

Food Literacy: How can it be addressed?

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Objectives

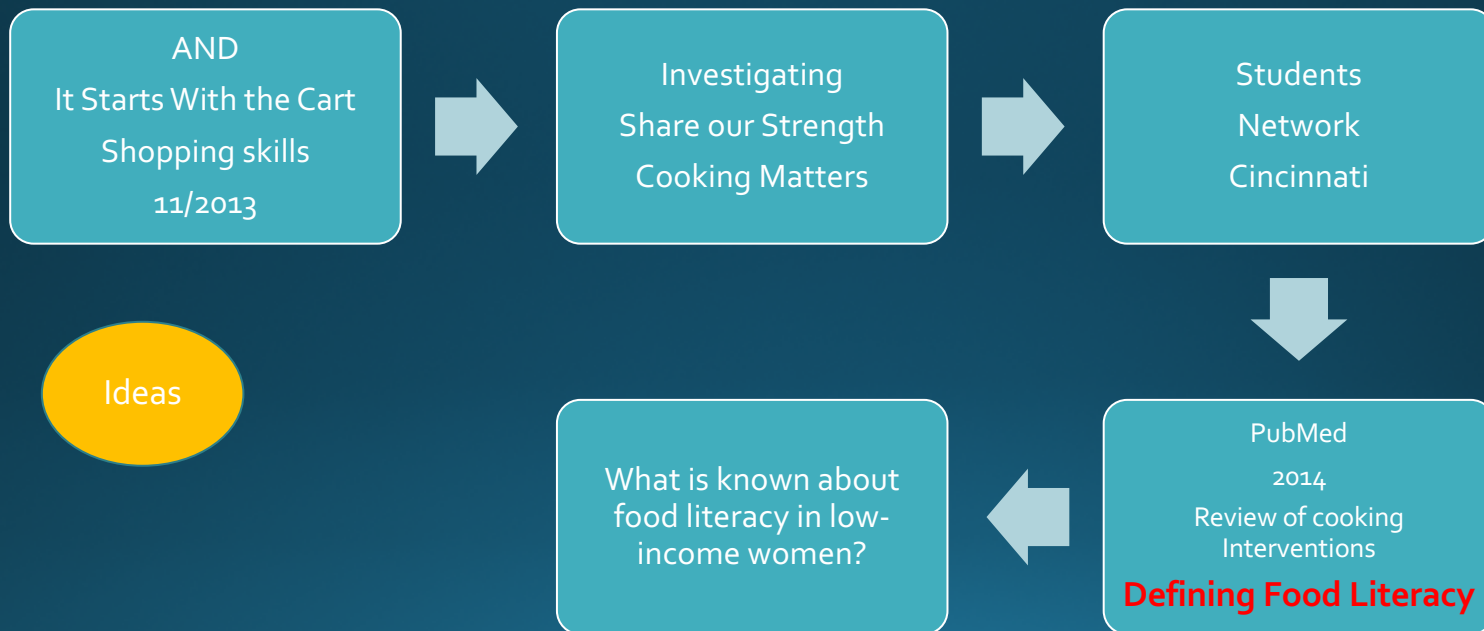
- After the session, attendees will be able to:
 - Understand the components of food literacy
 - Explain how to develop and evaluate a food literacy program offered to low-income mothers/grandmothers caring for children
 - Discuss barriers and facilitators to implementing a food literacy program for low-income women
 - Describe results from a food literacy program offered in WIC and Health Clinic groups

How did the idea begin? Observations



- Use Nutrition Data System for Research
 - many studies – dietary intake over ~20 years
- ↓ ↓ entering of recipes and ↑ ↑ searching for nutrition information
- ↑ ↑ consumption of foods prepared away from home
- Expensive food choices despite low income
- Trend throughout the world – erosion of cooking skills
- Food insecurity

Evolution of a Research Area



Impact of Cooking Interventions on Outcomes in Adults

- Review of literature – January 1980 to December 2011
- Most common study design – pre/post-test with intervention (23 studies)
- Application
 - Only 2 studies in low-income US women; one on mothers (intervention dose and fidelity unknown)(Condrasky)
 - Attendance affected outcomes (5/6 sessions) ↓ kcal and % energy fat (Shankar)
 - **Lack of validated assessment tools**

Process for Defining Food Literacy

- **Group** – Queensland University of Technology, **Australia**
- **Rationale** – Lack of consistent definition
- **Methods**
 - Qualitative and Quantitative Methods
 - Food Experts – policy and investment
 - Individuals – expert at obtaining foods for consumption
- **Peer Review** – literature of interventions, conference presentations
- **Final** definition and components

Definition of Food Literacy

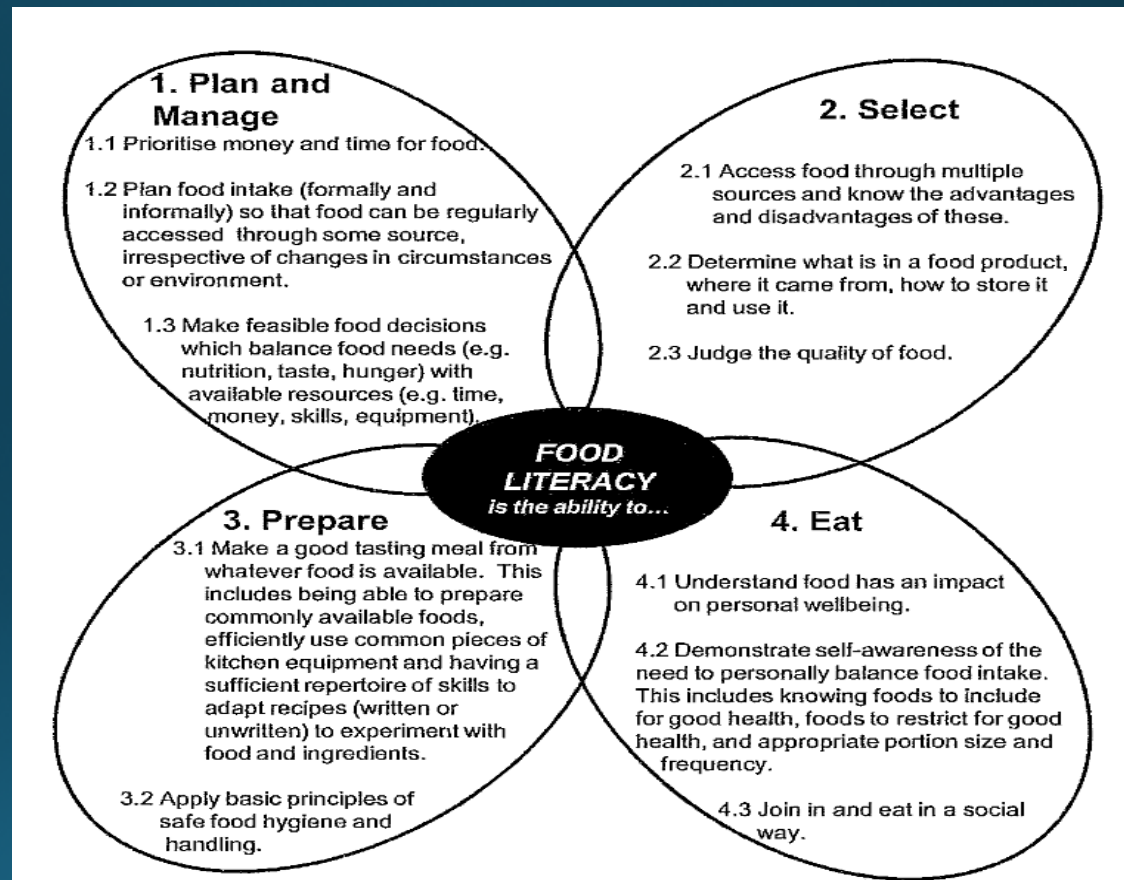
Food Literacy is.....

- “everyday practicalities associated with navigating the food system and using it in order to ensure a regular food intake that is consistent with nutrition recommendations”



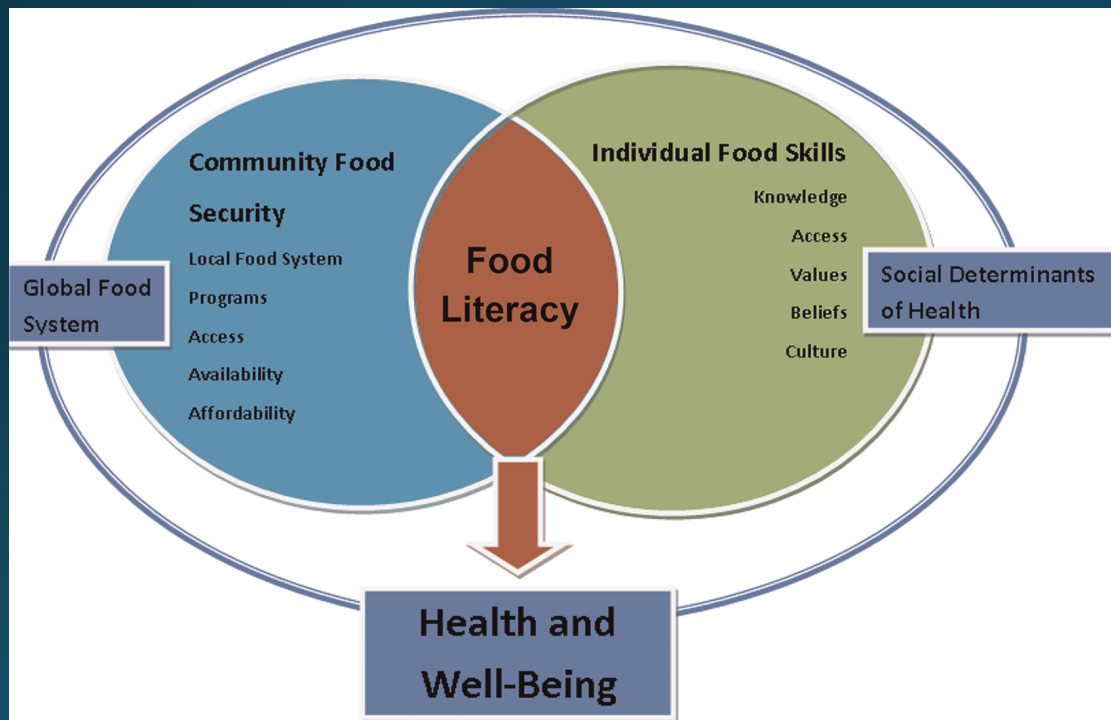
Vidgen et al. 2014

Components of Food Literacy



Vidgen et al. 2014

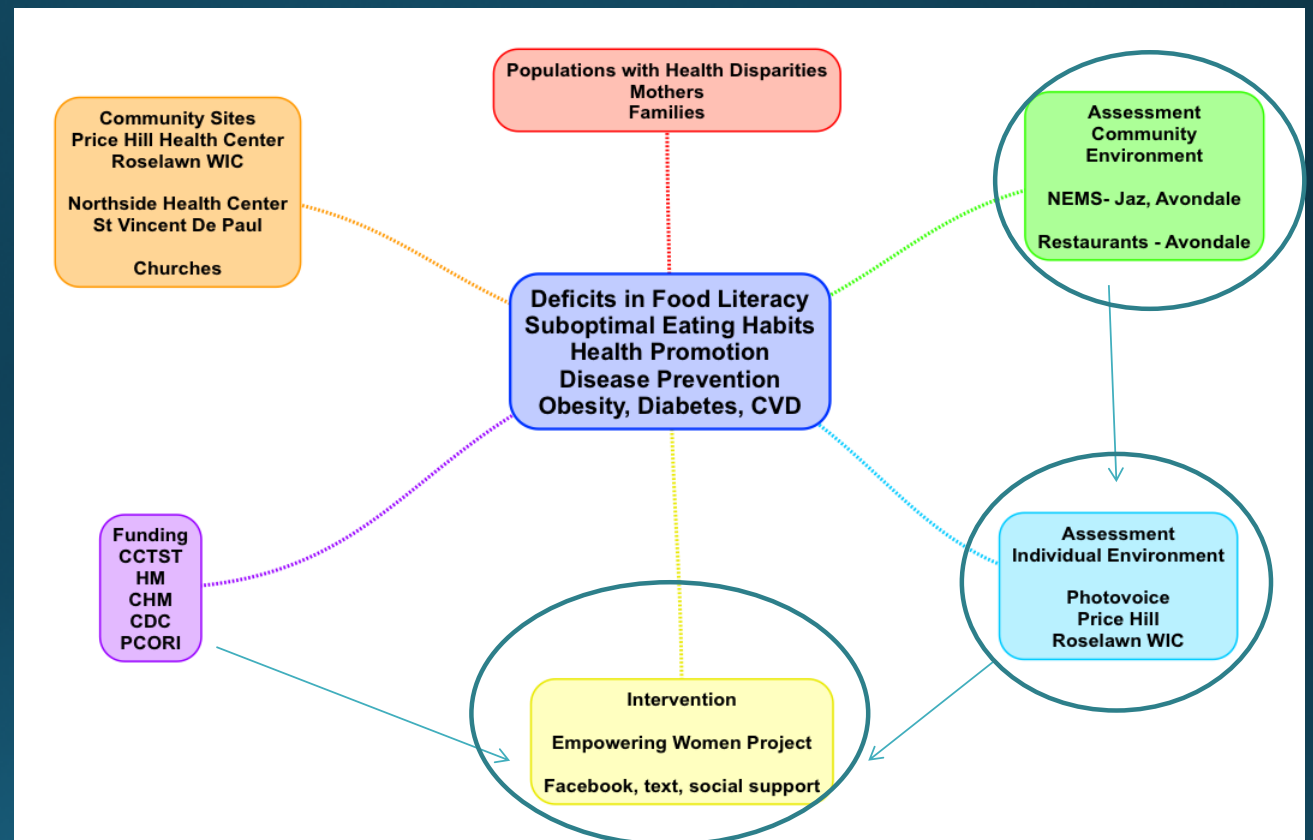
Food Literacy – Canadian Model



↑ Food Literacy empowered as an individual, community, and society

Cullen, 2015

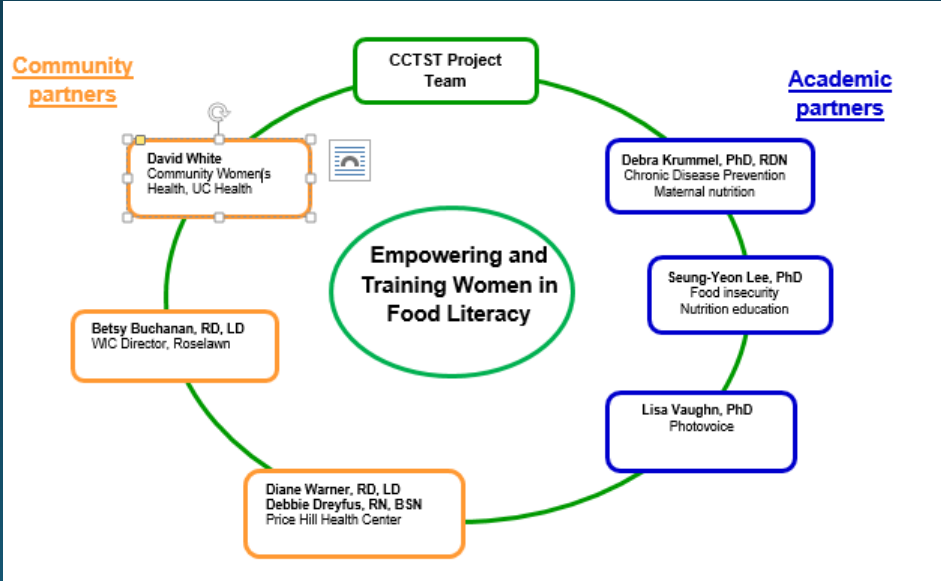
Overview of Projects For Food Literacy



Development of Food Literacy Project Partners and Volunteers

Volunteers

Mary F, Jaime N, Maggie C, Helen G, Katherine O, Ruth Ann C, and others



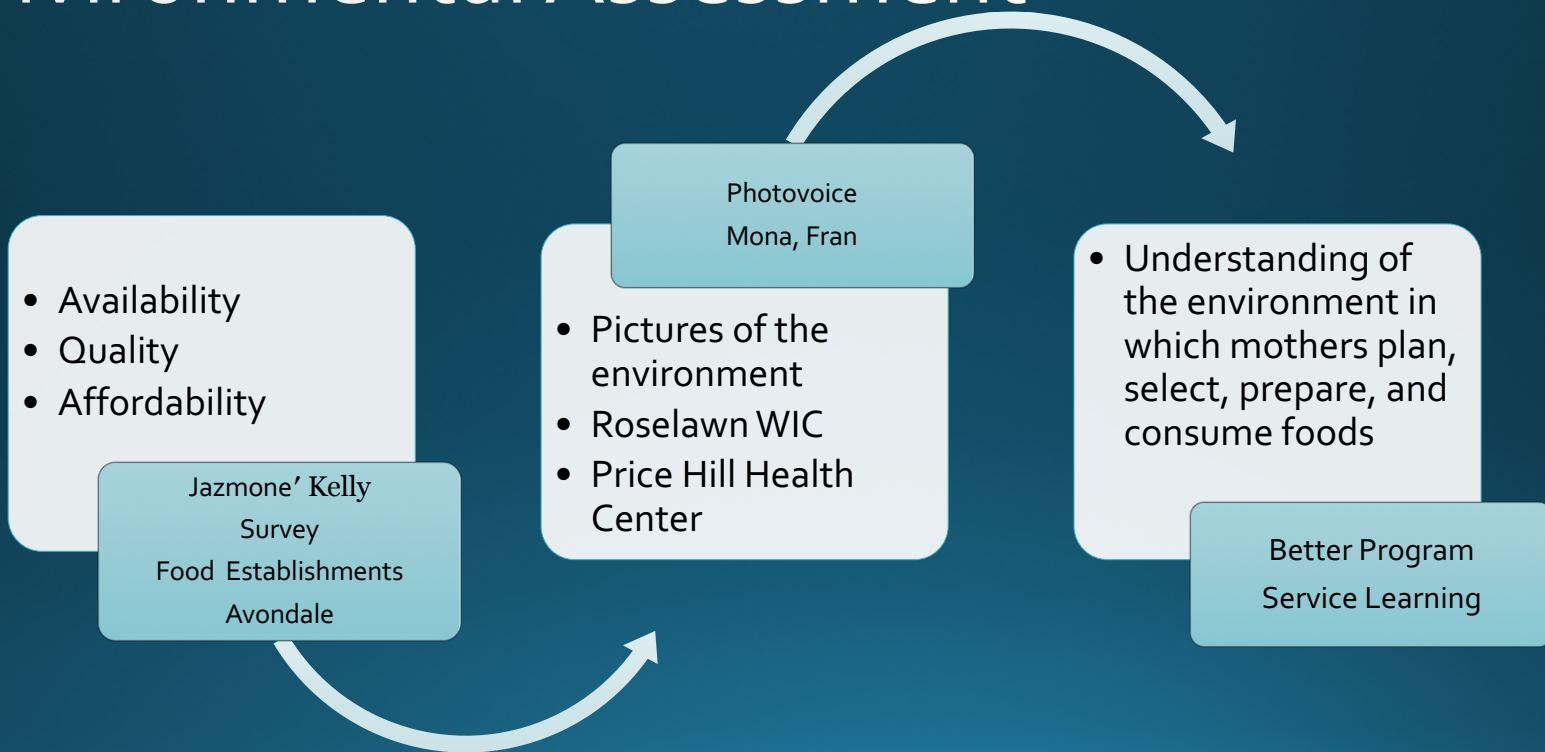
Sara Glanz

Jaz Kelly

Fran Urbina

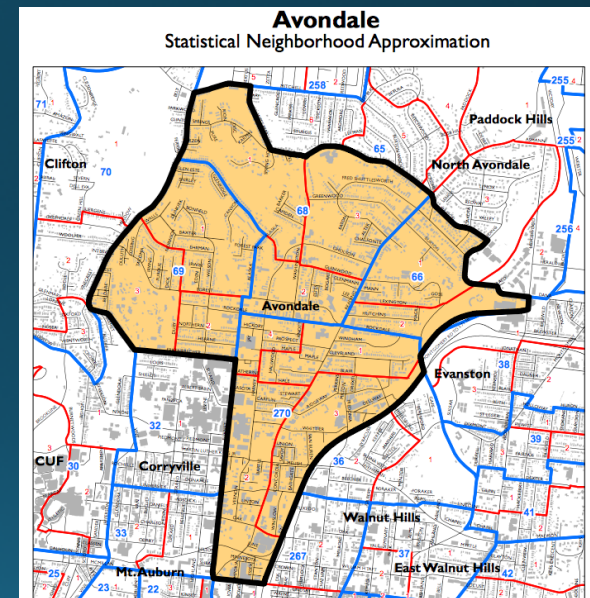
Two small grants
CCTST and Sisters of the Humility of Mary

Phase 1 Environmental Assessment



Environmental Assessment in the Community

- ◆ Spans 1.3 miles
- ◆ Predominantly African American
- ◆ 20% poverty rate
- ◆ MHI - \$18,120




Neighborhood	Population	African American	Caucasian	Median Household Income
Avondale	12,466	11,359	1,108	18,120

Survey of Establishments Selling Foods in Avondale

Survey

- What is it?
 - Nutrition Environment Measures Survey
 - Yale University Rudd Center
- What it measures?
 - Availability
 - Quality
 - Affordability

Nutrition Environment Measures Survey (NEMS)
Food Outlet Cover Page

 Rater ID:

Store ID:

Grocery Store
 Convenience Store
 Other: _____

Secondary Store Type (if applicable):
 Drugstore or pharmacy
 Ethnic food store
 Corner store
 General merchandise store (Target, WalMart, etc)
 Big box store (Sam's Club, CostCo, etc)

Date / /
Month Day Year

Start Time: : : AM PM
End Time: : : AM PM

Number of cash registers:

Comments: _____

Restaurant ID:

Fast Food
 Fast Casual
 Sit Down
 Specialty: _____
 Other: _____

Site Visit Date / /
Month Day Year

Start Time: : : AM PM
End Time: : : AM PM

Menu/Internet Review Date / /
Month Day Year

Start Time: : : AM PM
End Time: : : AM PM

Other Visit/Interview Date / /
Month Day Year

Start Time: : : AM PM
End Time: : : AM PM

Nutrition Environment Measures Survey (NEMS)
Cover Page

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Foods on the Survey

- Milks and Cheeses – lower fat and regular
- Fruits – fresh, frozen, canned
- Vegetables - fresh, frozen, canned
- Meats and meat alternatives
 - Ground beef, chicken breasts, thighs; tuna, beans
- Beverages – soda, water, juice (100%)
- Breads – whole grain, white
- Rice and pasta – whole grain, white
- Cereals – whole grain, high/low sugar
- Chips – low-fat, regular

NEMS – Results in Avondale – Food Desert

- Sample --- Retail food outlets
 - 1 chain/supermarket, 3 convenience stores, 1 food mart (N=5)
- Healthy food options – poor availability
 - Fruits – oranges and apples (N=2)
 - Veg – cabbage and tomatoes (N=1)
 - Skim milk – 0; lean cuts of meat/chix – 0
- Costs
 - Prices of foods not frequently displayed
 - No unit pricing
 - Changed ?

Market 1 & 2 Quality



Community Environment Conclusions

- ◆ -10 to 58 points possible (availability + price + quality)
- ◆ Median Score 21.6
- ◆ Based on the composite store Avondale's food environment has room for improvement

Environmental Assessment in Individuals

Capturing the Food Environment in Low-Income Mothers

- Purpose
- To characterize food literacy in low-income women using Photovoice
- To inform the community regarding food literacy of mothers who receive care at Price Hill Health Center or who participate in the WIC program at Roselawn

Photovoice Process

- Women take pictures of their food environment and gather for conversations around the pictures
- Meet weekly for 5 meetings and then community exhibit
- Goal ~ 10 women
- Starting November 30, Dec 7, Dec 14, Jan 4, Jan 11, Jan 25 (Make up); Mondays - 2 hours with food

Photovoice Meetings

Week	
1	Training , video, design, photography, ethics of picture taking What do they want in a food literacy intervention
2	Viewing, discussing, giving next assignment Food selection Where did I obtain foods this week? Were you able to find what you wanted/needed?
3	Viewing, discussing, giving next assignment Food preparation and storage
4	Viewing, discussing, giving next assignment Tracking food from source to consumption – what that looked like What's on your plate – is it on a plate
5	Preparing for the exhibition
6	Exhibition in the community

Food Literacy Components

Planning and Managing



Selecting



Food Literacy Component Preparing



Food Literacy Component

Where did you eat? Grandma's house

- Good, good good
- Fried pork chops, potatoes, and broccoli with cheese



Lessons Learned

- Price Hill
 - Better to have a community of women who already know each other
 - Trade off = attendance vs following topic
- Do not schedule anything around the holidays (did know this!)
- Cameras
 - Too complicated
 - Not enough of an incentive to have them come
 - Use phones – private submission
 - \$5 gift card and bus pass - worked in other studies, not here

Empowering and Training Women in Food Literacy Program

- Obtained two grants
- Met with and learned from professionals
 - dietitians, nurses, physicians, community health workers at each site
 - Coordinator in College of Medicine
- Met with and learned from mothers from WIC
- Develop the program
- Develop and evaluate recipes – quality, ease of instructions etc
- Develop an evaluation tool

MOMS IN THE KITCHEN

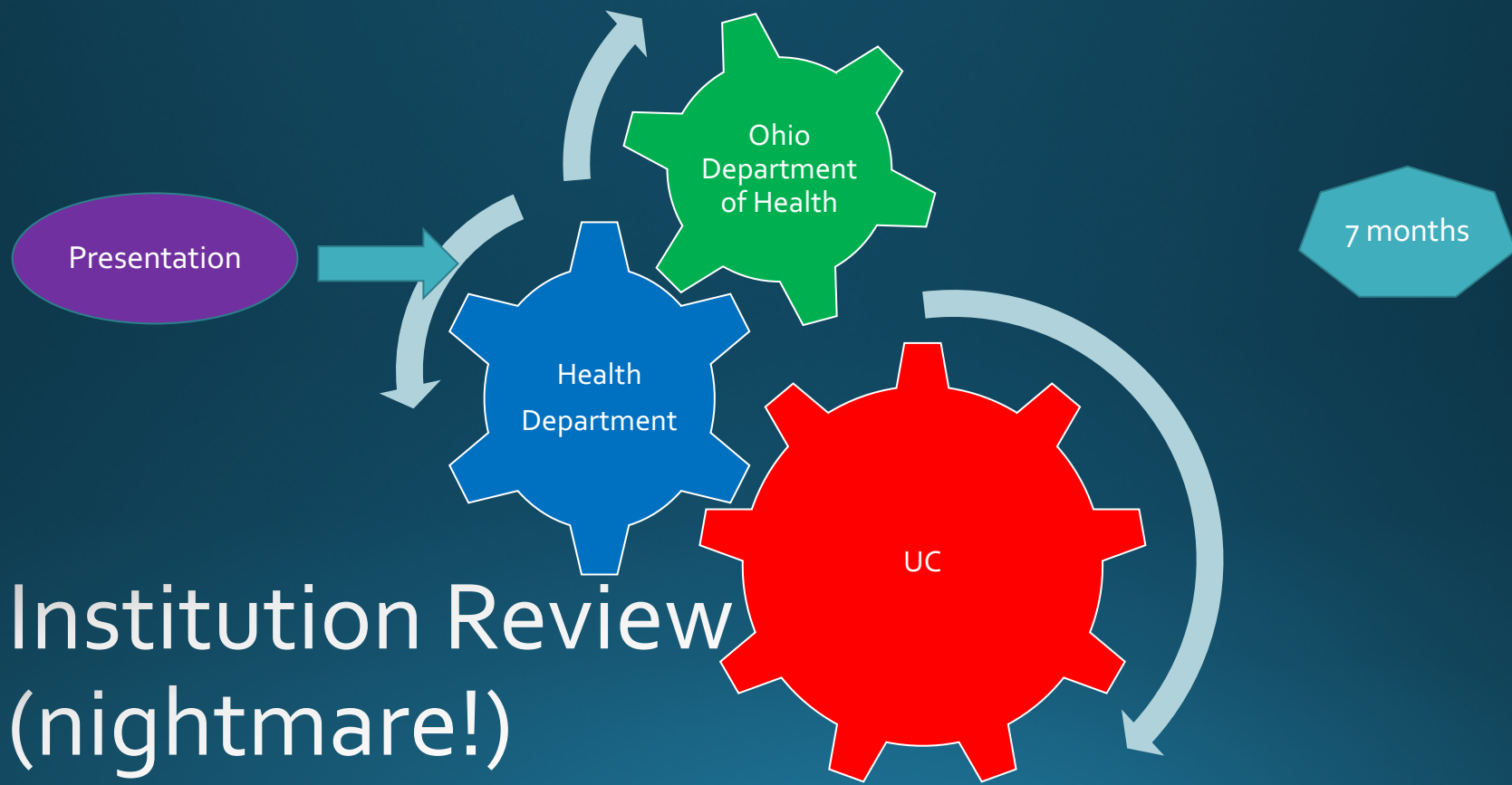


*Your Guide To
Preparing Healthy, Tasty Meals*

Your Name _____



The Community Groups of Mothers



Institution Review (nightmare!)

Food Literacy

Plan & Manage

- 1.1 Prioritize time and money for food
- 1.2 Plan food intake
- 1.3 Make feasible food decisions

Select

- 2.1 Access food
- 2.2 Determine what's in a food product
- 2.3 Judge quality of food

Prepare

- 3.1 Make a good tasting meal from what's available
- 3.2 Food safety

Eat

- 4.1 Food has impact on wellbeing
- 4.2 Self-awareness of need to balance food intake
- 4.3 Eat in a social way

Self-Efficacy

In planning, managing, selecting, preparing, and eating foods

Behavior ↑

In planning, managing, selecting, preparing, and eating foods

Knowledge

In planning, managing, selecting, preparing, and eating foods

Empowerment

For change to optimal food consumption

Change for optimal food consumption

Conceptualization

Improved health outcomes

Program Outcomes

Knowledge

- What is in a food
- How to store foods
- How to prepare foods
- Basic food safety principles
- At least 5 meals that can be prepared in 30 minutes or less
- Foods that should be added or limited in a healthy diet
- Recommended portion sizes

Program Outcomes

Self-efficacy

- Participants will have increased confidence in
 - Planning food intake for the week and month
 - Using store coupons and other budget aids
 - Using leftovers
 - Being able to prepare a recipe from whole foods
 - Measuring ingredients

Program Outcomes

Behaviors

- ↑ planning of meals and selections for purchasing
- ↑ purchasing of whole foods versus convenience foods
- ↑ Use of basic ingredients to prepare meals
- ↑ times per week that cooking from whole foods occurred
- Improved dietary adequacy for intake of fruits and vegetables, lean protein sources, and whole grains
- Use of recipes from class (post test only)

Topics

- 1. Eggs.** Explore the world of EXTRAORDINARY EGGS! Learn about the versatility of eggs, an affordable and nutritionally-balanced protein. Prepare and eat a delicious egg skillet recipe.
- 2. Beans.** Take a bite of our ALL-STAR BEANS! Learn about the benefits of beans, a lean protein that is packed with fiber. Prepare and eat a tasty bean bowl.
- 3. Pasta.** Discover the ITALIAN WONDER POT! Learn about planning meals with pasta. Prepare a “Wonder Pot” in under 30 minutes.
- 4. Soup.** Take a sip of our SUPER SOUP! Learn tips to make quick, delicious soups. Prepare a hearty soup that is a complete meal.
- 5. Sliders.** Give three cheers for SENSATIONAL SLIDERS! Learn ways to make “take out” sliders at home. Prepare and taste a slider of your choice.
- 6. Stir Fry.** Sample a SIZZLING STIR FRY! Learn ways to create a limitless number of stir-fry dishes with our homemade sauces, vegetables, and lean proteins. Prepare your stir fry using favorite ingredients and create a customized stir fry. |

Class Format

- Circle time
- Select ingredients
- Prepare meal
- Eating and sharing
- Preview for next week



Preparation - Cook Stations



Food Literacy Components

Sample Class on Extraordinary Eggs

Component

Plan & Manage

Prioritize money and time

Plan food intake – e.g., where can I get eggs

Have an egg meal as an economical meal

How much do I buy for the whole family

Make feasible food decisions which balance food needs – nutrition, taste, hunger – with available resources
e.g., time, money, skills, equipment

Select

How to store and use eggs – food storage, food preservation

How to select the best size of egg for the price

Prepare

Use common pieces of equipment

Skill to adapt a recipe

Apply basic principles of safe food hygiene and handling – eggs on counter, etc

Eat

Foods to include in good health

Portion sizes

Join in and eat in a social way

Class 1—extraordinary eggs

- Plan a meal with an egg dish
- Be a grocery store guru
- Buy fresh eggs for the best price
- Store eggs
- Cook a frittata – egg dish
- Eat eggs
- Evaluate the recipe



EGGS THREE WAYS FRITTATA * OMELET * SKILLET



Eggs

Children 2-3 years: 1 egg

Children over 3 years, adults: 2 eggs

Tip: 1 Tbsp. of milk or sour cream makes eggs extra fluffy!



Vegetables – pick 2 or 3

Avocado	Corn
Mushrooms	Asparagus
Onions	Potatoes
Peppers	Broccoli
Tomatoes	Squash
Spinach	Zucchini



Protein – pick 1 (optional)

Deli meats	<i>Leftover...</i>
<i>Such as turkey, ham</i>	Chicken
Beans	Turkey
Shredded cheese	Steak



Egg Skillet Ideas

- Breakfast – potatoes, tomatoes, shredded cheese
- Southwest – mushrooms, peppers, onions
- Thanksgiving – turkey, potatoes, cheese
- Mexican – peppers, tomatoes, black beans, avocado
- Veggie delight – spinach, peppers, tomatoes

Frittata • Egg Pie • Omelet

For 2 servings...

- 4 eggs
- ¼ cup liquid (milk, tomato juice, or broth)
- ¼ teaspoon thyme, spices, or herbs of your choice
- Salt and pepper, to taste
- 1 cup of vegetables
- 1 tablespoon butter



Instructions...

How to Make a Frittata

1. Beat eggs, liquid, herbs/spices, salt, and pepper in a medium bowl.
2. Melt butter in skillet and add vegetables until spinach wilts.
3. Pour egg mixture into pan to cover the bottom of the pan.
4. Cook over low to medium heat until eggs are almost set.
5. Remove pan from heat. Cover and let stand for 5-10 minutes until eggs are completely set (no visible egg liquid).

Food Safety

When cooked properly, eggs are a safe and nutritious food for you and your family. The risk of an egg being contaminated with Salmonella bacteria is low (1 in 20,000 eggs). Proper handling of eggs can reduce the risk.

Buy Right

- Buy eggs sold from a refrigerator or refrigerated case
- Open the carton to make sure eggs are clean and shells are not cracked
- Separate eggs from other foods in your grocery cart, grocery bags, and in the refrigerator



Keep It Clean

- Clean your hands, and surfaces or utensils that come in contact with raw eggs
 - Clean with hot, soapy water for at least 20 seconds
- Keep eggs in (not on door) of the refrigerator at 33-40°F



Cook Thoroughly

- Use only clean eggs with unbroken shells
- Cook eggs until the whites and yolks are firm
- Cook egg-containing dishes to an internal temperature of 160°F



Serve Safely

- Serve cooked eggs and egg-containing dishes immediately after cooking
- For buffet-style serving, hot egg dishes should be kept hot, and cold egg dishes should be kept cold
- Cooked eggs (such as hard-boiled eggs, egg-containing dishes), should not sit out for more than 2 hours
- Keep eggs cool while traveling on the road: use an insulated cooler, frozen gel pack, or frozen juice box to keep cool



Egg Storage

Eggs are perishable and must be stored in the refrigerator or freezer. If you keep them too long, they may dry up.

Refrigerator Storage

- 35-40°F
- Store in the original carton
- Store on an inside shelf instead of the door
- Refrigerate raw eggs out of the shell in a tightly covered container

How Long Do They Last?

Raw whole eggs (in shell)	About 3 weeks after purchase
Raw whole eggs (beaten)	2 days
Raw egg whites	4 days
Raw egg yolks	2 days
Hard-boiled eggs (in shell)	1 week
Hard-boiled eggs (peeled)	Same day



Program Delivery

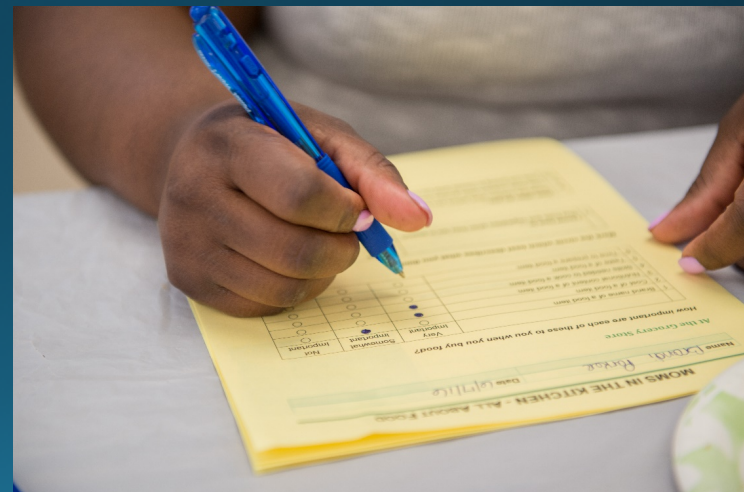
- Who – Dr. Krummel, nutrition grad student, helpers
- What - 6 weekly, 2 hour courses
- How – individual cook stations, induction burners; women learn skills including preparing food that they will then take home
- When - Winter, spring
- Where – Zumba classroom Roselawn WIC; State Avenue Methodist Church, Price Hill

Biggest Obstacle



Evaluation

- Process evaluation – Fran Urbina – Friday, March 10, G60
 - Abstract accepted at FNCE
- Pilot evaluation –
 - Abstract accepted at FNCE



Description of Sample

- 15 women (NHB 40%, NHW 60%)
- Median age = 32 years
- Recruited from Roselawn WIC or Price Hill Health Center
- Program conducted at Roselawn WIC building or State Avenue Methodist Church
- Mean attendance = 5 out of 6 classes

Why they kept coming...

- Prevent food waste
- Trying new foods, spices, recipes without incurring cost
- Taking home dinner to the family
- Comradery
- Fun!!!



What they liked....



What they liked

- 
- “ It was the first time in my life where I didn’t run out of food for my kids because I learned how to shop.”

Impact



Cooking Incentives – A favorite!
