is healthy for you.”</td>
</tr>
<tr>
<td>What barriers or barriers are the most difficult to get your child to eat fruits and vegetables? (Behavioral control)</td>
<td>“My son won’t drink water. He just drinks juice all day and all of that stuff.” “Walk they don’t want to drink water. Um, and then the young one they have like smoothies.”</td>
</tr>
<tr>
<td>The best advice you give from airplane ride. They always give you advice if any emergency you have to take care of yourself first before you will be able to take care of the kids, so, yeah. Yeah, I do some exercise. I am a little bit light now. But you know, I do some exercise.”</td>
<td>“Walk they don’t want to drink water. Um, and then the young one they have like smoothies.”</td>
</tr>
</tbody>
</table>

Results - Summary

- Key response themes indicated a need to improve:
  1) self efficacy as it relates to cooking and increasing physical activity for their child,
  2) behavioral capability in increasing their child’s vegetable and water consumption, and
  3) problem solving as it relates to mealtime challenges and feeding practices.

“Dad and Me” Feasibility Program (n=5)

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Interactive Discussion/Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>Program introduction</td>
<td>Parenting &amp; feeding obstacles; father/child lunch</td>
</tr>
<tr>
<td>Session 2</td>
<td>Mealtime</td>
<td>Division of responsibility, feeding styles, positive meal times; father/child breakfast preparation &amp; meal together</td>
</tr>
<tr>
<td>Session 3</td>
<td>Picky eaters</td>
<td>“Gro” foods, novel food introduction; fruit and vegetable &amp; chili tate feeding</td>
</tr>
<tr>
<td>Session 4</td>
<td>Physical activity &amp; beverages</td>
<td>Indoor obstacle course &amp; hydration station (fun ideas for flavoring water)</td>
</tr>
</tbody>
</table>

Included a combination of nutrition and parenting education
Focus Groups - Summary

- Fathers were generally interested in a program just for them.
- Topics focused on improving diet, cooking and, physical activity related self efficacy and skills.
- Qualitative program feedback was positive and attendance was good but future quantitative evaluation is needed to evaluate the impact on father/child health.
Study Aims

- Conduct a pilot feasibility study with low-income father/child dyads to inform a future Randomized Controlled Trial including:
  a) Feasibility of recruitment/retention methods, intervention delivery, evaluation methods and measures;
  b) Comparing the intervention with a wait-list comparison group to calculate effect sizes for outcomes including food-related parenting practices, mealtime behaviors and practices, and father/child nutrition and physical activity behaviors.

Healthy Fathers, Healthy Kids

- Low-income fathers enrolled as a dyad (n=45) with their preschool age child in a group.
  - Intervention group
  - Wait-listed comparison group

- Overarching intervention goal =
  - To improve the family mealtime environment through nutrition and parent education with a secondary result of improving dietary intake and obesity risk of low-income children and their fathers.
Content & Approach

- **Content**
  - Healthy, Happy Families (HHF)
  - Cooking Matters (CM)

- **Delivery**
  - Interactive & Hands-on
  - Include child
  - Group based dialogue

- **Meaningful incentives**
  - Food, gift cards, meaningful giveaways, recognition

---

Weekly Lesson Plan Overview (8 weeks)

<table>
<thead>
<tr>
<th>Week</th>
<th>Nutrition (from Cooking Matters for Families)</th>
<th>Parenting (from Healthy, Happy Families) – Parent workbook</th>
<th>Informed Consent &amp; Pre-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Setting a healthy example</td>
<td>Important roles of fathers, Begin Healthy Habits Early</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cooking side by side</td>
<td>Feeding is parenting, Enjoying Family Meals</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Try it, you’ll like it</td>
<td>Cooperation in kids, Cooking with Kids</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Healthy starts at home</td>
<td>Structure, Rules and Routines, Healthy Routines</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Power of planning</td>
<td>Responding to emotions, Encouraging Positive Behaviors</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Family fitness &amp; healthy drinks</td>
<td>Playing is important, Child’s Play</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Shopping smart - Mock grocery store tour</td>
<td>Problem solving, Trying New Foods</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Celebrating success</td>
<td>Review &amp; friendly competition</td>
<td></td>
</tr>
</tbody>
</table>
Graduation Celebration

Measures

<table>
<thead>
<tr>
<th>Type of Measure</th>
<th>Specific Variable</th>
<th>Target</th>
<th>Time Frame (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food-related parenting practices</td>
<td>The Comprehensive Feeding Practices Questionnaire</td>
<td>Mother</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Father</td>
<td>0</td>
</tr>
<tr>
<td>Mealtime behaviors</td>
<td>The Meals in Our Household questionnaire</td>
<td>Mother</td>
<td>0, 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Father</td>
<td>0, 4</td>
</tr>
<tr>
<td>Nutrition &amp; physical activity</td>
<td>Townsend’s 45-item Healthy Kids Questionnaire</td>
<td>Father</td>
<td>0</td>
</tr>
<tr>
<td>behavior behaviors</td>
<td></td>
<td>Mother</td>
<td>0</td>
</tr>
<tr>
<td>Diet quality</td>
<td>24-hour dietary recall</td>
<td>Father</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Child</td>
<td>0</td>
</tr>
<tr>
<td>Obesity risk</td>
<td>Body Mass Index (father, mother) or BWI z-score (child)</td>
<td>Father</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Child</td>
<td>0</td>
</tr>
</tbody>
</table>
Results – Feasibility of Enrollment & Assessments

Enrollment:
- Father and child dyads (n=45) were enrolled
- Goal = 30 in each group
  - Intervention group (n=31)
  - Delayed comparison group (n=14 completed pre/post)

Assessments Completed:
- 81% of fathers who attended at least one session (n=27) completed a pre-post assessment
  - 1 month post assessment was dropped due to poor response rate

Some initial results...

- No significant differences were detected in mealtime or physical activity behaviors.
- Some significant differences were detected (in intervention fathers) for the following:
  - Decreased parental feeding pressure
  - Confidence in their cooking skills
  - Ability to cook healthy foods on a budget
  - Number of times fathers cooked dinner at home
  - Increased green salad consumption
  - Frequency of children eating vegetables

Discussion

- Recruitment
  - Site champion was key – someone who has rapport with families
  - Familiar site for program was important

- Engagement
  - Child was a motivator to attend
  - Majority of parent/child dyads attended at least 4 sessions
  - Need better method to engage fathers between sessions and after program
Discussion

- Retention
  - Timing (time of day and time of year) of program will impact drop out
  - Delayed comparison group proved difficult with 6-8 week delay before intervention
    - Recommend control group (no intervention) and/or comparison group with unrelated intervention

- Assessments
  - Monitor burden (24 hour recall was eventually dropped)
  - Conduct post assessments during last session

Conclusions

- While fathers remain an underserved audience in childhood obesity prevention outreach efforts, some challenges persist in recruiting and retention.
- Initial outcomes are promising.
- Further research should explore the impact of father-focused programming on parent and child outcomes and determine best practices in using technology enhancements with fathers in a community setting.

Acknowledgments

- Collaborators:
  - Dr. Kim Gans: HDFS
  - Dr. Kari Adamsons: HDFS
  - Dr. Tania Huedo-Medina: AHS
  - Ruth & Joe Freeman
  - Cooking Matters Program, CT
  - Manchester Preschool Center
  - Hockanum School

- Graduate students:
  - Jaime S. Foster, PhD, RD
  - Rebecca Heller, PhD, RD
  - Jesse Chiero, PhD, MSES
  - Julian Chan, RD

- Funding:
  - UCONN Large Faculty Grant
  - NICHD R21HD087817
THANK YOU!


amy.mobley@ufl.edu