

MOTHeRS' Project: Acceptability of a Medically Tailored Food Bag Treating Food Insecurity in High-Risk Pregnant Patients

Authors: Kay Craven MPH, RDN, LDN, CDCES; Kathryn M Kolasa PhD, RDN, LDN; Brittany Smith MS; Lauren Sastre PhD, RDN, LDN
Brody School of Medicine at East Carolina University; East Carolina University, Department of Nutrition Science

Summary Statement:

- **Food insecurity (FIS)** during pregnancy is related to poor diet quality and is associated with *increased risk of pregnancy and fetal complications*.
- Current interventions may be missing some women with FIS at critical points during pregnancy
 - Data from FNS suggests less than 50% of all eligible women participate in the WIC program
 - FIS is often cyclical, and women who may be food insecure at one point in their pregnancy may not identify as food insecure at another point

Objective:

To develop a medically tailored, nutritionally-complete emergency food bag with nutrition education handouts to address FIS identified in rural, high-risk pregnant women in the clinical setting

Use of Theory:

- Grounded in the **socio-ecological model**
- Addressing FIS to improve health outcomes in high-risk pregnant women requires a multi-layered approach and should include intervention at:
 - Individual (food behaviors, stigma, knowledge)
 - Community (screening, education, resources)
 - Societal levels (nutrition assistance programs)

Target Audience:

High-risk pregnant women who screen positive for FIS at *any* pre-natal appointment in three counties in rural, Eastern NC selected to pilot The MOTHeRS' Program

- Identified using the **2-Question Hunger Vital Sign Screener**, validated for use in the clinical setting

1. Within the past 12 months, we worried that our food would run out before we got money to buy more	Never	Usually	Sometimes
2. Within the past 12 months, the food we bought just didn't last and we didn't have money to get more	Never	Usually	Sometimes

SNEB Nutrition Educator Competencies : 2.2; 5.5; 8.1

Program Description:

The **MOTHeRS' Project** is a pilot program, funded by the United Health Foundation

- To provide mental health and maternal-fetal services via telehealth to women with high-risk pregnancies in rural OB-GYN practices
- *AND to address FIS*, as rates in these counties (18-24%) exceeded the state average (15%)

Development of an Emergency Food Bag

- Review of literature identified **9 under-consumed, essential nutrients**
- USDA and NIH food lists used to compile lists of foods high in target nutrients
- Reviewed foods/nutrients provided in WIC Food Package V
- Interviewed local nutrition and health professionals to gather information on the characteristics, habits, and preferences of high-risk pregnant women
- Availability and affordability determined using an online local grocery store

Food Bag Characteristics

- 31 shelf-stable food items, weighing ~26 lbs, and costing less than \$70
- Contains foods that are good sources of identified target nutrients
- Appropriate regardless of trimester or comorbidities
- Available and acceptable to women in rural, eastern NC
- *Complements* WIC Food Package V
 - Meets target nutrient needs for **2 weeks on its own, & 4 weeks combined with WIC**

Nutrient Analysis of MOTHeRS' Food Bag			
Nutrient	RDA ¹	Bag Provision ²	%RDA Covered (over 2 wks)
Calories	2000 kcal	23,658 kcals	85%
Protein	80 gm	1,193 gm	107%
Fiber	28 gm	404 gm	103%
Folate, DFE	600 mcg	14,337 mcg	171%
Iron	27 mg	464 mg	123%
Vitamin D	15 mcg	178 mcg	84%
Calcium	1.0 - 1.3 gm	14,208 mg	88%
Choline	> 450 mg	4,184 mg	66%
Iodine	220 mcg	991 mcg	32%
Total Omega 3's	650 mg	15,510 mg	170%
DHA	300 mg	4,110 mg	98%

1. RDA's based on findings from literature review and Brown LS. Chapter 1: Nutrition requirements during pregnancy. In: Sharlin J, Edelstein S, eds. Essentials of Lifecycle Nutrition. Jones and Bartlett; 2011:1-24.
2. Nutrient analysis performed using ESHA Nutrient Database

MOTHeRS' Food Bag			
Food Category	Food Type	Special Instructions	Quantity
Meat - Seafood	Canned	Salmon (packed in water, with bones) Chunk Light tuna (packed in water)	2, each
Meat - Other	Canned	Chicken (packed in water)	2
Nuts/Nut Butters	Jar or Bag	Mixed nuts (<50% peanuts; low sodium preferred) Peanut butter (low sugar and low sodium preferred)	1, each
Cereals	Ready-to-Eat or Cooked	RTE cereal (low sugar, whole grain) Grits (individual packets or canister) Oatmeal (canister or plain/low sugar packets)	1, each
Grains	Dry	Quinoa Egg noodles (fortified)	1, each
Snacks	Dry	Whole Wheat Crackers (reduced sodium preferred) Pretzels, baked (low sodium, if available)	1, each
Non-starchy Vegetables	Canned	Leaf Spinach, asparagus, collard greens (unseasoned), tomatoes, mushrooms, green beans; (low sodium preferred in all types)	1, each OR 6, total
Starchy Vegetables	Canned or Dried	All types: Black beans, kidney beans, chickpeas, white beans, pinto beans, black eyed peas, etc.	2, canned 1, dried
Fruit	Dry or Individual cups	Raisins (seedless, black or golden) Mandarin orange cups (low sugar, or packed in water) Applesauce cups (unsweetened)	1, each
Dairy	Dry or Canned, evaporated	Evaporated milk (low-fat, with Vitamins A and D added) Dry milk (powder, with Vitamins A and D added) Carnation Breakfast Essentials, Light Start drink mix (sugar-free)	2, canned 1, dry 1, breakfast mix



Development of Educational Materials

3 complementary handouts (English and Spanish), evaluated by 18 professionals with expertise serving rural, underserved pregnant women and/or FIS, developed to:

- Provide a guide for healthy eating during pregnancy, tips on food safety, and recipes to utilize food bag items



Implementation

- Clinic office staff trained to receive and distribute emergency food bags, screen for FIS, and counsel recipients using MOTHeRS' Project handouts
- Emergency food bag, education, and community resource list provided *each time* a patient screens positive for FIS

Evaluation Methods:

Process evaluation

- Semi-structured, audio-recorded telephone interviews using validated content - transcribed verbatim
- Deductive content analysis to identify themes
- Independent review of transcripts by the research team (n=4) using codebook, to develop consensus of themes

Results:

Preliminary themes suggest acceptance, high satisfaction, utilization of the emergency food bag and limited access to other food resources

Conclusion:

Our findings align with previous studies demonstrating that **medically-tailored food resources provided in the clinical setting are acceptable** and potentially associated with reduced social stigma