


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

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Obesity prevention in preschool children

What about fathers?

Birch & Anzman. Child Dev Perspect, *2009*, 4: 138-143; Stang & Loth. J Am Diet Assoc,. *2011*, 111: 1301-1305; Wake et al. Pediatrics, *2007*, 120: e1520-e1527

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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

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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

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'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.

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FORMATIVE AND FEASIBILITY RESEARCH

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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.

Citation: Vollmer RL, Adamsons K, Gorin A, Foster JS, **Mobley AR**. Investigating the Relationship of Body Mass Index, Diet Quality, and Physical Activity Level between Fathers and Their Preschool-Aged Children. J Acad Nutr Diet. 2015 Jan 28.

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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

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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.

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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.

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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.

Mobley A.R., Adamsons K., Vollmer R.L., Rose A., Smith, J. S. *FASEB J.* April 2014: 808.19.

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

Focus Group Question (Social cognitive theory construct)	Sample Quotes from Participants
Who usually prepares food for your family? (Self efficacy)	"I want to learn. So, it is like I don't know another way to make that food. There are ways to make it that would be healthier, you know? But it is like, never taught me that way so it is like kind of hard for me."
What foods or beverages are the most difficult to get your child to eat or drink? (Behavioral capability)	"My kid won't drink water. Mine just wants juice all day and all of that stuff." "Kids they don't want to drink water. Um, and then like the youngest two they don't like vegetables."
"Like when you go to 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 heavy now but you know. I do some exercise."	
What do you do when your child refuses to eat or drink something? (Self control)	"I make sure they get their vegetable we try to get their vegetables in every night and um I tell them, you know what I am saying? You want dessert you got to clear that plate". "Well Kool-Aid got water in it so she drinking water, she just don't know it. It's flavored water, too."

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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.

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"Dad and Me" Feasibility Program (n=5)

Session (2 hrs each)	Topic	Interactive Discussion; Activities
Session 1	Program introduction	Parenting & feeding obstacles; father/child lunch
Session 2	Mealtime	Division of responsibility, feeding styles, positive meal times; father/child breakfast preparation & meal together
Session 3	Picky eaters	"Go" foods, novel food introduction; fruit and vegetable & chili taste testing
Session 4	Physical activity & beverages	Indoor obstacle course & hydration station (fun ideas for flavoring water)

Included a combination of nutrition and parenting education

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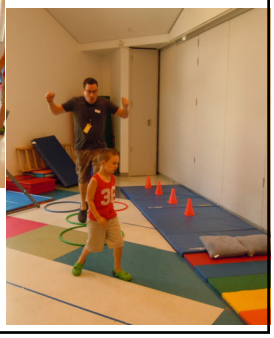

Focus Groups - Summary

- 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.

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Healthy Fathers, Healthy Kids

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.

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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.

Head Start

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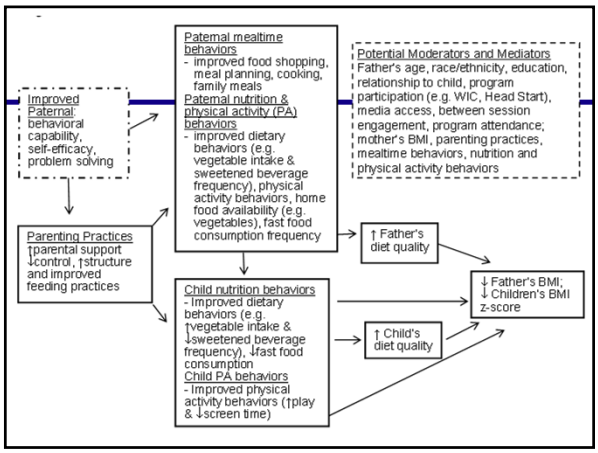

Content & Approach

- **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

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Weekly Lesson Plan Overview (8 weeks)

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

Graduation Celebration

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Measures

Type of Measure	Specific Variable	Target	Time (weeks)		
			0	8	12
Food-related parenting practices	The **Comprehensive Feeding Practices Questionnaire**	Father	x	x	x
		Mother	x	x	
Mealtime behaviors	The **Meals in Our Household questionnaire**	Father	x	x	x
		Mother	x	x	
	The "**Cooking Matters for Families**" evaluation tool	Father	x	x	x
Nutrition & physical activity behaviors	**Townsend's 45-item Healthy Kids Questionnaire**	Father	x	x	x
		Mother	x	x	
Diet quality	**24 hour dietary recall**	Father & Child	x	x	x
Obesity risk	(Body Mass Index, father, mother) or BMI z-score (child).	Father & Child	x	x	x
		Mother	x		

Assessments included a subset of mothers (n=27) to investigate moderating influences on outcomes

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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

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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

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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

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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

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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.

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For more information on recruitment, engagement and retention of fathers: Vollmer R.L., Adamsons K., Mobley A.R. Recruitment, Engagement, and Retention of Fathers in Nutrition Education and Obesity Research. *J Nutr Educ Behav*. 2019 Oct;51(9):1121-1125. doi: 10.1016/j.jneb.2019.07.006. Epub 2019 Aug 2.

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