

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

by

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Table of Contents

List of Figures	2
List of Tables	3
Acknowledgements	4
Chapter 1 – Introduction	5
Description of Program.....	5
Logic Model.....	7
Program Plan.....	9
Program Evaluation	13
Chapter 2 – Literature Review	15
EFNEP	15
Instant Recess	18
Learner-centered Education.....	19
Chapter 3 – Public Health Relevance	20
Practicum Theory Application.....	20
Public Health Magnitude	25
Chapter 4 – Program Activities.....	27
EFNEP	27
Worksite Wellness	28
Pressure Cooking Class	29
Chapter 5 – Methods.....	30
Participants.....	30
Design and Procedures.....	31
Chapter 6 – Methods.....	33
Physical Activity.....	33
Eating Right Survey.....	35
24-hour Food Recall	36
Participant Program Feedback	40
Chapter 7 – Results	42
EFNEP Outcomes	42
Theoretical Framework and EFNEP Participants	44
Limitations and Strengths: EFNEP	46
Recommendations: EFNEP	47
Worksite Wellness and Pressure Cooker Class	47
Overall Experience	48
Recommendations.....	49
References.....	52
Appendix A – EFNEP Eating Right Survey	53
Appendix B – 24-Hour Food Recall	54
Appendix C – Physical Activity Recall	55-56
Appendix D – Take 10 Breaks.....	57-61

List of Figures

Figure 1.1 Logic Model	8
Figure 3.1 Self-efficacy and SCT	22
Figure 3.2 TTM Stages	23
Figure 6.1 Post Program Dietary Habits	37
Figure 6.2 Dietary Grain Consumption	37
Figure 6.3 Dietary Fruit Consumption.....	39
Figure 6.4 Dietary Vegetable Consumption	39
Figure 6.5 Dietary Milk Consumption.....	40
Figure 6.6 Dietary Meat and Bean Consumption	40

List of Tables

Table 5.1 EFNEP Participant Baseline Data.....	30
Table 6.1 Pre-and Post-Test Physical Activity Results Adult	33
Table 6.2 Pre-and Post-Test Physical Activity Results Child.....	34
Table 6.3 Pre- and Post-Test Summary of Dietary Changes	37

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Chapter 1 - Introduction

Amongst adults and children, obesity has been on the rise in multiple countries, bringing obesity to the forefront of public health. Obesity has been shown to be correlated with multiple chronic conditions such as diabetes, cardiovascular disease, and metabolic disorders. Furthermore, those who are lower socioeconomic status (SES) and from a minority background are significantly more likely to have multiple health conditions than their higher SES and white counterparts (Tucker-Seeley, Li, Sorensen, & Sabramanian, 2011). Additionally, children and adults of low SES are more likely to be less physically active and have higher rates of obesity (Burgi, et al., 2010; Dubois & Girard, 2006; Semmler, Ascroft, van Jarrsveld, Carnell, & Wardle, 2008). Of the numerous risk factors for multiple chronic conditions, nutrition and physical activity have been shown to reduce the effects of obesity and its related co-morbidities (e.g., diabetes). One way to curb obesity and its related co-morbidities is by providing education and skill training on proper eating and how to engage in more physical activity. Consequently, this paper will focus primarily on the Expanded Food and Nutrition Education Program implemented during my internship with K-State Research and Extension (KSRE). Additionally, my other activities completed during my internship will be discussed, including worksite wellness and community programs.

Description of Program

Currently, Kansas offers the Family Nutrition Program (FNP), Women, Infants, and Children (WIC), the Expanded Food and Nutrition Education Program (EFNEP), and 4-H Youth Programs as resources to aid individuals who are low-income, lower-SES and have limited resources. EFNEP is of particular interest because of the type of assistance offered. EFNEP,

offered through KSRE is 9 Kansas counties, is conducted within a group setting or as a one-on-one service with clients and offers not only education classes but teaches the behavioral skills necessary to adopt healthier lifestyles. The program's goals are to provide practical lessons to young families and youth on nutrition, how to become more physically active, and how to use available support systems within their community. Specifically, the objectives of EFNEP are to improve the diets and nutritional welfare of the family, as well as to educate families on the critical elements of nutrition, how to choose and buy food that meets nutritional requirements, how to improve food handling and safety, and how to effectively manage a food budget. Furthermore, EFNEP is designed to target low-income families with children with limited resources. Participants involved in the program receive a completion certificate that they can use on a resume as job skill training.

EFNEP objectives specifically target those who have economic hardships, i.e. less access to health care, less money to purchase food, less income, inadequate housing, and less social support (Mayer & Jencks, 1989). These individuals tend to be lower-SES and from an ethnic minority group. With these objectives in mind, EFNEP indirectly targets individuals at increased risk factors for multiple chronic conditions by specifically addressing those with limited resources, nutrition and physical activity within the program.

There is a need for this type of program within Kansas because over 18% have low income (100-199% below federal poverty level) and over 13% of Kansans are in poverty (U.S. Census Bureau, 2010). The 2009 federal poverty level was \$22,050 for a family of four. Of those who participated in Kansas EFNEP during Fiscal Year (FY) 2010, 53% were at or below 100% poverty level and 29% were non-White. Altogether, over 1,300 Kansas families with over 2,000 children participated in EFNEP in FY 2010 (Procter, 2011). Of those who completed the

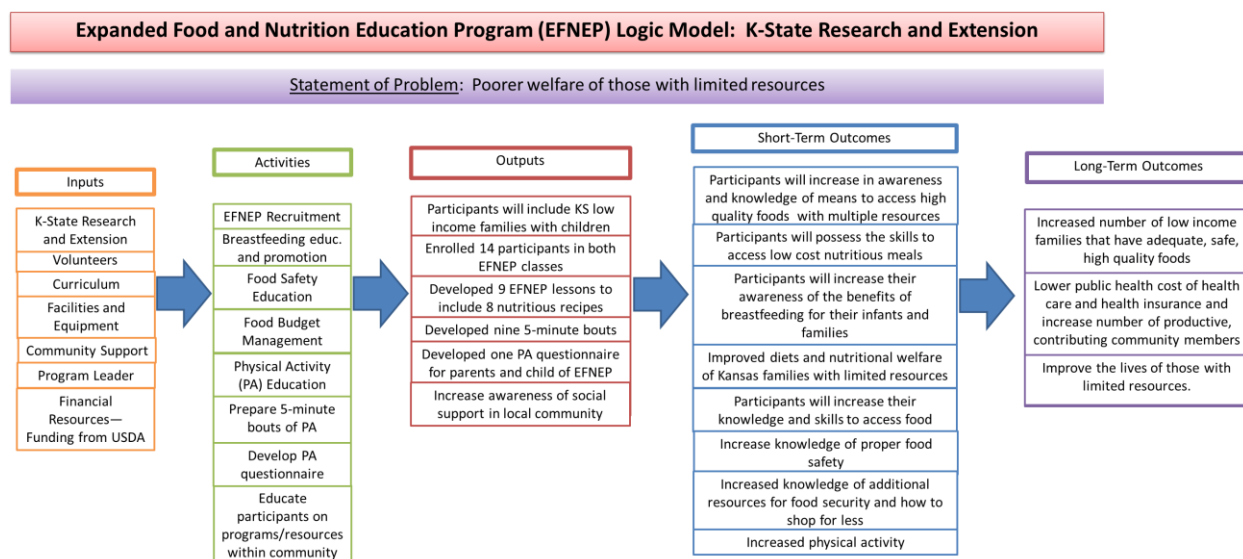
series of EFNEP lessons, program evaluation data for Kansas participants showed improvements in food resource management (planning meals, comparing prices, use of grocery list), nutrition practices (making healthy food choices, using less salt, reading nutrition labels, and eating meals with children), food safety practices (thawing and storing foods properly) and physical activity (Procter). In Kansas, EFNEP has been shown to improve the knowledge and skills of those who participated.

The purpose of this paper is to examine how Riley County EFNEP aids the community in improving nutrition practices and physical activity of the adults and youth of lower-SEs with limited resources. Specifically, this paper will discuss Riley County EFNEP activities, evaluation of nutrition and physical activity from two different EFNEP groups, and results from the program. This paper will also discuss the addition of an enhanced physical activity component to the Riley County EFNEP curriculum. The final objectives of this paper are to discuss my practicum activities including worksite wellness and additional nutrition education classes, as well as to relate all of my practicum activities to public health.

Logic Model

For my practicum specifically, the goals and objectives of EFNEP include effective implementation of EFNEP lessons, creating an enhanced physical activity component, and an evaluation of two different groups within EFNEP. Figure 1 illustrates the logic model designed for EFNEP and outlines the progression of the program that addresses the goal of improving the lives and health of individuals with limited resources.

Figure 1: Logic Model



The inputs necessary to implement this program include existing resources (KSRE, EFNEP curricula, and funding from USDA), volunteers, a facility to run group sessions, community involvement and a program leader. Currently, Riley County KSRE offers EFNEP classes to area individuals and young mothers at the Flint Hills Job Corps, Manhattan, KS. In an effort to obtain maximum participation within the Job Corps and Riley County, EFNEP flyers were posted around the community in areas which target not only the population of interest. Additionally, postcards were mailed to WIC participants and phone calls were made to local community facilities. Other important activities includes adapting the curriculum based on the needs of EFNEP participants, developing the enhanced physical activity component, and acquiring additional resources to augment the program such as pedometers and educational bulletins. Pedometers provide a means to track physical activity and can aid in changing behavior (Bravata et al., 2007). Additionally, educational bulletins provide a place for participants to find quick facts on nutrition and physical activity and a place to write down goals and track progress. After the inputs and activities have been completed, outputs can be tracked.

Effective recruitment will produce participants from low income families with limited resources. Lessons will be developed and implemented throughout the nine weeks to ensure success of short-term outcomes. Short-term outcomes include increased awareness and knowledge of access to higher quality foods, food safety, and food security, increased knowledge of breastfeeding, improved diets and nutritional welfare, and increased physical activity. Overall, the goal is to produce more productive healthy citizens by improving the nutrition of those with limited resources and through increasing access to adequate, safe, and high quality foods.

Program Plan

As mentioned previously, obesity is a prominent public health concern. Improving nutrition and physical activity through educational programs helps reduce the risk factors for obesity as well as other chronic health conditions. For my practicum, I implemented the Riley County EFNEP curriculum as well as an additional physical activity component. The curriculum for Riley County EFNEP was adapted from North Carolina Cooperative Extension. Current EFNEP lessons included:

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

Each lesson was approximately 60 minutes in length and included handouts related to the curriculum (e.g. physical activity plans, food pyramid handouts, exercise tips) and a nutritious recipe (prepared during class) each week. Riley County EFNEP offered nine weeks of classes

that met one night a week. Since there are over 20 lessons, many of the lessons were combined into one weekly session. For this practicum, 16 lessons were covered over the course of 9 weeks:

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

Each week I taught a lesson on how to cook a healthy, nutritious food item which corresponds with the topic of that week. Next, I incorporated and implemented a physical activity component. Riley County EFNEP curriculum includes *Move More* breaks during the lesson as the physical activity component. However, with the aim of making these groups more robust than the *Move More* component, *Instant Recess* was implemented. Dr. Toni Yancey developed *Instant Recess* with the goal of getting America moving; appropriate for individuals of any culture or demographic (Yancey, 2010). *Instant Recess* breaks are 10-minute bouts of physical activity which include music, dance, and traditional body weight exercises. Due to the time allowed for each weekly session, only 5-minute bouts of *Instant Recess* breaks were

performed. These 5-minute breaks are a shortened version of physical activity and participants were taught how to increase these to meet the recommendations of 10-minute bouts.

Additionally, participants received instructions and tips on how to incorporate *Instant Recess* breaks throughout their day, not only for themselves, but also with their children and families.

The timeline below outlines the nine different *Instant Recess* breaks and additional physical activity skills not traditionally taught within the EFNEP curriculum:

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

During these *Instant Recess* breaks, participants performed exercise in everyday attire along with DVDs, music, and led by me. There were standard DVDs of *Instant Recess*, however, I incorporated and developed my own 5-minute bout of *Instant Recess* for the weeks dealing with children, the office, and sports.

Lastly, there were two different EFNEP programs implemented simultaneously but in different locations: Flint Hills Job Corps (Manhattan, KS) and Riley County. These programs differed in the *Move More* component in that Job Corps received the enhanced physical activity component *Instant Recess* and Riley County received the traditional curriculum. The

participants from Flint Hills Job Corps consisted of low-income, young females (16 or older) who are completing their high school diploma or general education diploma (GED) and are receiving job training. Flint Hills Job Corps consist of a campus of young adults, both male and female, who live and remain on campus until their training is complete. There are various types of career training opportunities at Job Corps to include carpentry, cement masonry, construction craft laborer, culinary arts, facility maintenance technology, health occupations, plumbing, and security/law enforcement. Those who participated in EFNEP at Job Corps were women from the single-parent dormitory. Within this dormitory, mothers live with their children in their rooms and each family shares a kitchen with those who live within their hall. Participants from Riley County have earned their high school diploma or GED but are also low-income WIC participants. Traditionally, the Riley County groups are more educated and older than the participants from Flint Hills Job Corps.

Program Evaluation

Evaluation of Riley County EFNEP was done pre- and post-program through three different surveys: EFNEP Eating Right Survey (Appendix A); 24-hour Food Recall (Appendix B); and Physical Activity Survey for Adults and Children (Appendix C). The Eating Right Survey was a behavior checklist which discussed how parents plan and fix foods for their families and the 24-hour Food Recall examined the previous day's food intake. Both the Eating Right Survey and 24-hour Food Recall were traditional surveys for the EFNEP program and were inputted into the County Reporting System version 5 (CRS5). Because the 24-hour Food Recall survey asked only one question about physical activity (Activity Level: Less than 30 minutes, 30-60 minutes, more than 60 minutes) for the parent only, another survey (Physical

Activity Survey for Adults and Children) was created that specifically discussed the different types of activities not only for the parent but also for their oldest child.

The CRS5 was used to assess changes in nutrition practices and physical activity. Because there was only one question on physical activity provided by the traditional EFNEP survey, the survey I created for physical activity was used to assess different types of physical activity (mild versus exhausting). The survey I created was a modified version of evaluation surveys from the HOP’N After-School Project and from SPARK, a research-based public health organization that implements and evaluates wellness programs such as physical activity. (Dzewaltowski et al., 2010; Sallis, 2011). Additionally, a comparison between Job Corps and Riley County outcomes was computed to see if there was a difference between the *Instant Recess* component and the traditional EFNEP *Move More* curriculum for changes in physical activity levels.

Chapter 2 - Literature Review

The aforementioned goals and objectives (to teach EFNEP, worksite wellness, and nutrition education class) of this practicum are products of evidence-based research. The following literature review will take a more in-depth look at how EFNEP serves the community by helping improve the overall health of adults and youth with limited resources. Additionally, further evidence will be examined on Toni Yancey's *Instant Recess*. Lastly, the transtheoretical model (TTM) and the social-cognitive theory (SCT) will be discussed as a means to explain the behavior changes that take place within EFNEP and worksite wellness.

EFNEP

The following literature review will examine various studies indicating the effectiveness and cost-benefit of this community program. As mentioned previously, EFNEP uses the CRS5 to report the demographic and behavior change data amongst counties and states. This allows for assessment of EFNEP and for data to be analyzed and reported at multiple levels (i.e., national, state, and county). Because all data from the EFNEP surveys are required to be entered through Extension offices, the programs are not conducted as randomized control trials or as experiments altogether. The United States Department of Agriculture (USDA) analyzes and tracks participant behavior changes through their current evaluation system. Thus, we are able to see behavior changes on nutrition practices and physical activity.

The Eating Right Survey (Appendix A) assessed behavior on a categorical scale: 0 = not applicable; 1 = do not do; 2 = seldom; 3 = sometimes; 4 = most of the time; and 5 = almost always. Data are displayed in percentages of improvements when an EFNEP participant makes a positive change from one or more categories. For example, on a pretest one participant selected “non applicable” to using a grocery list and another person selected “do not do” on their pretest.

On the posttest both participants selected a different category; one moved from “non applicable” to “sometimes” and the other moved from “do not do” to “most of the time.” Both participants contributed to the overall increase with this behavior (using a grocery list) regardless of which category they chose because the CRS5 saw any change to the right as improvement.

The following data discuss national level behavior changes as indicated by the Eating Right Survey and the 24-hour Food Recall (Appendix B). In 2010, national EFNEP data reported for adults showed improvement in at diets (92%), improvement in nutrition practices (88%), improvement resource management skills (83%), improvement in food safety practices (66%), and improvement in physical activity (40%) (USDA, 2010). Additionally, 2009 and 2010 national data for EFNEP for adults indicated a 94% positive change in one or more food groups with the 24-hour food recall survey and a 28% positive change in physical activity (USDA, 2009). In 2009 and 2010, the Eating Right Survey showed improvements in food resource management practice (>83%), nutrition practice (>88%), and food safety practice (67%). More specifically, data from Kansas in 2010 showed an 87% improvement in food resource management, 95% improvement in nutrition practices, and 43% increase in physical activity (Procter, 2011). Thus, it was clear that EFNEP is an effective program for improving nutrition practices and physical activity. These increases have public health implications, improving the quality of life of those who participated with the overall goals of improving health.

Research-based interventions have also demonstrated the effectiveness of EFNEP. Some have examined the effectiveness of EFNEP using a modified curriculum and/or multiple theories to promote the targeted behavior changes. Cullen et al. (2010) used the SCT constructs and goal attainment as a supplemental approach to EFNEP’s curricula and learner-centered theory. The

results indicated greater improvements in self-efficacy nutrition practices when more goals were attained. Additionally, Cullen et al. (2009) evaluated and conducted a randomized control trial of modified EFNEP curriculum and found that EFNEP made a significant impact on family diets with improvements in dietary behaviors through decreased energy intake and an increase in vegetables and fiber consumption. Furthermore, this study demonstrated improvements in parent feeding skills (menu planning, limiting snacks, availability of fruits and vegetables, food preparation and a reduction in body mass index; BMI). Altogether, the research indicated how EFNEP had an impact on the obesity epidemic and multiple chronic diseases by showing improvements in nutrition practices, physical activity, and self-efficacy.

Another research-based intervention used EFNEP curriculum to help guide their program and found positive results. Boyd and Windsor (2003) conducted a formative evaluation of the Partners for Life Program that was created from EFNEP curriculum. The Partners for Life Program was designed for pregnant women and consisted of 8 essential topics: 1) maternal and infant nutrition; 2) health problems and solutions; 3) eating healthy and healthy baby; 4) how to make decisions; 5) saving for mothers and baby; 6) food, friends, and fun; 7) caring for the baby; and 8) preparation for delivery. Each topic was designed to be 60 minutes in length and conducted inside the client's home. The study showed significant improvements in nutrition competencies and dietary behavior.

Not only has EFNEP been shown over the years to be a successful program to improve health behaviors, but also to be a cost-effective program. The state of Virginia conducted a cost-benefit analysis on their EFNEP program and found a healthcare savings of \$10 per every \$1 spent on EFNEP (Radhika, Cox, Lambur, & Lewis, 2002). Oregon EFNEP also adopted the Virginia cost-benefit analysis and found a \$3.63 savings in healthcare for every \$1 spent on

EFNEP (Schuster et al., 2003). Burney and Haughton (2002) conducted a prospective, quasi-experimental study on the cost-effectiveness of EFNEP in Tennessee. This study found positive results for EFNEP participants and showed a savings of \$124 to \$234 per household on a yearly basis with an average savings of \$10-\$20/monthly on grocery bills. As well, the study showed increased intake of iron, vitamin C, vitamin B-6, and fiber (Burney & Haughton). Lastly, the New York EFNEP took a slightly different approach to their economic evaluation of the program and took a look at cost-effectiveness and quality adjusted life years (QALY). The results from this study found a cost-effectiveness ratio of \$20,871 per QALY saved (Dollahite, Kenkel, & Thompson, 2008).

Instant Recess

Toni Yancey designed *Instant Recess*, 10-minute bouts of physical activity, and research has shown the positive benefits linked to incremental short bouts of physical activity. For example, short bouts of exercise of at least 10 minutes have been shown to decrease weight, BMI, and waist circumference (Lara et al., 2008). These decreases in body measurements may also lead to a decreased risk for chronic diseases. Yancey (2004) found that adults that who participated in 10-minute bouts of exercise gained a higher self-perception of actual health and fitness. When individuals had a higher self-perception of fitness, this may motivate them to become more physically active (Barr-Anderson, AuYoung, White-Glover, Glen, & Yancey, 2011; Yancey et al., 2004). For children, studies have shown how activity breaks are one of the most effective ways to increase physical activity (Barr-Anderson, AuYoung, White-Glover, Glen, & Yancey; Donnelly, et al., 2009; Salmon, Booth, Phongsavan, Murphy, & Timperio, 2007). Raising awareness of physical activity has potential to put an individual into

contemplation of their current behavior and this is part of the transtheoretical model (TTM), which is discussed below.

Learner-centered Education

Learner-centered methodology was the guiding framework for the EFNEP lessons. This methodology focused on the interests and needs of the learner and often used a problem-based approach where learners were actively involved. The problem-driven approach and authenticity of real life situations allowed learners to seek out the skills and tasks they would naturally use (Gunderman, Williamson, Frank, Heitkamp, & Kipfer, 2003; Stanley & Dougherty, 2010; Norman & Spohrer, 1996). The learner-centered approach has been specifically shown to be effective in increasing fruit and vegetable nutrition and helped to retain positive health behavior changes in WIC participants (Gerstein et al., 2010). Allowing the learner to do at least 50% of the talking and the educator to predominately listen created an atmosphere of mutual respect and allowed everyone to share past experiences and ideas.

Chapter 3 - PUBLIC HEALTH RELEVANCE

Practicum Theory Application

One way to help address the issue of poor nutrition and lower physical activity is through interventions that use a behavior-change theory or model. Social and behavioral sciences, a public health core competency area, involves the understanding of how behavioral, social and cultural factors have an influence on health outcomes. It is also important to know how to focus health interventions with research-based evidence and social science theories and models. The social cognitive theory (SCT) and the Transtheoretical Model (TTM) are two types of behavior frameworks which have been used in multiple interventions targeting health behaviors including poor nutrition and physical activity. Since the EFNEP curriculum has been previously proved effective through both research and program evaluation, I did not specifically incorporate any additional theoretical constructs. Instead, I used the SCT and TTM during my internship to understand participants better and to explain why or why not they had changes in behavior.

The major constructs of the SCT are self-efficacy, environment, self-control, observational learning, and reinforcements (Bandura, 1996). Self-efficacy is the “belief in one’s capabilities to organize and execute courses of action required to produce given attainments” (Bandura, 1996). The environment and observational learning through watching others are integral to this theory because these constructs shape behaviors. Self-control involves decision-making, self-monitoring, goal-setting, self-rewards and problem solving. Reinforcements are ways an individual responds to a certain behavior that can increase or decrease its likelihood. Overall, SCT is useful because it can explain multi-level influences on behavior. Self-efficacy is also a construct that has been studied multiple times and it is a variable researchers know how to manipulate. When it comes to health promotion, the SCT identifies core determinants and

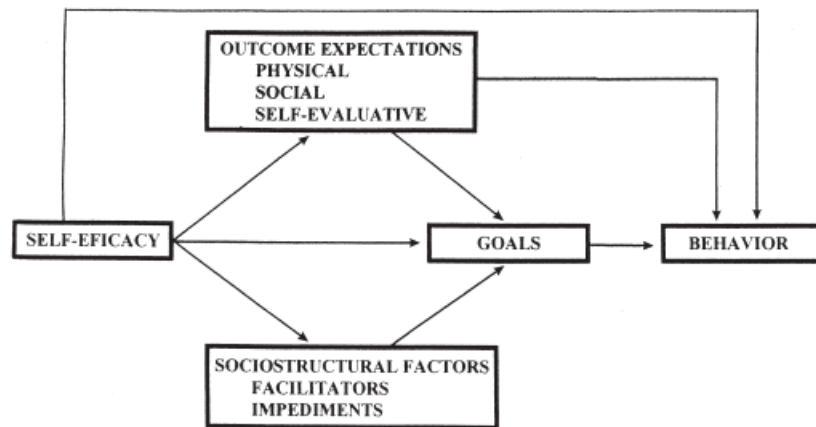
mechanisms through which to promote behavior change (Bandura, 2004). Those determinants and mechanisms are:

- Knowledge of health risks and benefits
- Perceived self-efficacy
- Outcome expectations
- Health goals
- Perceived facilitators
- Social and structural impediments

The above aspects of the SCT all play a role in how an individual changes a behavior. When individuals lack knowledge of how their behavior affects their health, behavior change is less likely to occur. Next, when individuals believe they have the power to change (perceived self-efficacy) and overcome an unhealthy behavior, they are more likely to change. Furthermore, outcome expectations play a role in behavior change because individuals are less likely to act in a way that does not give them satisfaction. Setting health goals and being surrounded by people who can help and encourage positive behavior change aids in a healthy behavior change. Lastly, SCT states that there are multiple social and structural obstacles such as multiple fast food restaurants and less access to places to be physically active that can further impede a healthy behavior change. Overall, Bandura (2004) states that self-efficacy is the primary determinant of behavior change because it directly influences healthy behavior and has an influence on the other determinants of the SCT. Figure 3.1 below illustrates how self-efficacy influences the various determinants and mechanisms of the SCT (Bandura, 2004).

Figure 3.1

Self-efficacy and SCT



(Bandura, 2004).

The transtheoretical model (TTM) proposes that no single theory can account for behavior change and that behavior change occurs through stages (Prochaska & Velicer, 1997).

These six stages are:

- Precontemplation: No intention to take action in the future.
- Contemplation: Individuals begin to think about changing behavior within six months.
- Preparation: Intends to take action in the immediate future, usually measured as the next month.
- Action: Individuals have made specific overt change in their lifestyle within the past six months.
- Maintenance: Maintain a healthy lifestyle for over six months and work to prevent relapse.
- Termination: No temptation to return to unhealthy behavior & complete self-efficacy.

Next, the TTM proposes individuals pass through processes of change that aid in progression through the six stages: 1) conscious raising, 2) dramatic relief, 3) self-reevaluation, 4) environmental reevaluation, 5) self-liberation, 6) counter conditioning, 7) stimulus control, 8)

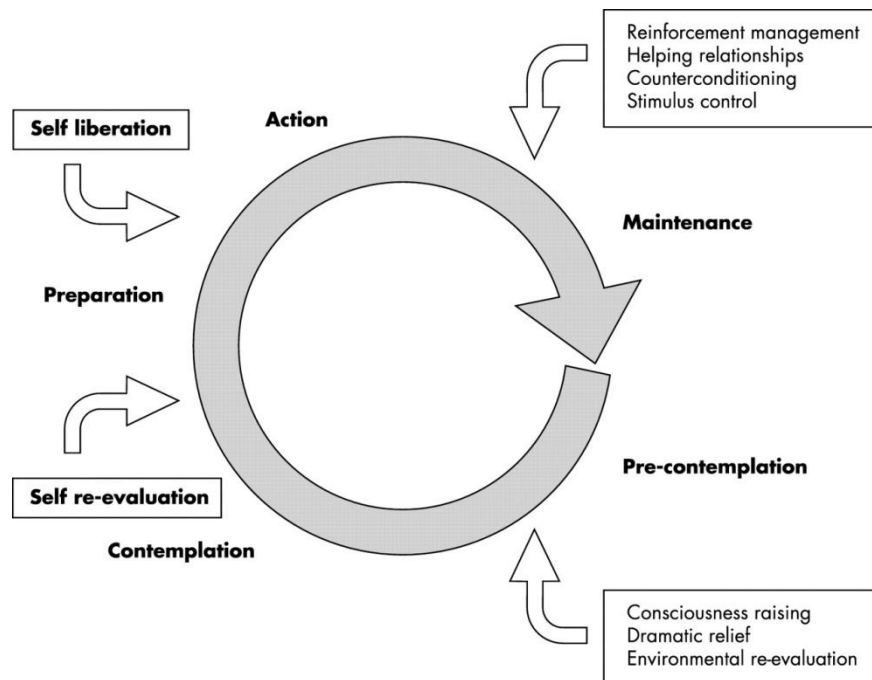
social liberation 9) reinforcement management, and 10) helping relationships (Prochaska, 1979; DiClemente & Prochaska, 1983). Below are the processes of change:

- Conscious raising: Individuals increase their knowledge on a healthy behavior.
- Dramatic relief: Individuals are moved emotionally towards a healthy behavior.
- Environmental reevaluation: Individuals understand how their behaviors affect others.
- Self-reevaluation: An individual's self-concept.
- Self-liberation: Individuals make a commitment to change a particular behavior.
- Counter conditioning: Individuals replace unhealthy behaviors with healthy behaviors.
- Stimulus control: Individuals remove cues for unhealthy behaviors and surround themselves with cues for healthy behaviors.
- Social liberation: Individuals begin to understand how social norms support healthy behavior.
- Reinforcement management: Individuals reward themselves for positive behaviors.
- Helping relationships: Individuals use social support for behavior change

Figure 3.2 below illustrates the different process of changes used while passing through the various stages (Adams & White, 2003).

Figure 3.2

TTM Stages



(Adams & White, 2003)

Besides stages of change and process of change, there are three additional constructs pertinent to the TTM:

- Decisional balance: weighing of pros and cons,
- Self-efficacy: people have confidence they can cope with the behavior change, and
- Temptation: urges to engage in unhealthy behavior.

What is unique about the TTM is that it allows researchers to assess individuals at different stages of change and to manipulate the process of change in each stage within an intervention (Prochaska & Velicer, 1997). Understanding what stage an individual is in helps professionals to know how to approach people.

The SCT and TTM facilitate the use of mental and behavioral skills (e.g., problem solving, goal-setting, cognitive thought stopping and reframing) to increase healthy behaviors. Physical activity interventions and other behavior change interventions that have had these

psychological constructs (i.e., motivational readiness, process of change, helping individuals improve self-efficacy, decisional balance theory, and relapse prevention) 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). These two approaches to behavior change were the most appropriate to use during my practicum because they fit with the frameworks of EFNEP.

Public Health Magnitude

As stated above, EFNEP has been shown multiple times to be an effective program for positive behavior change with nutrition practices and physical activity. My practicum responsibilities of teaching *Take 10* and nutrition education classes were targeted to increase a positive healthy behavior changes in program participants. These programs and classes have been shown to improve nutrition and physical activity behaviors for those who participate. The public health goals for EFNEP with improved food resource management practices (planning meals, comparing prices, using grocery lists), nutrition practices (making healthy food choices, preparing foods without adding salt, reading nutrition labels, eating breakfast with family), food safety practices (thawing and storing foods safely) and increased physical activity are healthier individuals and families who are less likely to suffer from chronic diseases such as heart disease, type 2 diabetes, and obesity. Regarding *Take 10* and nutrition education classes, there are similar public health goals for participants to gain awareness of current health and nutrition behaviors. Increased awareness initiates the process of behavior change according to the TTM and these additional programs provide the opportunity for individuals to learn and practice healthy behaviors.

Throughout my internship, I was exposed to different public health competencies (social and behavioral sciences and program planning) and I applied knowledge from the social and behavioral sciences to change health behaviors. I was exposed to multiple cultures, age groups, and ethnicities through the different programs I was responsible for. The knowledge I gained through my Master of Public Health degree prepared me for this practicum. Through my experiences as a public health student, I learned different theories and models for social and behavioral interventions and was able to apply them to lesson plans and teaching style in my practicum. For example, I used goal-setting, problem solving, time management, and decisional balance throughout all of the EFNEP educational classes, incorporating the SCT and TTM.

Program planning was another skill of public health that I was able to apply during my practicum. EFNEP is a program which has been well established. However, I added in a physical activity program, *Instant Recess*, to EFNEP classes and for Riley County worksite wellness. In conjunction with program planning, EFNEP further exposed to me collecting, managing and organizing data from the different surveys. Through these analyses, I was able to effectively communicate with my practicum site the changes in behavior post program.

Chapter 4 - PROGRAM ACTIVITIES

EFNEP

Most of my time was spent working with EFNEP, therefore; most of my activities were consumed with recruitment, preparing lesson plans, delivering the lessons, and entering in EFNEP data. Before the program began, I started recruitment within the community for the Riley County EFNEP class. The primary means of recruitment was through WIC, facilitated by the Riley County Health Department. Each week a WIC roster of new enrolled clients was sent to Riley County K-State Research and Extension (KSRE). Each client from WIC was contacted via a postcard and phone call. For additional recruitment, flyers were posted around the community such as the Flint Hills Community Clinic, Salvation Army, the K-State Center for Child Development, Head Start, and other locations.

A relationship was established between the Flint Hills Job Corps and KSRE in the fall of 2006 because the director of the single parent dormitory was concerned about the ability of the mothers to provide meals to their children on evenings and weekends. Key leaders within KSRE and Job Corps met and discussed details of EFNEP and what would be required to conduct the program. In the spring of 2007, the first EFNEP class was held on the campus. Therefore, no additional recruitment efforts were necessary for the Flint Hills Job Corps EFNEP class other than simply calling and scheduling a time which worked for the women.

Lesson planning consisted of using the curriculum already in place for Riley County EFNEP and combining the lessons to fit within nine weeks. For example, two lessons were combined for lesson one: Introduction to EFNEP and My Pyramid. The goal of lesson planning was to combine common themes amongst lessons and to develop a time line in order to effectively cover the necessary content. In addition to the traditional EFNEP lessons, I utilized

the *Instant Recess* physical activity breaks. I adapted each *Instant Recess* break through my experience as a personal fitness trainer and Toni Yancey's DVDs were utilized as a framework.

Once lesson plans were developed, I prepared for each lesson by organizing the materials for each class. I also chose, planned, and shopped a healthy recipe for EFNEP participants to prepare and sample for each week such as fruit salad, BBQ kale, lasagna, chicken quesadillas, and broccoli blueberry smoothie. During classes, participants were given appropriate handouts and recipes. Class began with a summary of the prior week's discussion and addressed any unanswered questions. Throughout the lesson, the group participated in making a recipe by helping prepare and cook the food. Certain lessons required preparing food ahead of class in order to ensure all EFNEP material would be covered and because some recipes took longer to cook.

My mentor had me read *Child of Mine: Feeding with Love and Good Sense* by Ellyn Satter (2000) to use as a guide on how to handle feeding infants and children. *Child of Mine* was research-based and offered advice on emotional, cultural, and genetic ways of eating. This book was also an introduction on how to breast-feed, when to start feeding infants solids, and also educated parents about how to get a reluctant child to eat.

My last responsibility with EFNEP dealt with entering in the data from each survey. As mentioned earlier, CRS5 was the program utilized for the 24-hour Food Recall and the Eating Right Survey. Data from the additional Physical Activity survey was entered and analyzed with SPSS version 17. Altogether, I led four different EFNEP groups and results from the August to December groups were not discussed in this report due to time constraints and completion of internship.

Worksite Wellness

The second major function that I was responsible for during my internship was with worksite wellness, *Take 10*, amongst the Riley County Extension Offices. As directed through my mentor, I read Toni Yancey's *Instant Recess* and used this as a reference for developing a physical activity program similar to the one set forth in the EFNEP classes. Classes were set to be conducted each Tuesday during the lunch hour (12:00 and 12:30) and designed to be ten-minutes in length. The first set of classes consisted of using the DVDs already established with *Instant Recess*. In addition, I developed three *Take 10* (Appendix D) breaks based off my experience as a personal trainer in order to expose workers to different types of physical activity and keep them interested.

Pressure Cooking Class

KSRE was responsible for reaching out to the community and for providing resources for public needs such as nutritional classes. Various nutrition classes were given throughout the year to include food preservation (i.e. how to can food, make pickled products, how to make your own jelly and jams, and make your own garden). I was specifically responsible for providing an educational class for Riley County on how to use a pressure cooker. Early on in my internship I attended a pressure cooking training, targeted towards EFNEP educators, that specifically explained the different parts of a pressure cooker, how to use a pressure cooker, where to find pressure cookers, and a practical application of the pressure by preparing three different recipes. This instructional class was a combination of lecture and hands on activities. Participants cooked three different recipes with the pressure cooker in order to further reinforce concepts taught during the lecture.

Chapter 5 - METHODS

Participants

Approximately 350 individuals were contacted via email, postcard, or phone call for the Riley County EFNEP class. Participants from Flint Hills Job Corps consisted of nine single-parent females. However, only six residents from Riley County enrolled (1.7% response rate). Thirty-three percent of participants (n =3) from Job Corps were whites and 66% (n=6) were ethnic or racial minorities (i.e. African American, Hispanic, and American Indian); all were between the ages of 18-23. Riley County participants were 50% white and 50% minority (African American) and were between the ages of 20-46. Participants from Job Corps predominately were less educated and received more types of food assistance than those from the Riley County group. Table 1 below provides a more detailed description of participants.

Table 5.1.

EFNEP Participant Baseline Data

Characteristic	Flint Hills Job Corps	Riley County
Race and Ethnicity		
White	3	3
Black or African American	2	3
American Indian or Alaskan Native	1	0
Asian	0	0
Hispanic or Latino	1	0
Two or More/Other	2	0
Age Range		
15-20	4	1
21-25	5	2
26-30	0	2
31-35	0	0
36-40	0	0
41-45	0	1
46-50	0	0
Education		
High School Diploma or GED	2	2
Some College	2	1
2-year College	0	1

4-year College	0	1
N/A	6	1
Pregnant		
Yes	0	1
No	9	5
Nursing		
Yes	0	5
No	9	1
Number of Children		
0	1	2
1	7	3
2 or more	1	1
Gender		
Male	0	1
Female	9	5
Food Assistance		
WIC	4	6
TANF	4	0
Child Nutrition	0	1
Food Stamps	7	1
Head Start	1	1
Temporary Emergency Foods	1	0

Design and Procedures

The summer Riley County EFNEP classes began June 22, 2011 for Job Corps and June 23, 2011 for Riley County and ran for approximately nine weeks. Participants completed all surveys pre-and post- program. Both groups completed the Physical Activity Recall (Appendix C) but only Flint Hills Job Corps received the additional *Instant Recess* physical activity content. The Physical Activity Recall queried time parents spent on moderate and vigorous activity and time the oldest child spent watching TV, playing video games, playing outside, participating in organized sports, and playing inside. In addition to the types of activities parents were performing, six other qualitative questions about work and time in front of TV/computer were developed to gain further insight into their physical activity levels. The goal of adding a more robust physical activity component with *Instant Recess* was to see if there was a more significant increase in physical activity when compared to the traditional *Move More* component of EFNEP.

As mentioned previously, I collected standard EFNEP data through the EFNEP Eating Right Survey (Appendix A) and the EFNEP 24-hour food recall (Appendix B). The Eating Right Survey consisted of ten questions pertaining to meal preparation, how they spent their money when food shopping, and eating habits for the entire family. Next, the 24- hour food recall asks additional questions such as the amount spent on food, activity level, and if participants were taking nutrition supplements. The food recall is used to see the types and quantities of food consumed throughout the day.

Chapter 6 - Results

Physical Activity

Baseline characteristics of EFNEP participants are presented above in Table 5.1. Tables 6.1 and 6.2 present data on pre- and posttest physical activity from the Physical Activity Survey for Adults and Children (Appendix C). Changes in physical activity behavior for adults in Job Corps showed increased days of total activity and exhausting exercise and decreased mild exercise (for at least 30 minutes a day) and decreased daily hours of sedentary behaviors over a seven day period. However, the decrease in mild exercise was the only behavior change that was statistically significant, $t = 1.195$, $p < 0.05$. Changes in physical activity for Riley County included decreased days of total, mild, and exhausting physical activity, as well as decreased hours per day of sedentary behaviors. The decreases in mild and exhausting exercises were both statistically significant at $t = 1.661$, $p = 0.004$ and $t = 1.297$, $p = 0.006$, respectively. Data from the 24-hour Food Recall (Appendix B) also showed an increase in physical activity of 28.6%; of those who completed the program, one individual from Job Corps changed categories from less than 30 minutes to 30 to 60 minutes a day. There was no change for individuals whose activity level was <30 minutes a day.

Table 6.1

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

Pre-Survey			Post Survey	
Variable	<i>n</i>	M (<i>SD</i>)	<i>n</i>	M (<i>SD</i>)
<i>JOB CORPS</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 for the oldest child did not change significantly from pre-test to posttest for either group (Table 6.2). However, a statistically significant decrease was seen in total child sedentary behavior in hours per day for Riley County, $t = 2.58$, $p = 0.020$.

Table 6.2

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

Pre-Survey			Post Survey	
Variable	<i>n</i>	M (<i>SD</i>)	<i>n</i>	M (<i>SD</i>)
<i>JOB CORPS</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)*
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**p* value < 0.05

Pearson product-moment bivariate correlations were conducted to determine the relationship between total parent and oldest child physical activity and total parent and oldest child sedentary behaviors. However, no significant correlations were found.

Eating Right Survey

Altogether, there were 7 EFNEP program graduates amongst Job Corps and Riley County participants. The CRS5 did not break down group differences and data were considering missing in CRS5 when participants chose “non-applicable” as a response to the survey. The CRS5 was used to analyze the Eating Right Survey (Appendix A) and analysis was completed by examining questions by topic clusters. There were three different clusters from the Eating Right Survey: food resource management, nutrition practices, and food safety and handling. The food resource management cluster consisted of questions 1-4, nutrition practices cluster consisted of questions 1, and 7-10, and the food safety and handling cluster consisted of questions 5 and 6. Question 11 from the survey was not analyzed as part of a cluster because it was a state question. Improvements were seen in all three clusters. The results showed that 33% (1 of 3 participants) improved in one or more food resource management practices, 100% (1 of 1 participants) improved in two or more nutrition practices, and 33% (1 of 3) improved in one or more of the food safety practices. For question 11, 40% (2 of 5) improved and increased the number of times they ate family meals together. More specifically, the breakdown of changes for each question was as follows:

Food resource management practices:

- 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.

Nutrition practices:

- 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.

Food safety practices:

- 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.

Family meal time:

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

24-hour Food Recall

Data from the 24-hour food recall were entered in CRS5 and a summary of the results is presented below in Table 6.3 for both Job Corps and Riley County. The only increases in food consumption amongst all participants were seen with grains and the meats and beans food groups. However, Figure 6.1 presents data on those participants who increased their consumption within each food group. More specifically, Figures 6.2 through 6.6 shows the specific changes in ounces or cups consumed within each food group. At posttest, fewer participants consumed 0 cups of fruits per day and the number who ate 1 cup of fruit a day increased. For vegetables, there was a 43% increase for those who consumed 2 cups a day. However, a decrease was seen in those who reported consumption of 3 and 4 cups at pre-test and this brought the average vegetable consumption down to approximately 1 cup a day. For milk, the largest increase, 0% to 43%, was seen in those who consumed 1 cup a day. Additionally, there was a large decrease (by 57%) for those who consumed 3 or more cups of milk a day.

Table 6.3

Summary of Dietary Changes Job Corps 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)

Figure 6.1

Percent Positive Change of Participants Who Improved in Post Program Dietary Habits

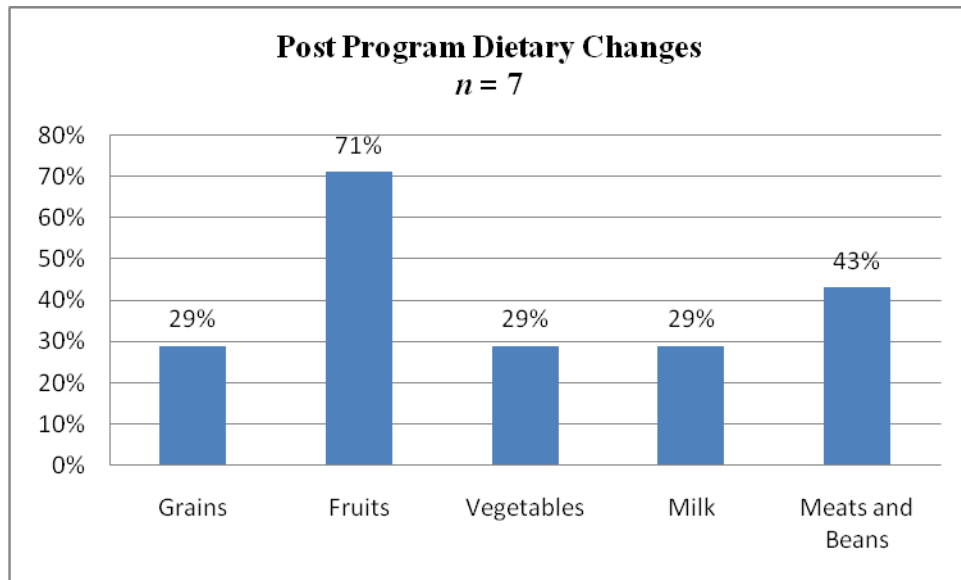


Figure 6.2
Percent Changes in Pre-and Post Program Dietary Grain Consumption

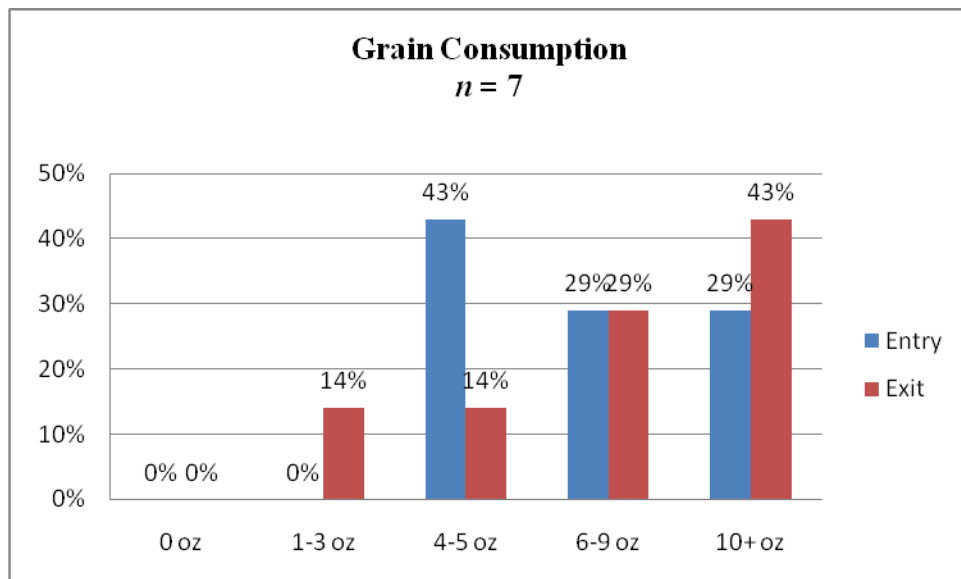


Figure 6.3 *Percent Changes in Pre-and Post Program Dietary Fruit Consumption*

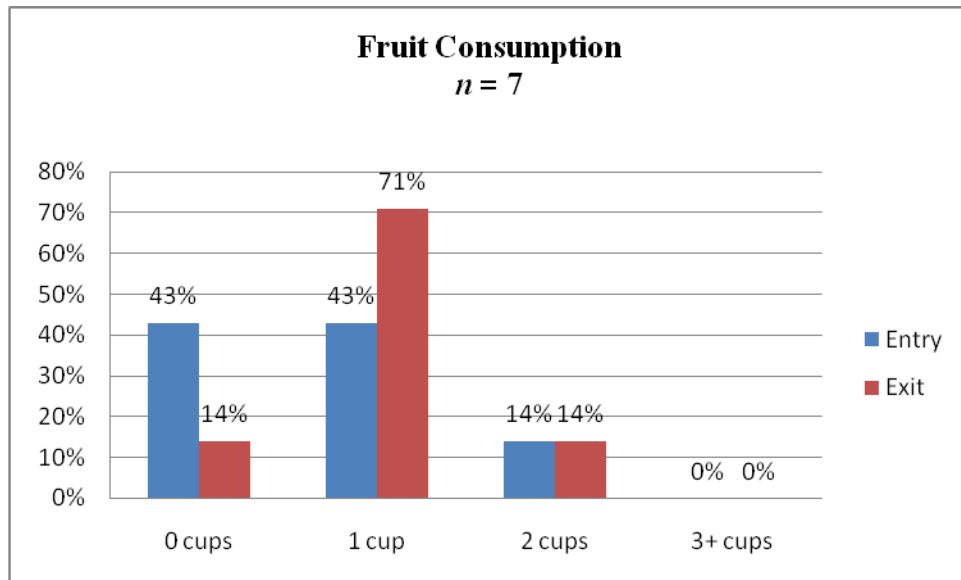


Figure 6.4
Percent Changes in Pre-and Post Program Dietary Vegetable Consumption

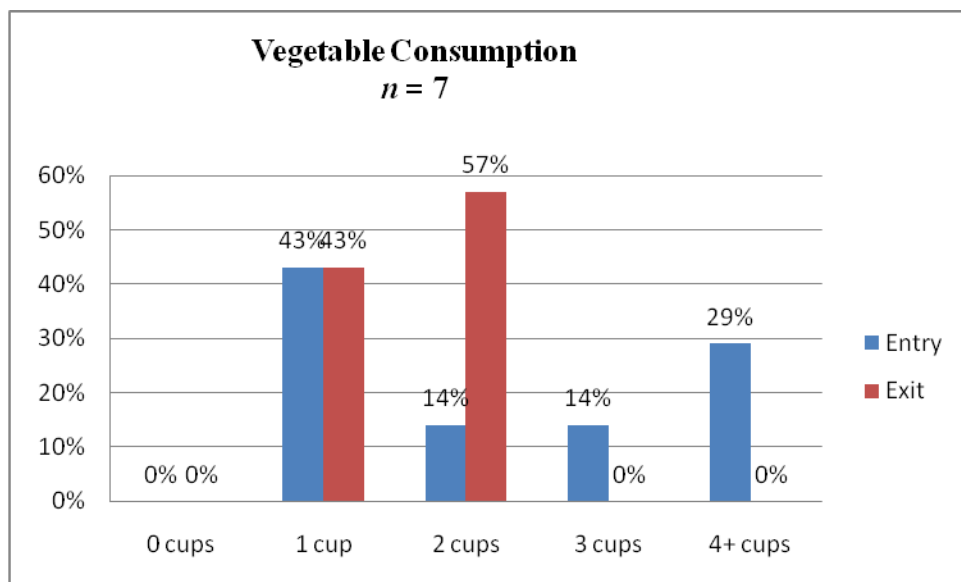


Figure 6.5
Percent Changes in Pre-and Post Program Dietary Milk Consumption

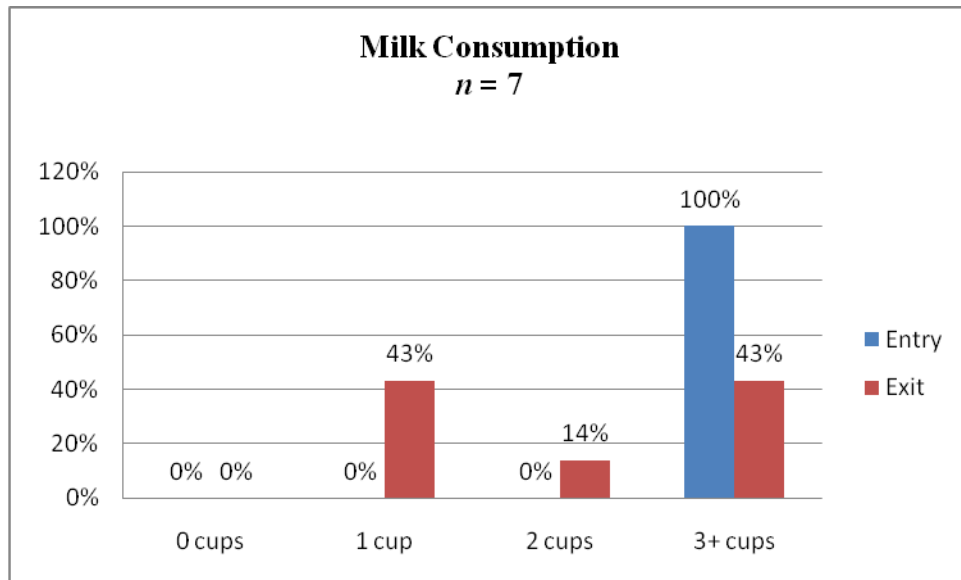
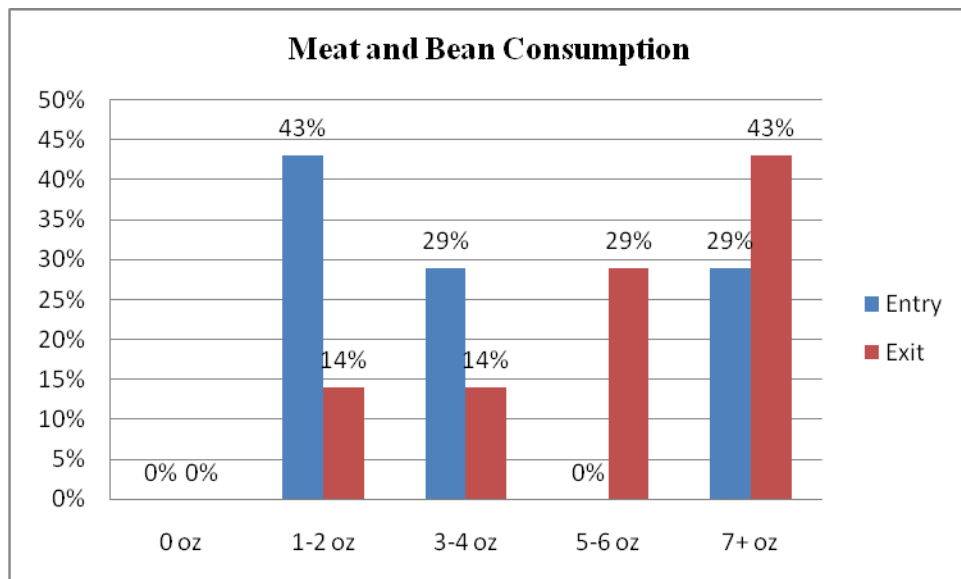


Figure 6.6
Percent Changes in Pre-and Post Program Dietary Meat and Bean Consumption



Process Evaluation

At the end of the program, a survey was distributed to further evaluate the program: What was the most important thing you learned while enrolled at EFNEP? How has this program changed your life? Describe one change you have made because of what you have learned from

EFNEP? Comments consisted mostly of participants increasing fruit and vegetable consumption, learning how to make better choices, using a shopping list, proper meal planning, proper thawing, and walking more. No further process evaluation was conducted because of the multiple types of evaluations already incorporated into the program.

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Chapter 7 - Discussion

Overall, my internship was a positive experience because of the public health opportunities I was exposed to. Altogether I was able to lead four different EFNEP groups, totaling 36 classes, two at Job Corps and two at Riley County. One group of EFNEP classes had a physical activity component. Immediately following the program, EFNEP participants reported improved nutrition habits and practices, increased physical activity, and decreased sedentary behaviors. Next, I was also able to be involved in worksite wellness with the *Take-10* breaks for the employees at Riley County. These *Take-10* breaks provided the opportunity for physical activity and were designed to make Riley County employees more aware of their current state of physical health. Finally, I helped develop, plan, and lead the pressure cooking class for the Riley County community.

EFNEP Outcomes

With the two groups that I implemented for EFNEP, no significant changes were seen with the 24-hour dietary recall and Eating Right Survey. Despite not achieving statistical significance, there were still a percentage of participants whose behavior positively changed after the program. As stated in the literature review above, Toni Yancey has shown improvements in physical activity with 10-minute bouts of physical activity. No changes were observed other than two individuals moving from 30-60 minutes of activity to 60 minutes or more a day.

There can be various explanations as to why there were no significant changes in these two groups. The number of participants was small, limiting variability of the findings. Also, participants' level of commitment for attending EFNEP lessons at Job Corps was not as strong as those at Riley County. Those at Job Corps were given a choice to attend EFNEP or Social Skills Training (SST) and the women sometimes preferred to come to EFNEP in order to avoid SST.

Job Corps women were required to attend either class or many of the women stated they would rather attend EFNEP because of the food we prepared. Despite choosing to attend EFNEP, many of the women were distracted during class with cell phones or talking amongst each other about topics unrelated to EFNEP. Furthermore, the time allotted for EFNEP at Job Corps (35 minutes) was much shorter than the EFNEP class at Riley County (60 minutes). Lastly, the participants in Riley County came to the class because they had chosen to attend and their level of commitment and motivation to learn new skills was much higher than Job Corps.

Despite no significant changes in either group, there were individual-level changes in physical activity and the nutrition practices. The physical activity amongst Job Corps participants was higher at pre- and post- program than the Riley County group, and this could be due to Job Corps living arrangements. Individuals from Job Corps must walk on campus to and from class on a daily basis. Job Corps also has access to a fitness center and a walking loop on campus. The Riley County group may have had less physical activity because two of the participants were pregnant and one participant had a broken ankle. The end of this program was also the beginning of the school year which could potentially account for the decrease in physical activity. Additionally, a newborn was added to the post-program survey and newborns do not fit into most of the physical activity categories on the survey. In the future, I would recommend there be an age minimum (18 months and older) for the oldest child physical activity survey.

Sedentary behavior decreased amongst parent and oldest child from pre- to post-program. Total sedentary activity significantly decreased for the oldest child within the Riley County group. These data were from only one family who had a child at pre-program survey and two children from different families on the post-program survey. Lastly, I think the survey I created

was too difficult to understand for most participants and this difficulty contributed to conflicting results.

Theoretical Framework and EFNEP Participants

As mentioned previously, Cullen et al. (2010) and Boyd and Windsor (2003) showed significant changes in dietary behaviors such as decreased energy intake and an increase in vegetable and fiber consumption and increased nutrition practices with EFNEP or with slight modifications to the program. Cullen et al. used the SCT to guide their EFNEP program and Boyd and Windsor combined EFNEP curriculum with the Partners for Life Program. Even though I did not formally assess any of the constructs in the SCT and TTM, my experience with the Job Corps mothers was that they were in the precontemplation stage and therefore cannot develop the self-efficacy necessary for a healthier behavior change. Most of the participants within this population did not have a high school diploma and were earning their GED and completing on the job training for employment once they leave Job Corps. Additionally, these participants were usually on more than one type of federal and/or government assistance and were raising at least one child at a young age. These women were trying to survive with the very basics and were more concerned with being able to provide for themselves and their family than thinking about how to prepare food or choose healthy fruits and vegetables. Furthermore, this group was much harder to get engaged in discussion and to keep from straying off the topic. In order to keep them engaged, I used different types of reinforcements, such as giving them prizes (bowls, cups, children's books) for volunteering to help prepare food and for answering a question.

Most of the participants Riley County had a high school diploma and one had college degree. Unlike the group from Job Corps, these participants were predominately only on WIC

assistance, living independently with their spouse and employed. Because these participants within Riley County were not as concerned about basic human needs, they were able to focus on more than one topic (food serving sizes, food pyramid, different types of foods) during a lesson. I learned to provide additional information and resources, such as discussion on nutritional properties, in order to stimulate this group. I was also able to incorporate different constructs of SCT and TTM into the lessons. I used problem solving techniques to help participants overcome eating out too often. For example, we discussed how to manage time to effectively plan meals and grocery shop in order to avoid eating out as often. Additionally, I had participants set goals for physical activity and fruit and vegetable consumption. Participants were also rewarded when they would discuss success and show plans of their changes in behavior. For example, participants were rewarded when they would complete a task I had sent home with them such as developing a grocery list, writing down their daily consumption of fruits and vegetables, and developing a physical activity plan. I allotted time during class to teach participants how to develop plans and list and they were required to bring back their completed task the following week and discuss with the group any success or struggles they encountered. I was able to push this audience further in order to fully engage them and to increase their healthier behaviors, because they were closer to the contemplation stage.

Both the *Take-10* breaks and pressure cooking class also provided the opportunity for individuals to become more aware of their current state of fitness or nutrition. These classes can move individuals from precontemplation to contemplation stages of the TTM. Because these two stages are what most individuals from the classes were in, consciousness raising and dramatic relief were two cognitive processes of change that may have been utilized.

Additionally, the group setting for these classes also provided the opportunity for people to establish helping relationships, behavioral processes of change within the TTM.

Strengths and Limitations: EFNEP

There are multiple limitations and strengths to Riley County KSRE EFNEP. The biggest strength is the evaluation system, CRS5, and changes can be identified from pre- to post-program. CRS5 is a county level system but the data from CRS5 are entered into a similar system for both the state and national levels. Because of this, EFNEP is able to provide data on populations and not just on individuals within counties. Another strength is the small class size. Both groups were personal and participants were able to share and learn from each other. The learner-centered approach EFNEP uses is also a strength because this teaching style has been shown to be effective for teaching new skills. Lastly, this program has been shown multiple times to be effective not only through the currently evaluation system, but also from research-based evidence.

The first limitation for Riley County EFNEP is an improved evaluation system for the program. Some of the questions on the Eating Right Survey are outdated and may not be up to date to what is most relevant for public health. Furthermore, EFNEP could incorporate an additional formative evaluation in order for leaders to effectively teach the essential elements of each class to their specific demographic group or population. For example, I noticed that I did not see many changes to the question about adding salt to foods from the Eating Right Survey. Developing a formative evaluation in which constructive feedback is given on how leaders are performing during class would help improve the outcomes of the program by helping leaders focus in on areas that should be emphasized to participants (Griffin et al., 2009; Wilson, Griffin, Saunders, Kitzman-Ulrick, Meyers, & Mansard, 2009; Young et al., 2008). Next, the CRS5

system is somewhat limited in that it cannot determine the magnitude of changes from pre- to post- program. To solve this issue, the CRS5 could be designed to adopt some of the characteristics of SPSS such as the capacity for statistical significance testing through univariate and multivariate analyses. Participants also experienced difficulty when completing the 24-hour food recall. Participants from both groups had a difficult time recalling food, understanding portion sizes, and were not motivated to complete the survey. Despite difficulty in filling out the recall, 24 hour food recalls have been shown to be reliable and have validity (Edmunds & Ziebland, 2002; Moore, Tapper, Murphy, Clark, Lynch, & Moore, 2007).

Recommendations: Riley County EFNEP

One of the first recommendations I would have for Riley County and their EFNEP is to include more physical activity components to the *Move More* component. Currently, only one lesson is specifically dedicated to physical activity and I would recommend that each lesson should include a physical activity component such as *Instant Recess*, goal setting, overcoming barriers to physical activity, and other behavioral skills designed for increasing physical activity. Next, I would recommend a formative evaluation process as mentioned above but it would also include an Extension agent who would lead and evaluate EFNEP instructors. Evaluation could be conducted after each class in order to assess where improvements need to be made. This would further add accountability to the program and in turn, make it more effective by increasing the knowledge of those who instruct. Nationally, EFNEP is currently transitioning to a web-based application to include recommendations from the Dietary Guidelines for America (DGA) 2010 (Procter, 2011). Along with these changes, training is underway to better guide the program planning, management and teaching decisions. Furthermore, the system used to monitor changes in the program is being validated. National EFNEP is focusing efforts to

improve their healthy weight message, increasing physical activity, improving food safety behaviors, increasing emphasis on food sources of vitamin D and potassium, and decreasing sodium (Procter, 2011).

Worksite Wellness and Pressure Cooker Class

Take-10 breaks were implemented every Tuesday during the months of September and December at 12:00 pm and 12:30 pm. Approximately 2-5 employees from Riley County attended each *Take-10* break and predominately consisted of women. These classes were provided on a weekly basis and weekly reminder emails were sent out prior to each class. Overall, feedback from those who participated was positive and the employees enjoyed these breaks. I created three different *Take-10* breaks (Appendix D) and participants enjoyed moving away from the traditional *Take-10* DVDs. I thoroughly enjoyed this part of my practicum.

The pressure-cooker class was implemented at Pottorff Hall in CiCo Park and participants were recruited from Riley County. There were 13 participants, 11 women and 2 men, and the class was conducted over two hours. Most of the participants had never used a pressure cooker and were able to gain new skills through the lecture provided and from the hands on experience by cooking three different recipes.

Overall Experience

Overall, my experience at K-State Research and Extension was valuable, informative and exciting. After leading EFNEP for six months, I can see myself doing a similar career in the future because of the community and individual involvement that is inherent within the program. Having developed the relationships within the Riley County community, Job Corps and the women from both groups was rewarding. Additionally, my involvement with worksite wellness is an area within physical activity in which I have vast experience in and have a passion for. All

of my responsibilities during my internship are what I see myself doing with my Master of Public Health degree. Through these experiences, I have learned how to better lead a class and now understand more about the population that is at risk for chronic diseases. At first it was a challenge to lead my first EFNEP class because I was unsure of where these participants were at for knowledge for nutrition and physical activity. Because I am knowledgeable and passionate about nutrition and physical activity, I had a little difficulty teaching because I had to break down each lesson on a basic level in order for these participants to learn. I have learned how to practically apply the knowledge over the past two years from the classroom to a public health setting such as EFNEP, *Take-10* breaks, and the pressure cooking class.

Lessons Learned

Because of my time at Riley County Extension, I have learned a great deal about developing, implementing, and evaluating a public health program. I have learned how to incorporate the skills throughout my education at K-State University and in the future I will be more effective at applying these skills. For example, when I developed the curriculum for these EFNEP classes, I did not set out specifically to apply the SCT or TTM constructs through the curriculum. Some of the constructs from these theories or models are inherent to the program, such as overcoming barriers. However, I would incorporate SCT constructs (self-efficacy, outcome expectations, sociocultural factors) and TTM constructs (consciousness raising, decisional balance, dramatic relief) within the curriculum that I developed in the future. Next, I would assess each population for whom I am running a program, and determine what behavior theory or model is best suited for the audience.

Another skill I would like to further focus on would be social marketing. Over 350 flyers and phone calls were made to recruit for Riley County EFNEP participants but only a small

percentage attended the program. Because this is an effective program, recruitment is important to reach the target audience. Improved recruitment and advertisement within the community through social marketing would aid in participation (Gries, Black, & Coster, 1995; Heiny et al., 2010).

Next, I would do a more in-depth process evaluation for EFNEP and future public health programs I may be responsible for. EFNEP classes for Riley County did include a small process evaluation at the end of the program; however I would have added additional evaluations for myself as the leader. To ensure the primary objectives were covered in each lesson, I would develop a checklist for the leader to complete after each lesson to assess whether or not each objective of that specific topic was covered. As mentioned previously, I would further evaluate the results from CRS5 and the different surveys to assess where participants improved or did not change in order to obtain feedback of how effective I am at teaching each lesson. Process evaluation is integral for assessing fidelity of program implementation and can tell us why a program intervention was successful or not (Bartholomew et al., 1998). Additionally, by using process evaluation for efficacy interventions, investigators are able to assess the fidelity, benefits and limitations of an intervention from both the practioner's and participants' perspectives prior to dissemination it to the community (Botvin, Dusenbury, Tortu, Botvin, 1990). In the future, I would use process evaluation because it allows researchers to look beyond outcome evaluations and assess fidelity of program implementation and to discern between intervention success and failure.

Lastly, I have a learned a great deal about the population who is at most need for this type of program. I struggled somewhat with how to best reach these individuals because I do not come from the population. After leading my EFNEP classes, I was inspired and longed to learn

and understand these individuals on a more personal level. Throughout the rest of my internship, I sought out skills through reading different books, such as Ruby Payne's *Bridges out of Poverty: Strategies for Professionals and Communities*, and different theories on how to teach individuals such as Motivational Interviewing.

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Appendix A - EFNEP Eating Right Survey



Expanded Food and
Nutrition Education
Program

EFNEP Eating Right Checklist

PA's Name: _____	PA's ID #: _____	Date: _____
Home Maker's Name: _____		
☐ Entry	☐ Exit	Client's ID #: _____
☐ Check if Interview		

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?	☐	☐	☐	☐	☐
(2) How often do you compare prices before you buy food?	☐	☐	☐	☐	☐
(3) How often do you run out of food before the end of the month?	☐	☐	☐	☐	☐
(4) How often do you shop with a grocery list?	☐	☐	☐	☐	☐
(5) This question is about meat and dairy foods. How often do you let these foods sit out for more than two hours?	☐	☐	☐	☐	☐
(6) How often do you thaw foods at room temperature?	☐	☐	☐	☐	☐
(7) When deciding what to feed your family, how often do you think about healthy food choices	☐	☐	☐	☐	☐
(8) How often do you eat or prepare foods without adding salt?	☐	☐	☐	☐	☐
(9) How often do you use the "Nutrition Facts" on the food label to make food choices?	☐	☐	☐	☐	☐
(10) How often do your children eat something in the morning within two hours of waking up?	☐	☐	☐	☐	☐
(11) How often do you eat meals or snacks with one or more family members?	☐	☐	☐	☐	☐

Appendix B - 24-Hour Food Recall



Expanded Food and
Nutrition Education
Program

Name: _____

Date Taken: _____

Check which food record:

Pregnant: ☐ Yes
☐ No

Nursing: ☐ Yes
☐ No

☐ Entry
☐ Exit

Taking Nutritional Supplements:

☐ Yes
☐ No

Activity Level: ☐ Less than 30 min.
☐ 30-60 minutes.
☐ More than 60 min.

If yes, list type: _____

Amount spent on food last month: _____

Meal type: 1 = Morning
2 = Mid-Morning
3 = Noon
4 = Afternoon
5 = Evening
6 = Late Evening

Serving Abbreviations: Tablespoon = TBSP
Cup = c
Teaspoon = tsp
Pound = lb
Ounce = oz
Slice = sl

What did the client eat and drink in the last 24 hours? (be thorough)

Foods and Beverages consumed. Described in detail. List on food per line.	Amount Eaten	Meal Type

Appendix C - Physical Activity Recall

7-Day Physical Activity Recall

Name: _____
(Last Name) (First Name)

Date: _____



Over the last week (seven days), how many times did you do the following kinds of physical activity for at least 30 minutes? Please mark an "x" under the days you were active for at least 30 minutes. Physical activity can be counted in 10 minute sessions.

Mother/Adult Female										
		Number of Days	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
		<u>MILD EXERCISE</u> (not exhausting) For example, brisk walking, dancing, hiking, tennis, baseball or softball, basketball, football, gardening or anything else that causes some increase in breathing or heart rate.								
		<u>EXHAUSTING EXERCISE</u> (heart beats rapidly) For example, jogging, running, racquetball, soccer, judo, karate, skating, cycling, swimming laps, aerobics.								

1. Were you employed in the last seven days? ____ No (skip to #4) ____ Yes
2. How many days of the last seven did you work? ____ Days
3. How many total hours did you work in the last seven days? ____ Hours last week
4. How many hours each day do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television or working at a desk or computer (including hours at work)? ____
5. Over the past month, on average, how many hours per day (outside of work) did you just watch TV or videos? ____
6. Over the past month, on average, how many hours per day (outside of work) did you just use a computer? ____

Date: _____

[illegible]

Appendix D - Take 10 Breaks



“CrossFit Style”

90-second warm-up: March in place, take shoes off if participants desire (15 seconds)
Standing stretch, hands above head (15 seconds)
Shoulder stretch, both arms (15 seconds per arm)
Hip flexor stretch, 15 seconds both legs

1 minute explanation of movements: Thrusters: Hands on shoulders, squat down to chair, stand up and raise arms as hip extends. Complete five repetitions.

Pushups: Start with hands on wall. Participants can do pushups off of desk. Complete five repetitions.

Windmills: Start on right leg, balance, and take left hand down to right leg and then stand and raise arm to full extension. Switch arm and complete five repetitions.

Striking: Alternating arms/strong punch with no bounce. Body follows with punch.

- Participants will complete As Many Repetitions As Possible (AMRAP) of 6 minutes of the above four exercises, at 10 repetitions per movement.
- Stations will be set throughout the office and participants will move to each station per their pace.
- Participants will be instructed to move at their pace and skill level.

90-second cool-down: March in place, take shoes off if participants desire (150 seconds)
Standing stretch, hands above head (15 seconds)
Shoulder stretch, both arms (15 seconds per arm)
Hip flexor stretch, 15 seconds both legs

Take 10

“Whole-Body with Exercise Bands”

90-second warm-up: March in place, take shoes off if participants desire (15 seconds)
Standing tricep stretch both arms (15 seconds each)
Shoulder stretch, both arms (15 seconds per arm)
Hip rotation, 15 seconds both legs
March in place; grab bands (15 seconds)

7-minute band exercises

Lateral raises: Stand with feet shoulder width apart and place one end of the band under the right foot. Comfortably grasp the other end of the band in the right hand, maintaining a slight bend in the elbow. Position the right arms straight down from the shoulder with the thumb pointing forward.

Squats: Stand with feet approximately shoulder-width apart. Place the band under the arches of both feet, holding the ends comfortably in each hand. Look at a point slightly higher than your head and contract your abdominals to maintain proper posture.

Chest press: Stand with feet shoulder-width apart, knees soft, posture erect and abdominals tight. Grasp the ends of the band in both hands and place behind your back, under the arms, at chest level. Bend and raise your elbows to chest level. Keeping your wrists firm and palms parallel with the floor, extend your arms straight in front of the body; do not lock out the elbows.

- Perform 10 repetitions per movement and alternate between exercises, completing 2 rounds of each.

March in place for 15 seconds

Upper back: Stand with feet shoulder-width apart, knees soft, posture erect and abdominals tight. Grasp the band so hands are slightly wider than shoulder-width apart. With your palms facing the floor, bend your elbows and lift your arms to chest height. Expand your chest and pull your shoulder blades back and together. Keep your lower body stationary and maintain good posture throughout the exercise.

Leg kickback: Stand behind a chair, placing one hand on it for balance. Step one foot inside the loop and position at bottom of foot. With good posture and contracted abdominals, keep supporting leg softly bent at knee and contract hamstring by kicking back until leg is straight. Slowly return to starting position. Switch legs after 10 repetitions.

Lat pulldown: stand with feet shoulder-width apart, knees soft and abdominals tight. Grasp the band so hands are slightly wider than shoulder-width apart. Lift your arms just above your head, palms facing front; look straight ahead. Extend arms laterally at shoulder height with firm wrists and slightly bent elbows. Pull your shoulder blades back and together and expand the chest. Return to starting position and repeat.

- Perform 10 repetitions per movement and alternate between exercises, completing 2 rounds of each.

90-second cool down: March in place (15 seconds)

Standing tricep stretch both arms (15 seconds each)

Shoulder stretch, both arms (15 seconds per arm)

Standing hamstring stretch, 15 seconds

March in place; grab bands (15 seconds)

Take 10

“Activity Chair”

90-second warm-up: Wrist stretch (15 seconds)
Forearm (15 seconds each)
Lower back stretch (15 seconds per arm)
Chest/Arm stretch (raise hands up to ceiling) (15 seconds)
Arm circles (15 seconds)
Hamstring stretch (15 seconds)

7-minute Chair Exercises

Hip Flexion: Sit tall with the abs in and lift the left foot off the floor a few inches, knee bent. Hold for 2 seconds, lower and repeat for 10 reps. Repeat on the other side.

Front Raise to Triceps Press: Sit tall with the abs in and hold a full water bottle in the left hand. Lift the bottle up to shoulder level, pause, and then continue lifting all the way up over the head. When the arm is next to the ear, bend the elbow, taking the water bottle behind you and contracting the triceps. Straighten the arm and lower down, repeat.

One-Legged Squat: Make sure the chair is stable and take one foot slightly in front of the other. Use the hands for leverage as you push up into a one-legged squat, hovering just over the chair and keeping the other leg on the floor for balance. Lower and repeat, only coming a few inches off the chair. Repeat on the other side.

- Perform 10 repetitions per movement and alternate between exercises, completing 2 rounds of each.

Front Raise to Triceps Press: Sit tall with the abs in and hold a full water bottle in the left hand. Lift the bottle up to shoulder level, pause, and then continue lifting all the way up over the head. When the arm is next to the ear, bend the elbow, taking the water bottle behind you and contracting the triceps. Straighten the arm and lower down.

Side Bends: Hold a water bottle with both hands and stretch it up over the head, arms straight. Gently bend towards the left as far as you can, contracting the abs. Come back to center and repeat to the right. Complete 10 reps (bending to the right and left is one rep).

Dips: Make sure chair is stable and place hands next to hips. Move hips in front of chair and bend the elbows, lowering the body until the elbows are at 90 degrees. Push back up and repeat for 16 reps.

- Perform 10 repetitions per movement and alternate between exercises, completing 2 rounds of each.

45-second cool-down: Lower back stretch (15 seconds per arm)
Chest/Arm stretch (raise hands up to ceiling) (15 seconds)
Hamstring stretch (15 seconds)

