

FOSTERING COMMUNITY WELLNESS THROUGH NUTRITION AND PHYSICAL ACTIVITY AT K-STATE RESEARCH AND EXTENSION

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Agenda

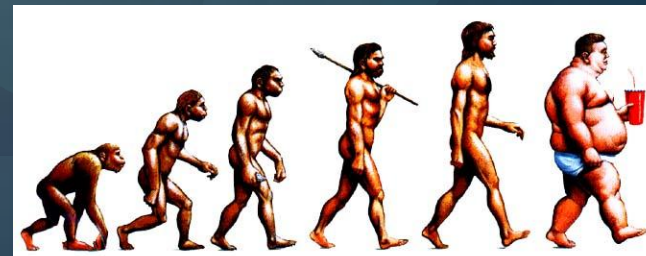
- Introduction
- Literature Review
- Practicum Theory Application
- Methods
- Results
- Discussion
 - Public Health Magnitude



INTRODUCTION

Introduction

- Obesity
 - Chronic diseases (diabetes, cardiovascular disease, and metabolic disorders)
 - Lower socioeconomic status (SES) and minority background (Tukcer-Seely, Li, Sorensen, & Sabramaniam, 2011)
 - Physical Activity (PA)
 - Child and adults from lower SES are more likely to be less physically active and have higher rates of obesity (Burgie, et al., 2010; Dubois & Girard, 2006; Semmler, Ascroft, van Jaarsveld, Carnell & Wardle, 2008).
- PA and nutrition can reduce the effects of obesity and its related co-morbidities



Program Activities

- Expanded Food and Nutrition Education Program (EFNEP)
- Worksite Wellness, *Take 10*
- Pressure-cooking class



EFNEP

EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM

Take 10

Program Description: EFNEP

- Goals and objectives
 - Nutrition Education
 - *Move More*
- Targets low-income adults with limited resources who are responsible for food preparation
- Small groups or one-on-one with clients
- Participants receive a certificate at end of course



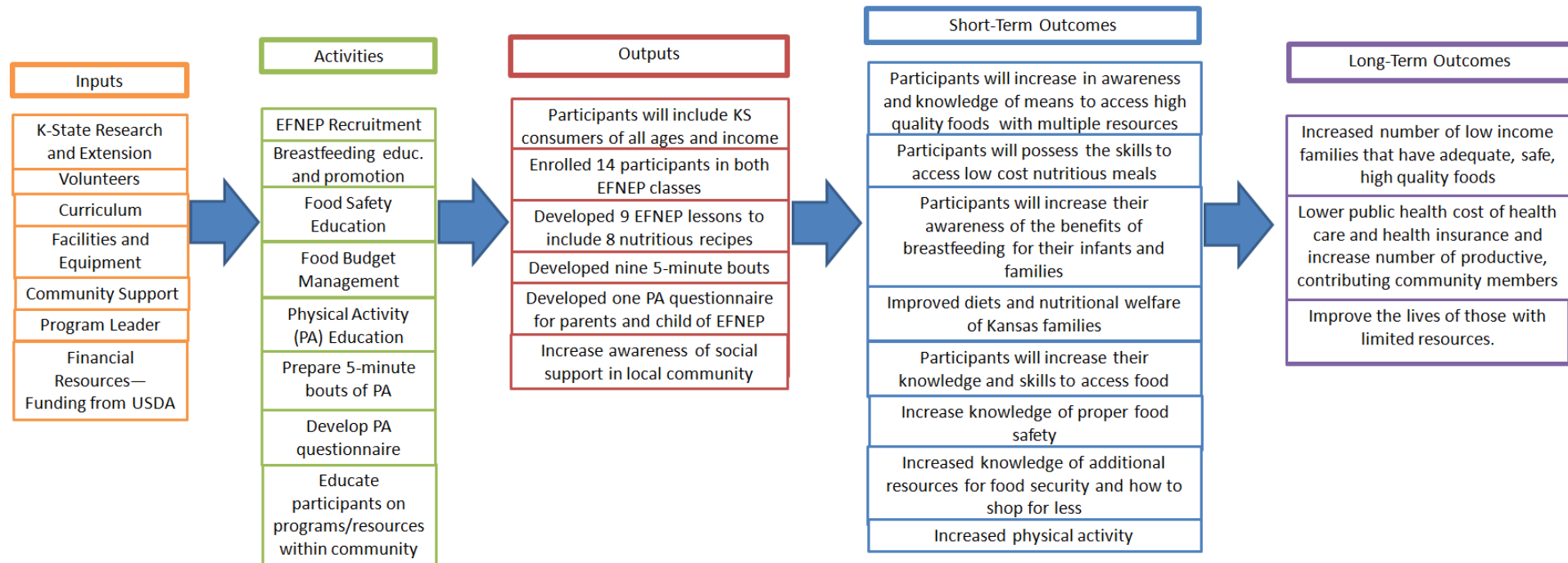
A Need for Kansans?

- Over **18%** of Kansans have low income and **13%** are in poverty (US Census Bureau, 2010)
- In 2010, Kansas EFNEP participants
 - **53%** were at or below 100% poverty level and **29%** were non-White
 - Over **1300** Kansas families with over **2,000** children (Proctor, 2011)

Logic Model

Expanded Food and Nutrition Education Program (EFNEP) Logic Model: K-State Research and Extension

Statement of Problem: Poorer welfare of those with limited resources



EFNEP Curriculum

Introduction to EFNEP

- Introduction to EFNEP

Moving More, Everyday, Everywhere

- Choosing to Move More Throughout the Day
- Choose, Plan, Do for a Healthier You
- Healthy and Strong

Moving More, Watching Less

- Limit TV

Eating Smart at Home

- Plan: Know What's for Dinner
- Shop: Get the Best for Less
- Fix it Fast, Eat at Home
- Shop for Value, Check the Facts
- Fix it Safe
- Choosing More Fruits and Vegetables
- Smart-size Your Portions and Right-size You

Eating Smart on the Run

- Making Smart Breakfast Choices
- Making Smart Lunch Choices
- Making Smart Choices When Eating Fast Food
- Making Smart Choices When Eating Out
- Making Smart Drink Choices

Eating Smart Throughout the Life Cycle

- Pregnancy
- Breastfeeding
- Infants
- Children
- MyPyramid: Steps to a Healthier You

EFNEP Curriculum for Practicum

- Week 1—Introduction to EFNEP/My Pyramid: Steps to a Healthier You
- Week 2—Choose, Plan, Do for a Healthier You/Children/Limit TV
- Week 3—Choosing More Fruits and Vegetables
- Week 4— Smart-size Your Portions and Right-size You
- Week 5—Shop: Get the Best for Less/ Shop for Value, Check the Facts
- Week 6—Fix it Safe
- Week 7—Meal Time Mania (Making Smart Breakfast Choices/Making Smart Lunch Choices/Plan: Know What's for Dinner)
- Week 8—Making Smart Choices When Eating Fast Food/Make Smart Choices When Eating Out/Making Smart Drink Choices
- Week 9—Conclusion/Healthy and Strong

Physical Activity Component

- *Move More*
- *Instant Recess* was implemented to make the PA component more robust
 - 10-minute bouts of physical activity that include music, dance, and traditional body weight exercises
 - 5-minute bouts due to time constraints

Physical Activity Component

- Week 1—*Instant Recess*—Stretching
- Week 2—*Instant Recess*—Walking/Introduction to pedometer
- Week 3—*Instant Recess*—Fitness Bands
- Week 4—*Instant Recess* for Children
- Week 5—*Instant Recess* for Upper Body
- Week 6—*Instant Recess* for Lower Body
- Week 7—*Instant Recess* in the Office/Work
- Week 8—*Instant Recess*—Dance
- Week 9—*Instant Recess*—Sports

EFNEP Groups

- **Flint Hills Job Corp (JC)**
 - Enhanced PA component with 5-minute *Instant Recess* break
 - Low-income, young females (16 and older)
 - Completing high school diploma, GED, and receiving job training
- **Riley County (RC)**
 - *Move More PA*
 - Low-income
 - More educated



Program Evaluation

- ENFEP Eating Right Survey
 - Traditional survey
 - Behavior checklist on how parents planned and fixed meals for their families
 - County Reporting System version 5 (CRS₅)
- 24-hour Food Recall
 - Traditional survey
 - CRS₅



Program Evaluation

Eating Right Survey

This is a survey about ways you plan and fix foods for your family. As you read questions, think about the recent past. This is not a test. There are no wrong answers. If you do not have children, just answer the questions for yourself.

For these questions, think about how you usually do things. Please put a check in the box that best answers each question.	(1) Never	(2) Seldom (Almost Never)	(3) Some- times	(4) Most of the time	(5) Almost Always
(1) How often do you plan meals ahead of time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) How often do you compare prices before you buy food?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) How often do you run out of food before the end of the month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) How often do you shop with a grocery list?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) This question is about meat and dairy foods. How often do you let these foods sit out for more than two hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) How often do you thaw foods at room temperature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(7) When deciding what to feed your family, how often do you think about healthy food choices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(8) How often do you eat or prepare foods without adding salt?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(9) How often do you use the "Nutrition Facts" on the food label to make food choices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(10) How often do your children eat something in the morning within two hours of waking up?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(11) How often do you eat meals or snacks with one or more family members?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Program Evaluation

24-hour Food Recall

[illegible]

Program Evaluation

- PA Survey for Adults and Children
 - Developed from PA survey from HOP'N After School Project and SPARK (Dzewaltowski et al., 2010; Sallis, 2011)
 - Parent's days of PA for the past week
 - Child's hour per day of PA
 - SPSS 17



LITERATURE REVIEW

Literature Review

- EFNEP
- Instant Recess
- Learner-centered education

Literature Review

- 2009, National data
 - **94%** positive change in one or more food groups
 - **28%** improvement in PA (USDA, 2009)
- 2010, National data
 - **88%** improvement in food resource management (Questions 1-4)
 - **66%** improvement in food safety practices (Questions 5 & 6)
 - **40%** improvement in PA (USDA, 2010)
- 2010, Kansas data
 - **87%** improvement in food resource management (Questions 1-4)
 - **95%** improvement in nutrition practices (Questions 1, 7-10)
 - **43%** increase in PA (Procter, 2011)
 - **47%** increased in eating more family meals together

Literature Review

- Research-based evidence
 - Cullen et al., 2009; Cullen et al., 2010
 - Improvement in dietary behaviors
 - Improvements in parent feeding skills
 - Improvement in self-efficacy nutrition practices when more goals were obtained
 - Boyd & Windsor, 2003
 - Program designed for pregnant women
 - Improvements were seen in nutrition competencies and dietary behavior

Literature Review

- Cost Effective?

- Virginia found a healthcare savings of **\$10** per every \$1 spent on EFNEP (Radhika, Cox, Lambur, & Lewis, 2002)
- Oregon EFENP found a **\$3.63** savings in healthcare for every \$1 spent on EFNEP (Schuster et al., 2003)
- Tennessee EFNEP found a savings of **\$124** to **\$234** per household on a year basis with an average savings of **\$10-\$20**/monthly on grocery bills (Burney and Haughton, 2002)

Literature Review



- *Instant Recess*
 - Short bouts of exercise of at least **10** minutes have been shown to decrease weight, BMI, and waist circumference (Lara et al., 2008)
 - Higher self-perception of actual health and fitness (Yancey et al., 2004)
 - Those with higher self perception of fitness may be more motivated to be more physically active (Barr-Anderson , AuYoung, White-Glover, Glen, & Yancey, 2011; Yancey et al., 2004)
 - For children, activity breaks are one of the most effective ways to increase PA (Barr-Anderson , AuYoung, White-Glover, Glen, & Yancey; Donnelly, et al., 2009; Salmon, Booth, Phongsavan, Murphy, & Timperio, 2007)

Instant Recess Break

- African Dance Lift Off
 - <http://www.youtube.com/watch?v=HOUQ8bpBnFk>

Literature Review

- Learner-centered education
 - Focuses on interests and needs of learner
 - Learners seek out and use the skills and tasks they would naturally use (Gunderman, Williamson, Frank, Heitkamp, & Kipfer, 2003; Stanley & Dougherty, 2010; Norman & Spohrer, 1996)
 - Effective in increasing fruit and vegetable intake
 - WIC participants (Gerstein et al., 2010)



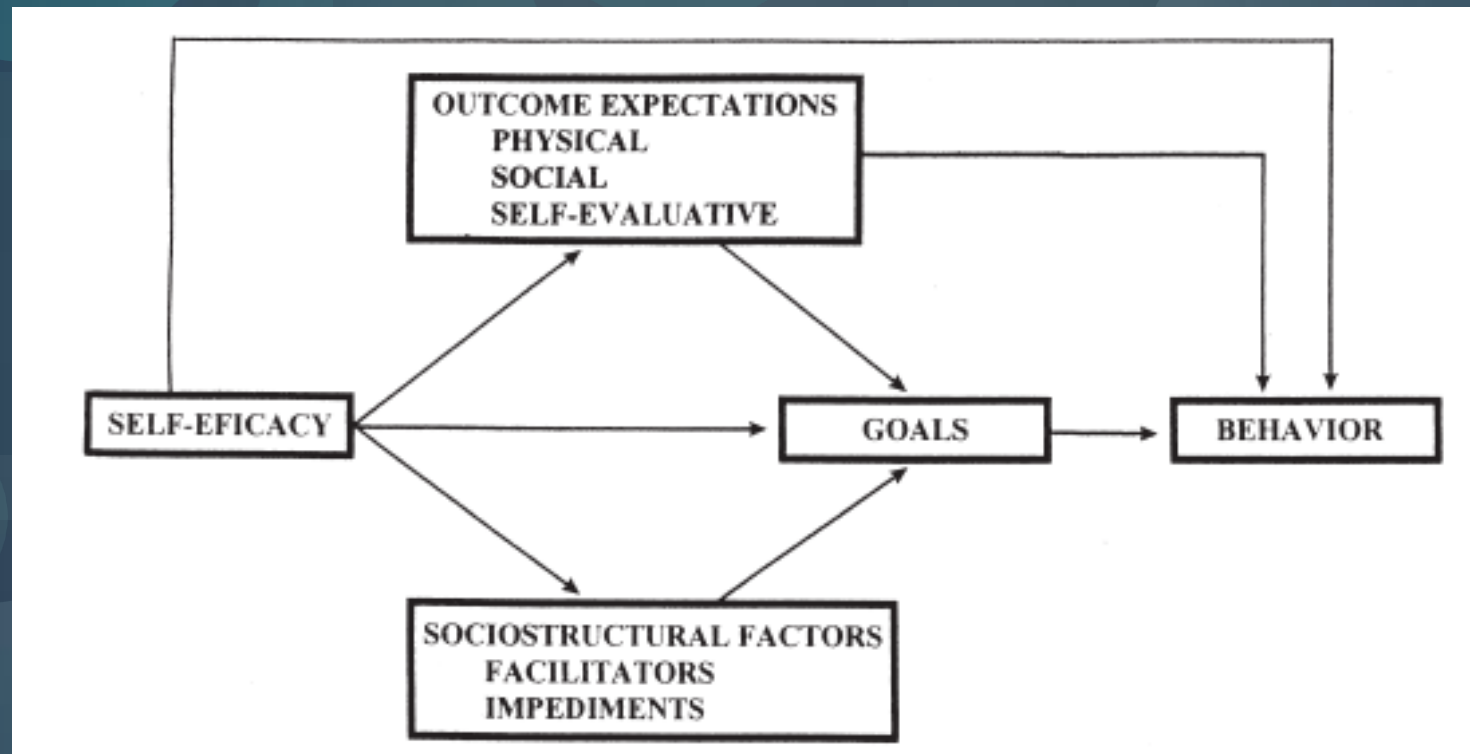
PRACTICUM THEORY RELEVANCE

Public Health Relevance

- Social and behavioral sciences
 - Important to focus health interventions with research-based evidence and social science theories and models
- Social Cognitive Theory (SCT)
- Transtheoretical Model (TTM)

Practicum Theory Relevance

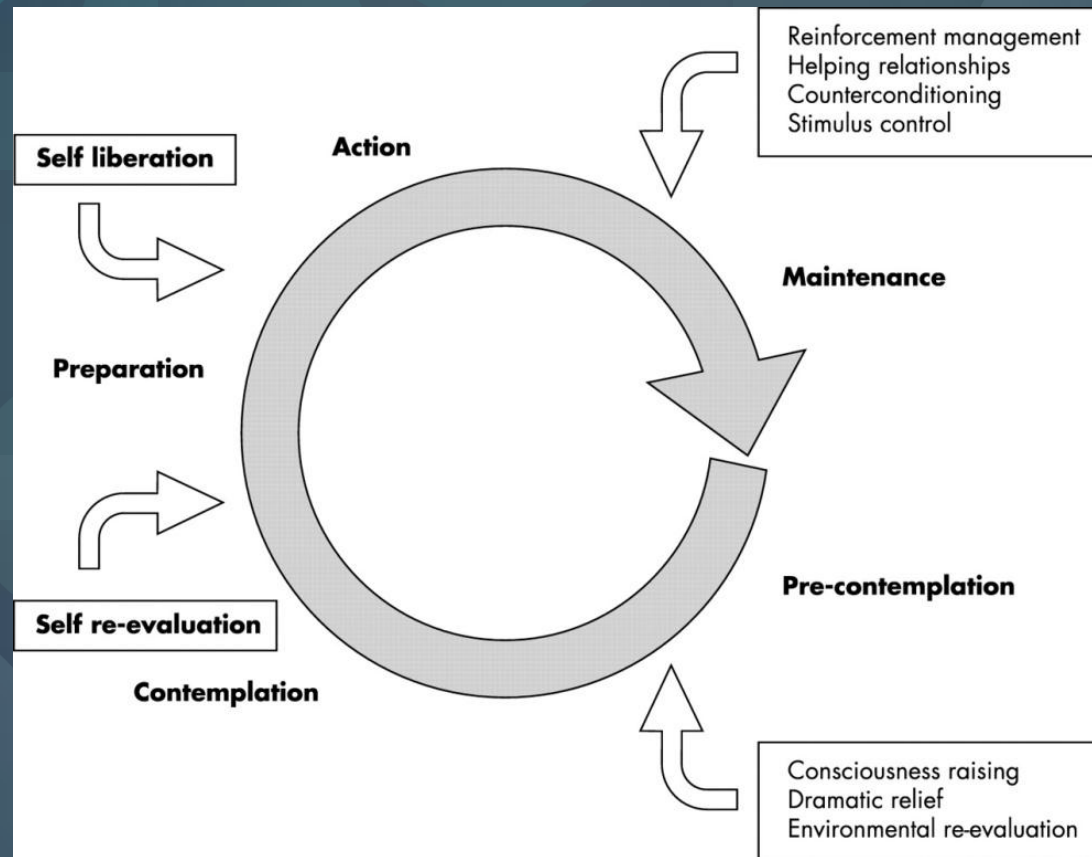
SCT



(Bandura, 2004)

Practicum Theory Application

TTM



(Adams & White, 2003)

Practicum Theory Application

- Why SCT and TTM?

- Psychological constructs

- Studies with these frameworks were more successful in the number of individuals who initiated and adopted healthier behaviors (Bartholomew, Parcel, & Kok, 1998; Blair et al., 1993; Johnson et al., 2008; Marcus, Rossi, Selby, Niaura, & Abrams., 1998; Prochaska & DiClemente, 1983; Riebe et al., 2003).

- Fit with framework of EFENP



METHODS

Participants

- **Job Corp**
 - 8 individuals at entry
 - 33% whites
 - 66% ethnic or racial minorities (i.e. African American, Hispanic, and American Indian)
 - 18-23 years of age
 - 3 completed program
- **Riley County**
 - 6 individuals at entry (1.7% response rate)
 - 50% white, 50% minority (African American)
 - 20-46 years of age
 - 4 completed program

Design and Procedures

- Summer EFNEP
 - 9 weeks
- Pre-and post-program surveys
 - Eating Right behavior checklist
 - 24-hour Food Recall
 - PA
- JC received *Instant Recess*
- Data entry



RESULTS

Eating Right Survey

- Food Resource Management (Questions 1-4)
 - **50%** (2 of 4 participants) more often planned meals in advance.
 - **20%** (1 of 5 participants) more often compared prices when shopping.
 - **0%** (0 of 4 participants) less often ran out of food before the end of the month.
 - **0%** (0 of 3 participants) more often used a list for grocery shopping.

Eating Right Survey

- Nutrition Practices (Questions 1, 7-10)
 - **50%** (2 of 4 participants) more often planned meals in advance.
 - **0%** (0 of 5 participants) more often thought about healthy food choices when deciding what to feed their family.
 - **0%** (0 of 3 participants) more often prepared foods without adding salt.
 - **40%** (2 of 5 participants) more often used the "Nutrition Facts" on food labels to make food choices.
 - **50%** (1 of 2 participants) reported that their children ate breakfast more often.

Eating Right Survey

- Food Safety Practices (Questions 5 & 6)
 - **0%** (0 of 4 participants) more often followed the recommended practices of not allowing meat and dairy foods to sit out for more than two hours. Furthermore, 0% (0 participants) ALWAYS follows the recommended practice.
 - **25%** (1 of 4 participants) more often followed the recommended practice of not thawing foods at room temperature. Furthermore, **9%** (1 participant) ALWAYS follow the recommended practice.

Eating Right Survey

- Family Meal Time (Question 11)
 - 40% (2 of 5 participants) more often ate meals and snack together as a family.

24-hour Food Recall

Summary of Dietary Changes Job Corp and Riley County Pre- and Post- Program

	Entry	Exit
Variable	M (SD)	M (SD)
Grains (oz)	6.7 (3.2)	15.0 (15.8)
Fruits (cups)	0.3 (0.4)	0.6 (0.5)
Vegetables (cups)	2.2 (1.7)	1.0 (0.5)
Milk (cups)	2.9 (0.5)	1.8 (1.3)
Meat and Beans (oz)	3.9 (3.5)	5.6 (2.6)
Total Calories	2063 (620)	2213(1053)

Physical Activity—Adults

Pre- and Post-Test Physical Activity Survey Results for Adults in Days

Variable	Pre-Survey		Post Survey	
	<i>n</i>	M (<i>SD</i>)	<i>n</i>	M (<i>SD</i>)
<i>JOB CORP</i>				
Total Activity	4	8.25 (1.25)	3	10.33 (1.52)
Mild	4	7.00 (0.00)	3	6.66 (0.57)*
Exhausting	4	1.25 (1.26)	3	3.67 (2.08)
Total Sedentary	4	3.25 (2.87)	3	3.00 (3.00)
<i>RILEY COUNTY</i>				
Total Activity	6	5.83 (2.04)	4	3.25 (0.95)
Mild	6	4.67 (1.86)	4	3.00 (0.82)*
Exhausting	6	1.17 (1.33)	4	0.25 (0.50)*
Total Sedentary	5	3.40 (1.14)	4	3.00 (0.00)

**p* value < 0.05

Physical Activity—Oldest Child

Pre- and Post- Physical Activity Survey Results for Oldest Child in Hours

Variable	Pre-Survey		Post Survey	
	<i>n</i>	M (<i>SD</i>)	<i>n</i>	M (<i>SD</i>)
<i>JOB CORP</i>				
Total Activity	4	9.75 (0.95)	2	9.50 (0.70)
Outside Play	4	3.25 (0.50)	2	3.00 (0.00)
Organized Sport	4	2.00 (1.41)	2	2.50 (2.12)
Inside Play	4	4.50 (1.00)	3	4.33 (1.15)
Total Sedentary	4	6.00 (2.58)	2	4.00 (1.41)
<i>RILEY COUNTY</i>				
Total Activity	2	8.50 (0.70)	1	8.00 (.00)
Outside Play	3	3.67 (0.58)	1	3.00 (.00)
Organized Sport	2	0.00 (0.00)	2	0.00 (0.00)
Inside Play	3	4.33 (1.15)	1	5.00 (.00)
Total Sedentary	3	8.33 (1.52)	1	8.00 (.00)*

**p* value < 0.05



DISCUSSION

EFNEP Outcomes—Dietary

- Increases in those who planned more meals, read food labels, compared prices when shopping, and ate more family meals and snack together
- Increase in grains and meats and beans food groups

Why?

- Participation: Only had to attend 7 of 9 classes
- Small classes
- Level of commitment
- Time allotted for class

EFNEP Outcomes—PA

- Group differences –Adults
 - **JC** had higher PA than **RC**
 - Decrease in PA for **RC**
- Group differences –Oldest child
 - Decrease in PA for **RC**

Why?

- Participation: Only had to attend 7 of 9 classes
- Small classes
- Level of commitment
- Time allotted for class

Theoretical Framework

EFNEP

- Precontemplation/Contemplation
 - JC versus RC
- Application of different theory constructs
 - Reinforcements
 - Problem solving
 - Goal-setting
 - Rewards

Limitations and Strengths

EFNEP Limitations

- Improved evaluation system/CRS₅
- Formative evaluation
- 24-hour food recall

EFNEP Strengths

- CRS₅
- Small class
- Learner-centered approach
- Shown to be effective multiple times

Recommendations

- EFNEP
 - Improve *Move More* component
 - Formative evaluation

Worksite Wellness & Pressure Cooking Class

- Worksite Wellness
 - Approximately 2-5 employee attended each one
 - Two different classes on Tuesdays
- Pressure cooking class
 - Pottorff Hall in CiCo Park





CONCLUSION

Public Health Magnitude

- What is Public Health?
 - “The science and art of protecting and improving the health of communities through education, promotion of healthful lifestyles, and research for disease and injury prevention.”
- Is EFNEP public health?
- K-State Research and Extension
- Application of public health



Overall Experience

- More effective at leading small groups
- Practically applied the skills from my degree my internship

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QUESTIONS

