

DISSERTATION

DEVELOPMENT AND EVALUATION OF AN ONLINE TRAINING FOR
PARAPROFESSIONAL NUTRITION EDUCATORS
FROM THE EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM (EFNEP)
ADDRESSING PRENATAL NUTRITION

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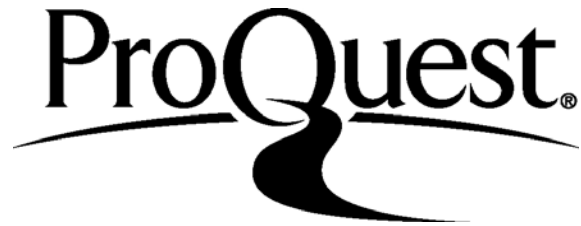
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ABSTRACT

DEVELOPMENT AND EVALUATION OF AN ONLINE TRAINING FOR PARAPROFESSIONAL NUTRITION EDUCATORS FROM THE EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM (EFNEP) ADDRESSING PRENATAL NUTRITION

The objective of this research project was to assess the training needs of paraprofessional nutrition educators from the Expanded Food and Nutrition Education Program (EFNEP), as well as to develop and evaluate an online training for these paraprofessionals using the prenatal nutrition lesson from the Eating Smart • Being Active (ESBA) curriculum. Different study designs were used throughout this research, subdividing the project in three phases:

“*Phase I*” was a qualitative cross-sectional study. Semi-structured, in-depth interviews were done with 15 paraprofessional educators and 7 supervisors.

“*Phase II*” corresponded to the design and development of a video based online training using instructional design principles and the Cognitive Theory of Multimedia Learning.

“*Phase III*” was a quasi-experimental pre-/post-test research design with 139 paraprofessionals from 18 states/US territories who were randomly assigned, by state, to either intervention or control group to implement and evaluate the online training.

Assessments for Phase III included knowledge, ability to identify inappropriate teaching practices demonstrated in videos, teaching self-efficacy, and a reaction survey to gather opinions of paraprofessionals after completing the online training.

Results from “*Phase I*” included: almost all interviewees considered that having an online training would be beneficial. Most paraprofessionals and supervisors wanted the online training to compliment, not replace, in-person trainings. The preferred format was videos depicting role plays by educators teaching the lesson. Results from “*Phase II*” included: forty short video clips developed to present key aspects of delivering the prenatal lesson. Finally, results from “*Phase III*” included: significantly higher scores in the intervention group in knowledge, identification of inappropriate practices, and teaching self-efficacy compared to the control group. More than 85% of paraprofessionals who completed the training considered that the online training helped them feel better prepared to teach the ESBA prenatal lesson, would recommend the training to other paraprofessional nutrition educators, and would like more online trainings like this one in the future.

In conclusion, a video based online training is an effective method to train paraprofessional nutrition educators on how to teach a nutrition lesson plan, in terms of increased knowledge, identification of proper practices, and self-efficacy. A large number of educators, geographically dispersed, can be easily reached with this training delivery method helping standardize current trainings.

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DEDICATION

I would like to dedicate my dissertation to my mother, who sacrificed so much during her short life, so that I could have a great education. In your undergraduate thesis you wrote “to my daughter, for the moments of love that I could not give her while I was studying.” Today is my opportunity to dedicate my dissertation to you for all the moments of love that I could not spend with you while studying in the US... Mom, we did it! You would have been so proud.

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CHAPTER 1 - INTRODUCTION

Rationale for Research

Many pregnant women do not have a weight gain that follows the Institute of Medicine's guidelines.¹ In addition, many low-income pregnant women have reported inadequate diets,²⁻⁸ which can affect the health of the mother and the baby.⁹ Since 1969, the Expanded Food and Nutrition Education Program (EFNEP) has been helping improve the nutrition of low-income families through research based nutrition lessons.¹⁰ Paraprofessional nutrition educators, people indigenous to the communities that the program serves.^{10,11} In 2014, these nutrition educators delivered the nutrition lessons to about a half million people.¹² Among all adult participants in EFNEP during 2014, about 8% were pregnant,¹² but this percentage was much higher in some states, such as Colorado, where 30% of EFNEP participants were pregnant.¹³ Because nutrition plays an important role in the health of the pregnant women and their fetuses,⁹ EFNEP in Colorado and California developed the *Eating Smart and Being Active During Pregnancy* lesson¹⁴ to supplement the rest of the nutrition lessons from the *Eating Smart • Being Active* curriculum,¹⁵ which is being purchased by 44 states in the United States.¹⁶

Paraprofessional nutrition educators deliver the nutrition lessons because they have similar life experiences to those of EFNEP's participants. The similarities among paraprofessional nutrition educators and participants make the educators more likely to empathize with participants and participants are more likely to trust the educators. Thus, increasing the likelihood that paraprofessional nutrition educators become trusted role models in their communities and influence EFNEP's participants' lives.^{10,11}

Training paraprofessionals can be challenging, but their training is fundamental for the success of the program.^{11,17} Professionals working for EFNEP are in charge of delivering paraprofessional nutrition educators' initial and ongoing trainings (training right after being hired and continuous training throughout paraprofessionals' career, respectively).¹¹ Some challenges of training paraprofessional nutrition educators include: heterogeneous demographic characteristics,¹⁷⁻²¹ differences in formal education,^{17,19,22} lack of expertise in nutrition,^{11,23} basic, if any, previous work experience compared to professionals,¹¹ paraprofessionals work in geographically disperse locations,²⁴ and updates in the Dietary Guidelines for Americans²⁵ require updates in EFNEP curriculum, and thus in paraprofessionals' nutrition knowledge. In addition, there is extensive information that needs to be covered at initial trainings and there are no standardized trainings for EFNEP paraprofessionals; training varies among states²⁴ and although there is at least one curriculum being used extensively throughout the country,²⁶ which is the Eating Smart • Being Active curriculum,¹⁶ we do not know if the nutrition lessons are being taught with fidelity. Due to the importance and challenges that training EFNEP paraprofessionals present, efficient and effective methods of training these peer educators are needed. Currently, there is scarce research that presents the development and evaluations of theory based trainings used in EFNEP.

Project Objectives

The objectives of this investigation were: to assess what is needed to train paraprofessional nutrition educators online, develop and implement a theory based online training to train paraprofessional nutrition educators on how to teach a nutrition lesson, and to evaluate if the online training would be an effective training method for paraprofessional nutrition educators. It

was also important to evaluate paraprofessional nutrition educators' reactions to the online training.

It was hypothesized that paraprofessionals who would completed the online training would significantly increase their knowledge, ability to identify inappropriate teaching practices, and teaching self-efficacy. It was also hypothesized that most paraprofessional nutrition educators would react positively to the online training.

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CHAPTER 2 – LITERATURE REVIEW

Nutrition During Pregnancy in Low-income Women in the United States

Guidelines for Nutrition During Pregnancy in the United States

What pregnant women ingest not only affect their bodies, but also the development of their fetus. Thus, it is important that they understand the nutrition recommendations for the prenatal period.¹ Every year, millions of babies are born in the US. In 2014 there were close to 4,000,000 births.² For this reason, Healthy People 2020 objectives,³ the Dietary Guidelines for Americans,⁴ the American College of Obstetricians and Gynecologists (ACOG),⁵ and the Academy of Nutrition and Dietetics^{1,6} present specific objectives and guidelines to help women have a healthy pregnancy. In general, the key aspects addressed by these pregnancy guidelines are: adequate weight gain, appropriate diet, physical activity, and prevention of foodborne illnesses.

Pregnant women should gain weight within the Institute of Medicine (IOM) gestational weight gain guidelines.^{4,7} These guidelines are based on a woman's pre-pregnancy body mass index (BMI).⁷ Furthermore, the Healthy People 2020 objectives for maternal, infant, and child health (MICH-13) is to "increase the proportion of mothers who achieve a recommended weight gain during their pregnancies."³ Weight gain below the recommendations has been associated with small for gestational age babies.⁸ Gaining weight above the 2009 IOM recommendations has been associated with large for gestational age babies (LGA).⁸⁻¹⁰ Infants who are large for their gestational age can have an increased risk for shoulder dystocia.¹¹ Less than one third of the pregnant women in the US gain weight within the IOM recommendations.¹² Women gaining excessive weight during pregnancy can have greater difficulty going back to their pre-pregnancy weight after delivery.¹³

Dietary recommendations during pregnancy include: consumption of a varied diet based on the Dietary Guidelines for Americans,¹ slight increase in caloric intake in the second and third trimesters of pregnancy,¹⁴ adequate intake of critical micronutrients such as folate and iron,⁴ and specific recommendations about seafood consumption.⁴ The consumption of Calories (Kcals) during pregnancy is increased only in the second and third trimesters.¹⁴ During the second trimester of pregnancy, an adult woman, 19 years old or older, needs 340 extra Kcals and during the third trimester she needs 452 extra Kcals.¹⁴ The increased energy requirements and tissue synthesis account for the increased caloric needs during pregnancy.¹⁴

During pregnancy the needs for most nutrients are increased. The few dietary reference intakes (DRIs) that remain unchanged during pregnancy are vitamin E, phosphorus, vitamin D, vitamin K, biotin, calcium, fluoride, potassium, sodium, and chloride.¹⁴ There are some micronutrients that are particularly important during pregnancy. One of these nutrients is folate. This nutrient is critical during the first 12 weeks of fetal development to help prevent neural tube defects (NTD).¹⁵ There are around 1500 new cases of spina bifida and 860 new cases of anencephaly in the United States every year.¹⁶ However, it has been reported that only 55-60% of pregnant women consumed supplements containing folic acid during their first trimester, while almost 90% of pregnant women consumed the supplement in their third trimester.¹⁷ Women of childbearing age should consume 400 µg of dietary folate equivalents per day. During pregnancy the recommendation of folic acid increases to 600 µg of dietary folate equivalents per day.¹⁴

Another critical nutrient during pregnancy is iron. The recommended dietary allowance (RDA) for iron is increased from 18 mg/day before pregnancy to 27 mg/day during pregnancy in adult women 19-50 years old.¹⁴ Data from the National Health and Nutrition Examination Survey (NHANES) 2003-2006 showed that 16.1 percent of pregnant females were iron

deficient.¹⁸ This percentage is slightly above the Healthy People 2020 objective, which is 14.5 percent.¹⁹ However, the 2011 Pregnancy Nutrition Surveillance showed that 33.8 percent of low-income pregnant women had anemia (low hemoglobin/hematocrit) during their third trimester and 28.3 percent were anemic after delivery.²⁰

The Dietary Guidelines for Americans recommend that pregnant women consume 8 to 12 ounces of seafood per week from different food sources.⁴ The guidelines also recommend limiting white albacore tuna to only 6 ounces per week and to avoid eating tilefish, shark, swordfish, and king mackerel because of their high levels of mercury.⁴ Seafood consumption during pregnancy is important because it contains docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) fatty acids, which have been shown to influence cognitive development in the child²¹ and to increase the gestation period.²² A longer gestational period has been associated with better neurological development in children.²³

There is a slight increase in the recommended dietary allowances (RDAs) for macronutrients during pregnancy. The RDA for carbohydrates increases from a minimum of 130 g/day before pregnancy to a minimum of 175g/day during pregnancy.¹⁴ The amount of carbohydrates required before pregnancy is based on the minimum amount of glucose that the human brain utilizes; during pregnancy, the needs are increased to supply glucose to the fetal brain as well.¹⁴ The protein RDA increases from 46 g/day before pregnancy to 71 g/day during pregnancy. For pregnant women the amount of protein needed was determined by nitrogen balance studies, in addition to protein deposition.¹⁴ With regards to the requirements for fat, there is no DRI established for any age group besides infants.¹⁴ The acceptable macronutrient distribution range (AMDR) does not change from before to during pregnancy. The AMDR for fat for adults is 20-35 percent of the total energy consumed.¹⁴ Pregnant women are encouraged to

achieve their nutritional needs through a healthy diet.²⁴ There are only a few nutrients that pregnant women may need to supplement to get the recommended amounts. Pregnant women could benefit from using dietary supplements for folic acid, iron^{25,26} and vitamin D^{27,28} because these nutrients are often not consumed in sufficient amounts through diet only.

Physical activity is also important during pregnancy. The ACOG guidelines recommend that pregnant women exercise for at least 30 minutes at moderate intensity ideally every day of the week if they are not experiencing any complications during their pregnancy.²⁹ Studies have shown that physical activity does not harm the fetus.^{30,31} Among the benefits of physical activity during pregnancy is a decrease in the odds of complications due to hypertension.³² Also, according to a randomized controlled trial by Hui et al, exercise, combined with dietary counseling, decreased the prevalence of excessive weight gain during pregnancy.³⁰ In addition, exercise done before a woman is pregnant or during her pregnancy has been associated with decreased risk for gestational diabetes.³³

Prevention of foodborne illness is a key aspect of prenatal care. During pregnancy, there are changes in the cell-mediated immune system to prevent the rejection of the fetus. However, this also makes pregnant women and their fetus more susceptible to some foodborne illnesses.³⁴ During pregnancy there is an increased susceptibility to foodborne pathogens, such as *Listeria monocytogenes* and *Toxoplasma gondii*, which are responsible for the diseases listeriosis and toxoplasmosis, respectively.³⁴

Pregnant women are more likely to be infected with *Listeria monocytogenes* than the general population, with a 10 times higher likelihood of developing listeriosis.³⁵ Women with listeriosis may or may not have symptoms; symptoms that have been reported include fever, chills, headache, muscle ache, vomiting, stiff neck and diarrhea.³⁶ Neonates affected with this

disease manifested it within seven days after birth and the median number of days spent at the hospital was fourteen.³⁶ The report by Jackson et al also described that cases of infant mortality due to listeriosis were 13 times higher than the overall perinatal mortality in the United States.³⁶ Foods that have been associated with a higher risk of listeriosis include: hot dogs,³⁷ turkey deli cuts,³⁸ deli meats,³⁹ Mexican-style cheese made with raw milk,⁴⁰ melons eaten at commercial establishments, and hummus prepared outside the home.⁴¹

Although 60 million people in the United States have been infected with *Toxoplasma gondii*, not all of them presented signs of the disease.⁴² The prevalence of toxoplasmosis in the United States, confirmed with blood analysis, is 10.8% among individuals aged 6-49 years old.⁴³ Women who are infected with *Toxoplasma*, once pregnant or just before becoming pregnant, can pass the illness to the fetus.⁴⁴ Once born, infants can show some clinical manifestations if infected with *Toxoplasma gondii*, including eye disease, brain calcifications and hydrocephalus. However, not every infant with diagnosed *Toxoplasma gondii* will present severe clinical manifestations.⁴⁵ The *Toxoplasma gondii* parasite is hosted in cats and can contaminate the environment through the cat's feces.⁴⁴ Eating raw or uncooked meat, as well as exposure to cat feces while cleaning a cat's litter box, gardening, or coming into contact with anything that has been contaminated with cat feces can infect a person with *Toxoplasma gondii*.⁴⁶

Another foodborne illness that is relevant because of its high number of cases in the US is salmonellosis. During 2014, the rate of salmonellosis in the United States was 15.45 per 100,000 people.⁴⁷ In pregnant women, because of a weakened immune system, salmonellosis can be more severe, and even cause death.⁴⁶ Some of the symptoms associated with this illness are stomach pain, diarrhea, nausea, chills, fever and headache. Foods associated with salmonellosis

are raw or undercooked eggs, poultry, meat, unpasteurized milk or juice, cheese, seafood, fresh fruits and vegetables.⁴⁶

The US Department of Agriculture and the US Department of Health and Human Services guidelines for food safety for pregnant women are summarized in four steps, which are to: clean (washing one's hands and cooking surfaces), separate (avoiding cross-contamination), cook (making sure that foods are cooked to a safe internal temperature using a food thermometer), and chill (refrigerating foods at $\leq 40^{\circ}$ F or freezing them at $\leq 0^{\circ}$ F).⁴⁶ In addition, other specific recommendations include: to consume pasteurized milk and cheese made with pasteurized milk; to wash all fruits and vegetables; to reheat hot dogs and deli meats to steaming hot, to not consume foods that contain raw or uncooked eggs unless the eggs are pasteurized, and to not consume unpasteurized or refrigerated pâté or meat spreads.⁴⁶

Diets of Low-income Pregnant Women in the United States

We lack a large, current, national representative sample of pregnant women's diet in the US. However, pregnant women included in the "What We Eat in America" report, NHANES 2007-2010 (n=133), reported intakes below their Estimated Average Requirements (EAR) for: vitamins A, C, D, E, calcium, folate, and iron. Furthermore, only 8% and 3% of the 133 pregnant women in the sample had intakes above the adequate intake (AI) for fiber and potassium, respectively.²⁴ These nutrients were also of concern among the overall American population.²⁴ Moreover, researchers from past studies, who had looked at the diet of groups of low-income pregnant women's in the US, also found that many of their study participants had inadequate diets.⁴⁸⁻⁵⁴

As in the NHANES 2007-2010 sample of pregnant women, previous investigations that included low-income pregnant participants showed that folate,^{26,52,54} iron^{20,51,52,54} vitamins A, D,

E, magnesium and zinc⁵⁵ were nutrients often consumed below recommendations. In at least one of the studies, ready-to-eat cereal was the primary source of folate and iron, while ground beef was the main source of iron from animal sources.²⁶

In addition, researchers in past studies found that many pregnant participants did not meet the recommendation for grains,^{49-51,54} vegetables,^{48-50,52-54,56} dairy,⁴⁸⁻⁵⁰ fish,⁴⁹ fiber^{25,26,48} (which in one study came mainly from fried potatoes),²⁶ DHA,^{55,57} and EPA.⁵⁷ In contrast, researchers found that protein is a nutrient that many pregnant women consumed at or above the recommendations^{48,50,58} and often pregnant women also had high intakes of fat,^{48,49} usually consuming more than the recommended 30% of total Calories from this nutrient.^{26,54,55}

Findings about fruit consumption are not consistent. Some investigators reported low intakes of fruit,^{52,56} while others reported an average fruit consumption among pregnant participants that reached the recommendations.^{48,49,53} A plausible explanation for the differences observed is that fruit intake is not measured consistently across studies. Some investigators included juice as fruit and others did not. Watts and colleagues observed that when they included juice intake in their analysis, participants' fruit consumption increased by almost half.⁵⁴ The high consumption of fruit juices among pregnant women is also reflected in a study by Siega-Riz et al; they observed that the primary source of vitamin C was fruit juices, and to a much lesser extent whole fruits.²⁶

Several investigators also found that many pregnant women did not select the healthiest food options. For example, expectant women reported high intakes of sugar-sweetened beverages^{48,49} and sweets.⁴⁸ They also reported consuming hamburgers, ground beef,^{26,49} burritos/meat loaf, cheese/cheese spread,²⁶ and whole milk^{26,49} as important protein sources.

Furthermore, in one study, the primary sources of fat were mayonnaise/salad dressing, cheese/cheese spread, dishes with cheese, and ice cream.²⁶

Other food choices that pregnant women often reported were eating white bread and flour tortillas as a main source of grains, French-fried potatoes as a significant source of vegetables,⁴⁹ and salty snacks.⁴⁸ Researchers have also found other unhealthy eating behaviors among pregnant women such as eating at fast food restaurants,^{49,59} and skipping meals.⁶⁰ Fowles et al found that pregnant women who ate fast foods more frequently had significantly higher intakes of vegetables, but significantly lower intakes of fruit, calcium, and DHA, as well as higher intakes of Calories from fat, compared to pregnant women who ate fast foods less frequently.⁶¹ The authors recognized that the higher intakes of vegetables among those who ate fast food more frequently may have been because French-fries were classified as vegetables.⁶¹ Hennessy and colleagues reported that those pregnant participants who had a preterm labor were more likely to skip meals compared to participants who had term pregnancies.⁶⁰

Researchers have also looked at different factors that can be associated with the quality of women's diet during pregnancy. Fowles et al found that distress (a measure of stress plus depression), poor scores in a scale measuring eating habits,⁶² and low control over meal preparation⁵² were inversely correlated with dietary quality. Social influences have been shown to play an important role in diets of expectant women, especially the support from a partner.⁵⁰ In a study, researchers found that family gatherings were opportunities to overeat.⁵⁹ In addition, support from a partner has been associated with higher intakes of vegetables and lower intakes of grains and iron rich foods.⁶³ Husbands might influence the home environment by bringing home foods high in fat, but also fruit juices and vegetables, as pregnant women indicated in a study by

Thornton et al.⁵⁹ However, when the family income was lower, they bought less fruits and vegetables.⁵⁹

Demographic characteristics that have been found to be associated with healthier diets among pregnant women include: nulliparity,^{51,64} non-smoker,^{54,64} and higher educational level.^{51,64} Although age has been significantly associated with eating habits during pregnancy, findings among and within studies have not been consistent. Older women have shown better overall diet quality,⁵¹ a higher consumption of vegetables,^{51,54} and fruits,⁵⁴ and lower intakes of fat.⁵¹ However, in some studies, older participants had higher intakes of total fat, cholesterol and saturated fat,⁵⁴ while younger women reported higher intakes of folate,⁵⁴ iron,^{51,54} and better meal and snack patterns compared to older women.⁵¹ Furthermore, in one study, the authors did not find an association between age and overall diet quality.⁵⁴ Differences can be due to inequalities in the measurements of women's diets. Although the studies used a food frequency questionnaire (FFQ), they did not use the same FFQ, it was not administered in the same format across studies, and was not analyzed using the same software. Therefore, the accuracy of these participants' diets may vary across studies.

With regards to race, white pregnant women have reported overall healthier diets.^{54,64} However, in a study by Siega-Riz et al, while white women had significantly higher intakes of protein, folate, iron, and fiber, African American participants had significantly higher consumption of vitamin C.²⁶ Country of origin seems to play a role in some differences observed in the diets of pregnant women of Mexican descent in the United States. Those born in Mexico, consumed more Calories, vitamin A, E, folate, and calcium than those born in the United States; this probably was because Mexico-born participants ate more fruits, dairy, and grains. It is worth

noting that as the years in the United States increased, their intakes of Calories, fiber and iron significantly decreased.²⁵

Many of the issues related to the diet of pregnant women in the United States seem to have similarities with the average American diet. Information from What We Eat in American (NHANES 2007-2010) indicated that the average American diet did not include enough vegetables, fruits, whole grains, and dairy. Furthermore, nutrients consumed below the IOM recommendations included: vitamin A, vitamin D, vitamin E, vitamin C, folate, calcium, magnesium, fiber, and potassium. For women of reproductive age (included those pregnant), iron was also a nutrient often consumed below the recommendations.²⁴ Although several of the studies examined in this review are not recent, what has been reported in the NHANES 2007-2010 is not much different than what has been observed in past studies. For example, folate, iron, vitamin D, vitamin E, and fiber continue to be nutrients that many pregnant women are not consuming in the amounts needed.²⁴

Even though there is a need for a larger sample of pregnant women included in What We Eat in America, the scientific report of the 2015 Dietary Guidelines advisory committee states: “few, if any, improvements in consumers’ food choices have been seen in recent decades. On average, the U.S. diet is low in vegetables, fruit, and whole grains, and high in sodium, calories, saturated fat, refined grains, and added sugars. Underconsumption of essential nutrients vitamin D, calcium, potassium, and fiber are public health concerns for the majority of the U.S.”²⁴ This lack of change in the average American diet, suggests that it is important to keep educating and helping pregnant women increase their skills to help them improve their dietary patterns.

Nutrition Education for Pregnant Women

Theoretically, pregnancy can be a time in women's lives when they could be more receptive to health messages because they may be motivated to have a healthy baby.⁶⁵ However, even among some women who recognized that they wanted to make changes, for the health of their fetus, they acknowledged that changing their diet would be difficult.⁵⁰ Research has shown that eating patterns change very little during pregnancy.⁶⁴ Nonetheless, a few changes in eating habits, such as increased intake of fruit and vegetables, as well as breakfast, have been reported during pregnancy among some women.⁶⁶ In addition, investigators have found that some women reported a lower consumption of alcohol,^{20,64,67} and caffeine,⁶⁴ and higher intake of multivitamins^{17,67} during pregnancy.

Some nutrition education interventions have been successful at increasing pregnant women's nutrition knowledge.⁶⁸⁻⁷⁰ Based on participants' dietary intake reports, interventions during pregnancy have also been effective at increasing intakes of important nutrients such as zinc,⁷¹ calcium⁷¹ and DHA,⁷² and healthy foods such as whole grains, fruits, vegetables, avocado, nuts,⁶⁸ and fish,^{68,72} as well as reducing intakes of some unhealthy foods high in sugar⁶⁸ and fat.³⁰

Results from interventions to prevent pregnant women from gaining excess weight during pregnancy have shown conflicting results. In general, many studies present results with no significant differences in the amount of weight gain between the control and intervention groups.^{30,68,69,73} In the study by Hui et al, even though they failed to show significant differences in the amount of weight gain between the intervention and control groups, the participants in the intervention group had a significantly lower prevalence of excessive gestational weight gain (EGWG) based on the IOM recommendations.³⁰ The opposite was found in the study by Asbee

et al. In this study, the participants in the intervention group gained significantly less pounds during pregnancy compared to the control group, but the percent of participants that met the IOM recommendations was not significantly different between groups.⁷⁴ Differences between the studies could have been due to: participants' pre-pregnancy BMI, amount of weight gained before the intervention began (but after conception), and/or the intensity or format of the intervention.

Interestingly, in one nutrition education intervention, only those participants that were low-income had lower odds of gaining excessive gestational weight (OR=0.41, 95% CI=0.20-0.81) compared to participants with higher incomes.⁷⁵ However, in this study, the authors did not account for participation in The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), therefore, we do not know if those low-income participants were enrolled in WIC and if this had any effect on the lower risk for gaining excess weight during pregnancy.

Consistently, results from multiple studies showed that nutrition education interventions do not significantly affect the mean birth weight of the babies in the intervention versus the control groups.^{30,69,71,73} Results from two studies showed that nutrition education interventions had no significant effect in large-for-gestational age infants.^{30,73}

With regards to physical activity during pregnancy, studies have shown mixed results. Hui et al found significant improvements in physical activity in those women receiving interventions on diet and exercise.³⁰ Jackson et al found a significant difference in minutes of exercise per week within the intervention group, but when compared to the control group, the time difference was not significant, both had increased the time exercised per week.⁶⁸ In contrast, results in a study by Polley et al failed to show significant improvement in the exercise levels of

pregnant women in their intervention group.⁷⁶ This could be due to differences in the intensities of the interventions as well as differences in the self-reporting of participants.

Programs such as WIC and the Expanded Food and Nutrition Education Program (EFNEP) reach large numbers of low-income families, providing them with nutrition education. WIC is a federally funded program that began in 1972. WIC's mission is "to safeguard the health of low-income women, infants, and children up to age 5 who are at nutrition risk by providing nutritious foods to supplement diets, information on healthy eating, and referrals to health care."⁷⁷ Low-income pregnant women can enroll in the WIC program to receive nutrition education, vouchers for supplemental nutritious foods and referrals for other resources.⁷⁸

In the fiscal year 2012, 14 million people were eligible to participate in WIC, but 8.8 million people were actually participating in the program.⁷⁹ Fifty three percent of infants in the US participate in WIC.⁸⁰ In 2012, 56.9% of the participating pregnant women enrolled during their first trimester while 34.7% and 7.8% enrolled in their second or third trimester, respectively.⁸¹

Although the number of people in WIC is large, not all eligible individuals, who can benefit from WIC, are enrolled in the program.⁷⁹ For this reason, other programs such as the Expanded Food and Nutrition Education Program (EFNEP) can have an important role in educating low-income pregnant women and providing referral to other programs such as WIC.⁸² EFNEP's mission is "to assist limited-resource audiences in acquiring the knowledge, skills, attitudes, and changed behavior necessary for nutritionally sound diets, and to contribute to their personal development and the improvement of the total family diet and nutritional well-being."⁸³ The target audience for EFNEP includes low-income pregnant women.⁸² Considering the nutrition education needs for pregnant women, EFNEP in Colorado and California created an

optional lesson for the curriculum *Eating Smart • Being Active* entitled *Eating Smart and Being Active During Pregnancy*.⁸⁴ One objective of this lesson is to provide low-income women with research-based information to help them develop skills to have healthier eating patterns during pregnancy.

The Expanded Food and Nutrition Education Program (EFNEP)

Brief History

EFNEP has been educating low-income families about nutrition since 1969. At the time when the program was initiated, low-income families were suffering from hunger. Today, the program is still helping low-income people to have a better diet with the resources they have, but the current nutritional issues also include overconsumption of foods low in nutritional value, overweight, and obesity.⁸²

EFNEP is federally funded and it is administered by land-grant universities in all 50 states and the US territories. Other program characteristics include hiring paraprofessionals (peer educators) to teach low-income people through individual or small group nutrition classes, which are research based and promote the messages from the Dietary Guidelines for Americans.⁸² The program delivers the lessons in the communities where the EFNEP participants live. The lessons have the objective to provide knowledge and skills to EFNEP participants, so these participants can improve their quality of life by improving the quality of their diet, physical activity, food safety, and budget management to purchase healthier foods. Participants in the program can also receive referrals to community resources and other programs.⁸²

Outcomes

During the 2014 fiscal year, 121,850 adults and 392,563 youth participated in EFNEP with 359,545 other family members benefiting from the program.⁸⁵ At the national level, 8% of

adult EFNEP participants were pregnant and 3% were nursing.⁸⁵ The percent of pregnant women varied greatly across states, for example, in Colorado 30% of participants were pregnant.⁸⁶ Incomes reported by participants showed that 85% of EFNEP families nationally were living at or below 100% of the poverty level.⁸⁷

In 2014, adult and youth participants received an average of 7.9 and 6.1 lessons respectively.⁸⁶ Results from economic evaluations of EFNEP have shown that the costs of implementing the program were lower than the program's benefits to society.^{88,89} Self-reported measures from EFNEP participants have shown that EFNEP has been effective at changing people's eating habits; results from the fiscal year 2014 showed that 89% of adults improved their nutrition practices, 84% improved their use of food resources, 66% improved food safety behaviors, and 38% reported increasing their exercise levels.⁸⁷

Paraprofessionals

EFNEP paraprofessional Nutrition Educators' Characteristics

Since the beginning of the EFNEP program, paraprofessional nutrition educators have been hired to deliver nutrition lessons designed for low-income families.⁹⁰ The American Public Health Association provides a comprehensive definition of community health workers that reflects the reasons EFNEP employs paraprofessional nutrition educators:

A community health worker is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. A community health worker also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy.⁹¹

EFNEP paraprofessionals are community health workers who are considered peer educators because most of them are indigenous to the communities that they serve. This means

that they are likely to share cultural backgrounds and life experiences with EFNEP participants.^{82,92} To work for EFNEP, paraprofessionals are required to have at least a high school diploma or equivalent and having additional formal education is not considered as adding benefits to the program.⁸² Nonetheless, some studies done with EFNEP paraprofessionals have reported demographics that indicated that many had at last some post-secondary education.⁹³⁻⁹⁵ Nevertheless, it is more important that paraprofessionals belong to the communities where they work, can learn how to teach the nutrition lessons, desire to provide good quality instruction, can influence program participants' lives, and are invested in working with low-income participants.⁸² Besides their role as educators, paraprofessionals may also be mentors to those people participating in EFNEP.⁹⁴

In addition to impacting its participants' quality of life, EFNEP also impacts the quality of life of paraprofessional nutrition educators working for the program.⁹⁶ In a study by Hibbs and Sandmann, EFNEP paraprofessionals participated in focus groups and reported that working for the program improved their teaching and speaking skills, nutrition knowledge, food related behavior, and self-esteem. In the study, paraprofessionals also reported that they felt proud of being recognized by members of their communities, they became less judgmental and more compassionate of those they served, and paraprofessionals mentored each other.⁹⁴ Furthermore, EFNEP empowers paraprofessionals and provides opportunities for continuing their education, encouraging them to advance professionally.⁸²

Training EFNEP paraprofessional Nutrition Educators

Paraprofessionals have the majority of the face-to-face contacts with the EFNEP target audience, thus their performance can influence the program's outcomes. Therefore, the hiring and training processes are important.⁹² A list of core competencies that paraprofessionals should

have, at the time of being hired and after training, have been developed and can help in the selection and preparation of the best candidates for the paraprofessionals' position.^{97,98}

Paraprofessionals' training can be divided in two types, initial and ongoing. Initial training is provided soon after they are hired and should be completed before paraprofessionals initiate their job responsibilities. Ongoing training corresponds to subsequent trainings opportunities.⁹²

Some important characteristics of an effective initial training include having clear learning objectives based on achievement, establishing a safe learning environment, teaching basic job task competencies, and providing the content of the training in a level of difficulty that increases over time (meaning that the new content in a session builds on the previous information).⁹² It is also important to allow trainees to connect the information they are learning to their life and previous work experiences, to create learning activities as a dialog and not a monolog (ideally the learning activity should have the following three components: content, action, and reflection), to use open ended questions, and to give an opportunity for the trainees to practice the skills they will need in their job.⁹²

Ongoing training can be very useful to help paraprofessionals “build upon existing skills, re-visit difficult tasks, enhance coworker relationships, address changes in subject matter, adapt to changes in expected program outcomes, and adjust to changes in organizations.”⁹² This training can be one-to-one, for example supervisor to paraprofessional, or be provided to a larger group. It can occur in different settings such as on the job, a training facility, or even at home if it is done online. Ongoing training is especially important considering that paraprofessionals benefit from “structure, repetition, practice and support.”⁹² This training allows paraprofessionals

to “improve their skills beyond minimum performance expectations and move toward levels that exceed expectations.”⁹²

EFNEP supervisors are in charge of training EFNEP paraprofessionals and this training presents some challenges. There are several demographic variables that vary greatly among these employees, as reflected in some studies targeting EFNEP paraprofessionals. These variables include age,^{94-96,99,100} race/ethnicity,^{94,96,99} years as EFNEP educators,^{94,95,99,100} and formal education.^{93,94,96} Furthermore, paraprofessionals are different from professionals in several aspects and this also has an impact on how to train them.⁹² Their previous work experience, if any, is often from less formal settings, where they have had fewer experiences with supervision and evaluations. They are usually less tolerant of ambiguity and have fewer strategies to review new information on their own.⁹² Also, some may not feel comfortable using technology.⁹⁵ Most of them do not bring expertise in the subject matter they will teach when they start working for EFNEP, thus their training is essential for them to succeed in their job.^{92,101}

Other challenges of training paraprofessionals include the large amount of information to cover in initial trainings.¹⁰² For example, after being hired, paraprofessionals need to learn how to teach each lesson plan (in 2014 adult EFNEP participants received an average of 8 lessons)⁸⁶ and understand the nutrition content that supports each lesson to address EFNEP participants’ questions. They also need to learn all aspects of their role, including how to recruit participants, complete paperwork, the rules of the organization,¹⁰² and new terminology for concepts usually used in Extension.¹⁰³ This means that the time required to train paraprofessionals may be burdensome for EFNEP professionals, and because paraprofessionals are geographically dispersed throughout a state, scheduling state-wide trainings can be a challenge.¹⁰² In addition, the content in the curriculum that paraprofessionals teach should be based on the Dietary

Guidelines for Americans.⁸² Because the Dietary Guidelines for Americans are revised every five years⁴ additional training would be needed to update educators' knowledge. An additional challenge related to EFNEP's trainings is that training methods and frequencies vary by state.¹⁰² The "Best Practices in Nutrition Education for Low-income Audiences" report recommends delivering nutrition programs, trainings, data collection, and evaluations with fidelity.¹⁰⁴ In this document, it is stated:

Fidelity refers to the implementation of an intervention consistently and as intended. Implementing an intervention with high fidelity to the original design increases the likelihood that the efficacy of the intervention will be replicated in the new setting. When multiple program sites implement the same intervention with fidelity, the aggregation of intervention outcomes is feasible. It is imperative for educators – or whoever is delivering the intervention in the field – to understand the importance of and how to maintain fidelity. This is a topic that may be introduced in the initial training, and – ideally – reviewed throughout employment.¹⁰⁴

The *Eating Smart • Being Active* curriculum is used in 44 states.¹⁰⁵ Thus, a standardized training for this curriculum could help increase the chances of delivering the *Eating Smart • Being Active* lessons within and across states with fidelity. One solution for delivering standardized training for paraprofessional nutrition educators located in different states, who work in different time zones, could be to develop and provide an online training. There are a few online trainings for paraprofessional nutrition educators.^{106,107} However, only one state, Utah, has published the results of an online training for paraprofessionals in a peer reviewed journal.¹⁰⁶ Christofferson et al, the researchers from Utah, found that participants that took the training had significantly better scores in their nutrition knowledge after completing the training. In addition, the majority of the paraprofessionals were satisfied with the online training and the distance training was less expensive compared to in-person trainings.¹⁰⁶

However, this investigation had some limitations. Researchers did not report paraprofessionals' input into the training content or training preferences, and there was no

theoretical framework used to develop the training. The sample of trainees was very small (n=22) and only from one state. Also, two primary objectives of the training were to examine the effectiveness of the online training on paraprofessionals' knowledge and self-confidence and investigators concluded that the online training was effective at increasing both outcomes. However, the investigators used only one question to measure self-confidence. Furthermore, that question was part of the satisfaction survey, which only 15 of the trainees completed (59%). Finally, although there was a significant difference in the mean score of the pre- and post-knowledge tests, at least 30% of the paraprofessionals did not reach the 80% proficiency at post-test, which the researchers established as minimal proficiency required to pass from one lesson to the next.¹⁰⁶ Even though, the overall results of this study were positive, further research on the effectiveness of online trainings for paraprofessional nutrition educators is needed to more confidently conclude that online trainings are a good staff development option for paraprofessional educators.

Online Staff Training

Computer based trainings and/or online trainings have been used as a solution to similar challenges as those presented in training EFNEP paraprofessionals. For example staff in nursing facilities have a wide range of formal education going from less than high school to advanced degrees, speak different languages, have high staff turnover, have different levels of previous preparation in the trainings' subject matter, and are hard to train simultaneously because of their work schedules.¹⁰⁸ Other staff similar to EFNEP paraprofessionals, who have received online trainings, include: nurse aids,¹⁰⁹ SNAP-Ed paraprofessionals,¹⁰⁶ community health nurses,¹¹⁰ community health workers,^{111,112} and workers in food processing facilities.¹¹³

Distance education and trainings have been delivered asynchronously (learners can access the training at any time)^{106,109,112,114-117} and synchronously (all learners need to be connected at the time that the training is offered).¹¹¹ Formats to offer distance trainings vary greatly, from DVDs,^{118,119} or CD-ROMs,^{108,112,120} without requiring the learners to have access to the Internet, to virtual realities.¹²¹ Some researchers have used online delivery only^{106,109,115,116,122} and others a mix of distance and face-to-face delivery methods.^{110,111}

Benefits and Limitations

Online trainings present several benefits for organizations facing challenges offering in-person trainings. For example, trainings offered using computers allow employees with different educational experiences, reading skills, and primary language, to complete the training at their own pace.¹¹³ Presenting the same training in different languages is easier when trainees receive training using a computer rather in-person.¹⁰⁸ Furthermore, staff with more experience in the topics offered in the training can skip the section they have previously mastered, while those new to the topic can revisit the content more than once, until they master the material.¹⁰⁸ In organizations with high staff turnover, delivering computer based or online trainings instead of in-person trainings, gives the flexibility to provide immediate training to new staff and can allow trainers to save time,^{106,113} which they can use to manage the overall employees' development program.¹⁰⁸

Online training also provides the possibility to offer training to staff in remote locations,^{106,111} reduce the cost of trainings due to travelling,¹⁰⁶ provide standardized training,^{106,113,123} assess learning via standardized testing, automatically document learners participation and progress, allow learners to revisit training's information,^{106,109,120} and provide

training in more flexible schedules.^{106,108,114} It can also provide immediate feedback to learners,^{110,114} and accommodate different learning styles.¹¹⁰

In addition, many paraprofessionals are mothers, thus devoting extra time to travel and attend in person training sessions can complicate their personal lives.¹⁰⁶ Online training provides a solution to this problem because it can be completed during their work hours at the office, or from home.¹⁰⁸ Furthermore, participating in online training is an opportunity to acquire computer skills.^{106,112,124} Developing basic computer skills is a job competency that paraprofessionals need to have to perform their job.^{97,98}

Online training could provide an opportunity to disseminate new information¹¹⁴ and to more easily update any training information that changes over time.¹⁰⁸ For example, having an online training for EFNEP paraprofessionals in place, could help disseminate updates made to the Dietary Guidelines for Americans, which are revised every five years.⁴ This is important in EFNEP because the nutrition lessons are based on the messages from the Dietary Guidelines,⁸² therefore, paraprofessionals need to receive updated information quickly, so they teach current information.

However, providing online/computer based training has also some limitations. The learners will need to have, at a minimum, some basic computer skills.¹¹² An instructor may not be available to answer trainees questions.¹⁰⁸ They may feel anxiety when confronting online or computer based training for the first time.^{106,110,116} Softwares can be incompatible with some types of Internet connection.^{106,111} Online training can feel isolating for some learners; lack of interaction with peers and instructors can be challenging for some people.^{116,117,124} Employees will need access to computers^{108-110,120,125,126}; therefore the organization needs to allow them to use the technology available in the organization.¹²⁶ Learners will need to allocate time to

participate in the training because, often, there is not scheduled time established to take an online training as there is for face-to-face trainings.^{116,117,126} After an online training, the ability to practice new skills on the job will likely still be needed.¹²⁵ Thus, adding an opportunity to practice new skills may be needed after the online training.¹⁰⁸

Results

Kirkpatrick's four levels of evaluation are well accepted as a method for evaluating training programs. The four levels of evaluation are: *reaction*, *learning*, *behavior*, and *results*. As one moves from one level to the next, the difficulty and time required to assess each level increases.¹²⁷ Briefly, evaluating *reaction* is to assess how the participants in a training program react to the training, i.e., how satisfied the participants are. Evaluating *learning* is to assess acquisition of knowledge, skills, or attitudes. Evaluating *behavior* is to determine the transfer of what has been learned in the training into the job the person performs. Finally, evaluating *results* refers to determining what changed in the organization due to the training of its employees.¹²⁷

In training programs it is not always apparent that training developers are using Kirkpatrick's four levels of evaluation, but most evaluation methods can be classified as levels one (*reaction*) and two (*learning*: knowledge, skills, or attitudes); this is probably due to time constraints and the complexity of evaluating levels three (*behavior*) and four (*results*). For example, to evaluate level one (the satisfaction of those that participated in the training), researchers have used post-training surveys,^{106,108,109,114,117,120} interviews^{110,113,126} and/or focus groups.¹¹¹ When evaluating level two (learning: knowledge, skills or attitudes), the most popular system used was a pre/post-test.^{106,108,109,111–114,117,120} Researchers in one study used a post-then-pre questionnaire to assess changes in the personal hygiene attitudes among workers in food processing facilities.¹¹³ Another study, where investigators were training people to mark essays,

researchers assessed the acquisition of trainees' skills by reviewing the accuracy of the marking of essays before and after the training.¹²³ Some researchers have used video situation testing (videos demonstrating real life situations that trainees could experience at work), to evaluate trainees' learning of skills taught in the training and their self-efficacy to react to the situations presented in the videos.¹⁰⁹ Presenting written scenarios has also been used to assess if trainees learned the skills taught in the training.¹¹²

To evaluate level three (behavior), researchers in one study used a self-administered survey. In this study, participants self-reported if they used the content in the online continuing education course and how. They also answered if they used the diagnostic screening tools that were provided during the online course with their patients.¹¹⁴ In another study, investigators added questions in the pre/post-test asking workers how likely they were to use the practices taught in the training.¹⁰⁸ In a different study, farmers that participated in a computer based training were contacted after almost two crop seasons to ask if they adopted practices taught in the training.¹²⁰ Finally, investigators evaluating an online training to improve employees' ability to effectively provide social security services in Thailand, looked at the organization's annual report of complaints related to the employees' performance when providing social security services, and they found that the number of complaints had decreased after the online training.¹¹⁷ This could be considered a level four evaluation.

Evaluations of trainees' satisfaction with computer-based or online trainings have shown that staff considered them "better" than in-person trainings¹⁰⁸ and felt that they were easy to use.^{108,109,113} Even though, researchers have also reported that many employees face a learning curve when starting distance training, they also reported that staff quickly learned how to participate in the training.^{106,109,110} As a result of participating in computer-based distance

trainings many workers have also developed a positive attitude towards this type of staff development.^{110,120}

Online or computer based trainings, with or without a combination of face-to-face training, have been effective at increasing workers' knowledge,^{106,108,109,111,114,117,120} confidence or self-efficacy in performing their job or using what they learned in the training.^{106,109,111} Changes in trainees' attitudes, other than self-efficacy, towards topics discussed in the training have also been measured.^{109,111,113} In addition, trainees have self-reported acquiring new skills^{110,111} and additional resources^{111,114} to perform their job responsibilities. Trainees have also self-reported transferring the new information or practices into their work activities.^{114,120} However, one study found that the group that received computer based training and the group that received in-person training had significant improvements only in knowledge, not in attitudes or likelihood of engaging in trained practices in the future, when compared to the control group (no training). Nonetheless, at post-test, the scores of knowledge and attitudes were significantly correlated; the scores of attitudes and likelihood of engaging in trained practices in the future were also correlated.¹⁰⁸

Mastery is an important evaluation measure in criterion based trainings. Trainees can be classified as "masters" if they score above a certain percentage of the total possible score in an evaluation, for example 80%, which reflects that the trainees have mastered the competencies assessed in the evaluation.¹²⁸ Some researchers have assessed whether trainees master competencies as a result of an online training and found positive results.^{106,112} Other researchers explicitly report that the evaluations in their training research are criterion based, however, they do not report what is an acceptable passing rate or cut off to classify trainees as masters.^{108,109} This may have been because investigators in the latter group were more interested in comparing

significant differences in mean scores between groups, or changes over time within the same group of trainees. However, training should be provided to help employees achieve the competencies (knowledge, skills, attitudes) they need to do their work¹²⁹ and performance evaluations should measure whether competencies have been achieved. What degree of achievement would be acceptable should be established before the training is delivered.¹²⁸

Lessons Learned from Previous Research

Many factors can affect the success of an online training. Technical^{106,126} and organizational¹²⁵ supports are needed. Technical support can be given using an e-coach (a person that can be in charge of helping the learners undergo the online training).¹³⁰ Based on adult learning principles, a good e-coach, should facilitate the transition of trainees from dependent to independent learners.¹³¹ This is because, adults prefer to be self-directed learners, but being self-directed for the first time is not easy and some scaffolding may be needed.¹³¹

Organizational support is a primary type of support needed.¹²⁵ Individuals and the organization as a whole, should be willing to accept the changes in training strategies if online learnings will be implemented.¹²⁵ A needs assessment is vital in any type of instructional design, including for online trainings.¹³² Different stakeholders should participate in planning and implementing the online training.¹²⁵ Supervisors need to be supportive of their workers by providing them with time,^{113,126} computers,^{110,125} Internet access,¹²⁶ decreased work load,¹¹⁶ and supervision (as needed) when taking the training.¹²⁵ When the employees' work schedule is full, it may be necessary for them to complete the training outside of work,¹²⁴ but it is also important to compensate them for the time invested beyond their daily work schedule.¹¹⁶

Trainees have positively evaluated trainings that they completed at their own pace.^{106,110,113,114,120} In one study in the mining industry, one suggestion was to allow more

experienced employees to choose the content most relevant to their needs, while those with less experience could complete the online training in a more structured fashion, this was considered a great opportunity to provide self-paced training.¹²⁵ It is important, however, to make sure that the online training software saves trainees' progress, because participants have complained about trainings where their progress was not saved and they had to re-do their previous work.¹⁰⁶

To facilitate positive experiences with distance training, it is important to communicate to employees what level of computer skills they will need, as well as the characteristics of the equipment or software that they will need to use.¹²⁴ Another alternative is to provide pre-training to help employees develop some basic computer skills, so they can successfully complete the online training.¹¹² To avoid stress, frustration, or anxiety undergoing the training,¹⁰⁶ the software used to develop the online training needs to be compatible with the types of computers and Internet connections that workers have available.^{111,115} Having an orientation session can help to communicate what skills, equipment, Internet or software the employees may need to participate in the training.^{124,133}

In terms of format to present the content in the online training, employees have reported that they considered short videos interesting and enjoyable.¹²⁰ Videos have been used to depict correct and incorrect behaviors of nurse aids handling aggressive nursing home residents. These videos were effective at increasing staff knowledge and self-efficacy in managing aggressive residents. However, the authors also recognized that video production is expensive.¹⁰⁹ When text is used, learners have reported that they like when text is broken down in short sections¹¹⁴ or minimal; images are often preferred over written content.¹²⁵

The content in the training needs to be relevant to the training participants; they need to see the value of the training.¹²² The training should provide content that is useful to the workers

when performing their job tasks.^{114,125} This is in accordance with one of the characteristic of adult learners, the “need to know.” Adults need to understand *why* they have to learn something before they are motivated to engage in the learning process. To facilitate learning, a good training should start by presenting how the online training is relevant to the trainees’ job responsibilities.¹³¹

It is important that the online training be developed at a literacy level that can include a wide array of trainees’ literacy levels.¹¹³ Also, online trainings need to be user friendly; this will likely increase participants’ involvement in the training.¹²² Navigating an online training should be easy to avoid trainees’ frustration.¹²⁵ Providing an outline of the training objectives, content, and evaluations is recommended to help with trainees’ understanding of the organization of the training.¹¹⁴ It is also important to pilot test the training, learning activities, and evaluations with potential users to make sure that they understand the directions and can complete the training by themselves if it is designed to be a self-directed training.^{110,115}

Some suggestions to facilitate participation in an online training are the use of chat discussions or hybrid training that combine face-to-face with online activities.¹¹⁶ Some emphasize the importance of providing problem-based learning activities, to incentivize active participation.¹¹⁴ Interactions among peers during the online training, as well as with the training facilitator, have been reported as important to workers.¹²⁵

Trainees’ motivation is an important factor in learning.¹³⁴ Adult learners can be extrinsically motivated by incentives such as a raise in salary, a better position in a company, or additional benefits after undergoing the training. However, adults will be more motivated to learn by internal desires such as wanting to feel more satisfied with their work or to have a better quality of life (intrinsic motivation).¹³¹ The issue of motivation is even more critical in self-

directed learning environments, because instructors or trainers cannot respond promptly to students' changes in motivation. Therefore, during the needs assessment, it is important to determine strategies to increase and maintain motivation throughout the course of an online training based on the characteristics of the learners and the learning materials.¹³⁵ Different factors in distance training have been shown to affect motivation. Factors that increased motivation are: incentives for participation,¹²⁵ a topic that is relevant to the workers' based on their job responsibilities,¹²⁶ use of research based principles to design instruction that motivates learners,¹³⁴ and the support provided to trainees.¹²⁶ Factors reported to decrease motivation include facing difficulties with technology at the beginning of the distance training and a lack of support to overcome them.¹²⁶

When evaluating the training, researchers need to keep in mind that using too many types of evaluations can burn out participants.¹¹⁶ People that have taken online trainings emphasized that they liked to receive quick feedback, preferably immediately, after going through practice activities or evaluation.^{110,114,120}

One particular study provided valuable information about problems encountered with the target population and methodology chosen for the study. Employees whose first language was not English, had higher scores in the knowledge assessments as their ability to speak, read, or write in English was higher.¹¹³ In addition, researchers observed significant improvements in the knowledge of people in the control group. One explanation the authors proposed was that, perhaps, people from the control group talked to employees in the intervention group. The authors suggested using cluster sampling to prevent contamination and to separate the pre and post-test by more than one week to prevent the workers from remembering their answers.¹¹³

Based on the finding from the literature, it is clear that many aspects need to be taken into consideration when developing online trainings.

Summary

Many low-income pregnant women have reported inadequate diets.⁴⁸⁻⁵⁴ In addition, less than one third of the pregnant women in the US gain weight within the IOM recommendations.¹² Women gaining excessive weight during pregnancy can have greater difficulty going back to their pre-pregnancy weight after delivery.¹³

To help low-income pregnant women make better decisions about their diet, EFNEP in California and Colorado developed the supplemental lesson: *Eating Smart and Being Active During Pregnancy*,⁸⁴ which is an optional lesson that complements the 8 core lessons from the *Eating Smart • Being Active (ESBA)* curriculum.¹³⁶ The supplemental lesson *Eating Smart and Being Active During Pregnancy* addresses healthy eating during pregnancy, the importance of prenatal care, low risk physical activity, food safety, and referrals to other programs in the community.⁸⁴

Paraprofessional nutrition educators, people usually from the same community that the program serves, teach the nutrition lessons to low-income families.⁸² They have life experiences and/or cultural backgrounds similar to those whom they teach.^{82,92} The training that paraprofessionals receive is fundamental for the success of the program.^{92,94}

However training EFNEP paraprofessionals presents several challenges. Several of their demographic characteristics vary greatly including: age,^{94-96,99,100} race/ethnicity,^{94,96,99} years as EFNEP educators,^{94,95,99,100} and formal education.^{93,94,96} Furthermore, paraprofessionals are different than professionals in several aspects and this also has an impact on how to train them.⁹² Most of the paraprofessionals do not bring expertise in the subjects they will teach.^{92,101}

Other challenges of training paraprofessionals include the large amount of information that needs to be provided in their initial training.¹⁰² This means that the time required to train paraprofessionals may be burdensome for EFNEP professionals, and because paraprofessionals are geographically dispersed throughout a state, scheduling state wide trainings can be a challenging and expensive.¹⁰² In addition, the content in the curricula that paraprofessionals teach should be based on the Dietary Guidelines for Americans⁸²; and these guidelines are updated every five years⁴; therefore additional training would be needed to update educators' knowledge. Finally, EFNEP's trainings are not standardized,¹⁰² even when 44 states use the ESBA curriculum.¹⁰⁵

Because of the training challenges, the propose of this investigation is to develop an online training for the *Eating Smart and Being Active During Pregnancy* lesson. To do this, a needs assessment will be completed prior to designing, implementing, and evaluating the online training for paraprofessional nutrition educators. An online training format was chosen because it presents advantages that can help address some of the challenges experienced when training paraprofessionals: offering training to remote locations, reducing the cost of trainings from travel,¹⁰⁶ providing an opportunity to acquire computer skills,^{106,112,124} providing standardized training,¹⁰⁶ assessing learning via standardized testing , automatically documenting learners participation and progress, allowing learners to revisit training's information,^{106,120} providing training in more flexible schedules,^{106,108,113,114} ¹⁹³ providing immediate feedback to learners,^{110,114} accommodating learning strategies for different learning styles,¹¹⁰ and more easily updating any training information that may change over time.¹⁰⁸ This online training will provide information on how to teach the *Eating Smart and Being Active During Pregnancy* lesson, an explanation of the nutrition content behind this lesson, and any other content indicated by

EFNEP employees during the needs assessment. This online training seeks to prepare paraprofessionals to teach the prenatal lesson and to allow them to accurately answer frequently asked questions from pregnant EFNEP participants.

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CHAPTER 3 - ONLINE TRAINING FOR EFNEP PARAPROFESSIONAL NUTRITION EDUCATORS ADDRESSING PRENATAL NUTRITION: ASSESSING EDUCATORS AND SUPERVISORS' NEEDS¹

Introduction

Researchers have estimated that about half of the pregnancies in the US are not planned; for women living below the federal poverty level, 65% of pregnancies are unplanned.¹ Most pregnant women are not gaining weight according to the Institute of Medicine's recommendations.² In addition, although the benefits of breastfeeding are well known,³ the Healthy People 2020 Objectives for Breastfeeding have not been reached.⁴ Furthermore, many babies receive solid foods earlier than recommended.⁵ To educate pregnant women about prenatal nutrition and infant feeding, program leaders from the Expanded Food and Nutrition Education Program (EFNEP) in Colorado and California created three optional lessons: "Eating Smart and Being Active During Pregnancy,"⁶ "Feeding Your New Baby,"⁷ and "Feeding Your Baby Solid Foods,"⁸ which are supplemental lessons of the "Eating Smart • Being Active" curriculum (ESBA).

EFNEP is delivered in all US states and territories providing low-income families with education to help improve their quality of life, focusing on helping them to improve their diets, physical activity, food safety, and how to save money while buying healthier food options for their families.⁹ In EFNEP, nutrition education lessons are taught by paraprofessional educators, who are usually indigenous to the communities that EFNEP serves, and share life experiences similar to the EFNEP audience. Paraprofessional educators are required to have at least a high school education or equivalent.⁹ After being hired, they are trained in relevant content as well as

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how to teach the curricula chosen by their state program.¹⁰ Paraprofessional educators also receive ongoing training to keep their knowledge up to date and reinforce their teaching skills.¹¹

Training paraprofessional educators is time consuming¹⁰ and requires a substantial investment of program resources. Identifying ways to effectively and efficiently train educators could save resources that could be used for program delivery. Online trainings could be a cost effective method for training paraprofessional educators. Investigators in one study looked at the effectiveness of online trainings to provide nutrition knowledge to paraprofessional educators.¹² Christofferson and colleagues found that their online training saved money compared to training educators in person. Their results also indicated that paraprofessional educators can increase their knowledge by participating in an online training.¹² What is not known is if an online training could be an option to effectively train EFNEP paraprofessional educators on how to teach a nutrition lesson.

To create an effective and appealing training, developers should use a systematic instructional design model.¹³ Online training provides an opportunity to combine video, audio, and text,¹⁴ potentially enhancing paraprofessional educators' learning. Integrating opinions of members of the target audience is essential in the formative stages of instruction design.¹³ Thus, EFNEP professionals and paraprofessional educators should be consulted when designing an online training to meet the needs of both groups.

For this reason, the purpose of this qualitative study was to follow instructional design practices, as described by Smith and Ragan,¹³ to analyze: 1) the “learning context” and 2) the “learners’ characteristics,” by interviewing EFNEP professionals and paraprofessionals. Analyzing the “learning context” includes both, assessing “instructional needs” (in other words, if there is a need for an online training to train paraprofessional educators on how to teach the

maternal and infant lessons) and assessing the “learning environment” (understanding the context in which the online training would be used). Analyzing the “learners’ characteristics” involves understanding the paraprofessional educators' similarities and differences, which can affect the design of the online training. The ESBA curriculum is used in 44 states,¹⁵ and the audience that EFNEP serves includes pregnant women. According to the fiscal year 2014 national report, 121,850 adults participated in EFNEP, 9663 (8%) of the adult program participants were pregnant, but only 4109 (3%) were nursing.¹⁶ Thus, if a need for an online training on these maternal and infant lessons exists, The Eating Smart and Being Active During Pregnancy would be an appropriate prenatal lesson to feature in the training because this curriculum is widely used.

Methods

Design

This was a cross-sectional study using qualitative telephone or in-person interviews. Colorado State University’s Institutional Review Board approved this study. EFNEP state program offices were contacted and invited to participate. A purposeful sample was used in an attempt to maximize the representativeness of the data. The goal was to interview EFNEP professionals (supervisors who had been involved in training paraprofessionals on the maternal and infant lessons) and paraprofessionals in at least 3 geographical regions, until saturation was reached.

A list of states that had purchased the maternal and infant lessons was used to determine the states from which to draw the sample. The two states that had purchased the largest number of maternal and infant lessons were the first to be contacted and interviewed. After analyzing

data from the initial two states, one more EFNEP state program office was asked to participate to confirm saturation of the main themes found.

Participants

Criteria for participation for educators were to be working for EFNEP and to have been trained on the maternal and infant lessons. In each state, researchers tried to interview educators with and without actual teaching experience with the maternal and infant lessons. Professionals had to be working for EFNEP and be involved in the curriculum training of paraprofessional educators.

All recruitment happened via e-mail. The first e-mail was sent to EFNEP coordinators, who were asked to provide the name of at least 1 professional and 3-4 educators that met the inclusion criteria. The potential interviewees were contacted by e-mail. Once participation was confirmed, a day and time was scheduled for a telephone or in-person interview. Informed consent was received orally before telephone interviews. Signed consent was collected at in-person interviews. Seven EFNEP professionals (from 4 states) and 15 educators from 3 states were interviewed (10 had taught a maternal or infant lesson at least once and 5 had not).

Instruments

The principal investigator developed the semi-structured interview protocols using tenets of instructional design¹³ and adult learning principles.¹⁷ Two experts in qualitative research and an expert in training paraprofessional educators reviewed the protocols. Different interview protocols were developed: one for trainers (EFNEP professionals), one for paraprofessional educators with experience teaching the lessons, and one for paraprofessional educators without experience teaching the maternal and infant lessons. Interview questions included: *“Please describe any training that you have received to prepare you to teach these three supplemental*

lessons” “*What problems or challenges do you see with the implementation of the supplemental lessons?*” “*What type of experience do you have taking online trainings?*” “*How could an online training on these three lessons help you feel better prepared to teach the three supplemental lessons?*” “*What should be included in this online training?*” The interviewer conducted practice interviews before starting data collection. Using a semi-structured interview guide, the interviewer was able to probe for more details. The protocol was modified slightly if analysis of completed interviews showed that additional probing was needed to confirm information.

Data Collection

The principal investigator was the sole interviewer and followed Patton’s qualitative interviewing recommendations to the extent possible.¹⁸ Interviews were audio recorded. Throughout each interview, the principal investigator summarized the ideas heard from the participants and asked them to confirm interpretations. An individual who was not part of the research team transcribed each interview verbatim. The interviewer reviewed each transcript against the recording to confirm accuracy.

Data Analysis

Transcripts were analyzed using primarily a deductive thematic approach.¹⁹ The initial coding of the interviews was done using a priori codes developed from the theoretical frameworks used to create the interview questions; new codes were added when needed. The principal investigator and a second coder, with experience in qualitative research, coded all transcripts independently. Both coders met to discuss their independent coding until consensus was reached. NVivo 10 (QSR International Pty Ltd, Victoria, Australia, 2012) was used to manage the data. The most important themes were determined predominantly based on

frequency of comments and organized based on Smith and Ragan's¹³ instructional design recommendations to confirm the "*learning context*" and "*learners' characteristics*."

Results

Demographic characteristics of study participants are shown in Table 1.1 The majority of the interviewees were women. Most professionals identified themselves as white. Common self-reported race/ethnicity among educators were white and Hispanic. Most professionals had master's degrees. Most paraprofessional educators had some post-secondary education.

Themes were organized based on Smith and Ragan's instructional design model (Appendix A).¹³ Table 1.2 presents the primary findings and quotes. Below, primary findings are described in more detailed.

Learning Context: Instructional Needs

Currently, training for the *ESBA* maternal and infant lessons is face-to-face, usually in a group setting. Systems for training varied among states and sometimes within states, including: reviewing the maternal and infant lessons alone or with supervisors, having group discussions, filling in the blank questions on index cards, and, most frequently, using role plays to learn how to teach the lessons.

Professionals and paraprofessional educators expressed challenges with their current training methods for the maternal and infant lessons. Professionals mentioned that the current training for these lessons is usually more time consuming than the training for core lessons, which are taught to all EFNEP participants. Furthermore, educators remembered feeling overwhelmed when they were recently hired due to the amount of information provided to them, including learning how to teach each core lesson as well as the optional lessons. Professionals and paraprofessional educators identified the need for refresher trainings on the maternal and

infant lessons because educators do not teach these lessons on a regular basis. Several professionals considered that providing in-person refresher trainings was time consuming. It was also evident that there is no standardized training across states for these lessons.

All professionals and most paraprofessional educators supported the idea of implementing an online training as a review for how to teach the maternal and infant lessons that could be accessed as needed. Professionals felt that the online training could alleviate some of their workload and time currently used to develop and deliver refresher trainings, but they also expressed that it could save trainers' time during initial training for new educators when they typically have to demonstrate how to perform each activity in each lesson. Professionals also valued the consistency in training that an online delivery could provide and some professionals also thought that the online training might motivate educators to teach the maternal and infant lessons more often. Furthermore, educators expressed that the online training could help them increase their confidence in their teaching skills.

Learning Context: Learning Environment

Most supervisors recognized that they would need to assist their educators and were willing to help them with how to navigate the online training and be available to answer questions related to the technology being used or the lesson content. Also, they were aware of the need to provide computer and internet access. Some educators mentioned the importance of being allowed to use work time to participate in the online training.

A majority of interviewees felt that the online training could complement in-person trainings, but not replace them. For example, professionals thought that online training could be part of the initial training and also serve as a review tool, while educators thought of using the online training as a review tool or to get updated information.

Interviewees wanted the online training to be easy to use. The preferred method to present content was videos. Some people expressed that if text were used it should be accompanied by audio. The most important component interviewees wanted to see in the online training was demonstrations of how to teach the lesson. Many interviewees responded positively to the idea of including the reference section of the lesson plan, the “*For Your Information*” section, in the online training, but some recognized that it would increase the length of the online training. If evaluations were to be included in the online training, interviewees indicated that any training evaluation would need to be simple and, ideally, in familiar formats such as multiple choice or true/false.

Learner’s Characteristics

Most educators described themselves as visual learners; both professionals and paraprofessional educators recognized that an online training could facilitate visual learning. Most educators had at least some experience with online education/trainings and said that they would be comfortable taking an online training. Several professionals mentioned that paraprofessional educators do not have strong computer skills, while just a few educators acknowledged this either about themselves or some of their colleagues.

All educators in this convenience sample had been trained on these supplemental lessons, but some did not have experience teaching these lessons. However, most paraprofessional educators had some prior experience/knowledge of both maternal and infant nutrition, either informally, through their life experiences or formally from training/classes. Motivators for the educators to finish the online training identified by professionals were to make it mandatory and to provide a certificate of completion. However, educators said that they were motivated to take

an online training to review, to become more confident in their teaching, and/or to learn new/updated information.

Discussion

This qualitative study revealed that there is a need for an online training for the most widely used EFNEP curriculum. However, interviewees mentioned that the online training should enhance and not replace in-person training. Recommendations about integrating online education with face-to-face interactions have also been reported in the field of nursing.²⁰ The online training was seen as an excellent format for refresher trainings and to quickly deliver updates on the lessons and their content. These were important motivators for paraprofessional educators to take the online training. Christofferson et al reported that paraprofessional educators in their study liked to revisit the content in the online training as well as have the opportunity to take the training at their own pace.¹² The strong desire to have a review tool to refresh one's knowledge of how to teach a lesson, which is not taught frequently, addresses the adult learning tenet of immediacy; adults are more ready to learn information/skills when they know they will need them.¹⁷

Many professionals view the online training as an option to alleviate some of the time typically invested during initial or ongoing in-person trainings. Most paraprofessionals did not address this benefit, but all educators in this study had been previously trained on the maternal lessons and reviewing these lessons was a more pertinent need.

Interviewees identified several other benefits of having an online training. For example, the online training could improve the perceived self-efficacy that paraprofessional educators currently have about their ability to teach the maternal and infant lessons. For this reason, it would be relevant to measure paraprofessional educators' teaching self-efficacy as an outcome

measure for the online training. Christofferson et al found that all paraprofessional educators who participated in their online training felt better prepared to function in their job.¹² However, their training is a certification program that provides general nutrition knowledge and does not focus on demonstrating how to teach a particular lesson. Thus, self-efficacy associated with teaching skills warrants further research to confirm that online trainings increase teaching self-efficacy among EFNEP paraprofessionals.

Professionals viewed the online training as an opportunity to standardize the training that their educators receive. The *ESBA* curriculum has been adopted by 44 states.¹⁵ However, paraprofessional educators are trained using different approaches and time frames.¹⁰ We suggest that having a standardized online training could help increase the fidelity in the teaching of lessons. Consistent training protocols are considered a best practice in nutrition education programs.²¹ The effectiveness of the original intervention can be replicated in different locations if it is delivered with high fidelity.²¹

Smith and Ragan emphasize the importance of analyzing learners' characteristics so that instruction can be designed to be effective and interesting to learners.¹³ Educators in this study acknowledged that it is common to learn how to teach the maternal and infant lessons by observing a role play of a class being taught. This methodology is appropriate as most educators considered themselves visual learners. Furthermore, most educators wanted the online training to be video based, and that if text were used, they felt it should be accompanied by audio. In addition, it was important to review the background content for these lessons by teaching the information in the "*For Your Information*" section, to improve educators' confidence in their ability to address participants' questions. Paraprofessional educators consider their training crucial to their success.²²

The success of an online training requires that employees have access to computers and internet connections, as well as scheduled work time to participate. In our study, paraprofessional educators had access to computers and internet connection at work, but they mentioned the need to have scheduled time to complete the online training during work hours. Studies have revealed that learners can feel frustrated if there is no scheduled time to participate in online trainings. Just as time is scheduled to attend in-person trainings, time should be provided to complete online trainings at work.^{20,23} Also, some educators may need initial support to learn how to navigate the online training. However, supervisors were willing to help with this. Although, most educators in this convenience sample had at least some experience taking online training or classes, interviewees stressed the need for online trainings to be user friendly.

Limitations:

The study had some limitations. Although we invited EFNEP employees from three different regions to participate in our interviews, we used a purposeful sample of EFNEP professionals and paraprofessionals, thus our results cannot be generalized. We attempted to use a maximal variation sampling strategy, but it is possible that supervisors chose people that were comfortable with or more interested in having online trainings. In addition, EFNEP paraprofessionals are not required to have post-secondary education,⁹ but in our sample most paraprofessionals had some post-secondary education. However, other studies with EFNEP paraprofessionals have also reported that most of them had at least some post-secondary education.^{22,24}

Implications for Research and Practice:

Our research suggested that there was a need for online trainings for EFNEP paraprofessionals and that it was critical to include members of the target audience in need

assessment activities. Two online trainings targeting nutrition paraprofessionals are primarily developed to teach general nutrition information,^{12,25} not how to deliver the lessons that paraprofessionals teach. Furthermore, one of these trainings relies heavily on text to present content.²⁵ Text was not the preferred method to receive information among educators in this study. Also, our research suggested that online trainings would be most appropriate if delivered to complement in-person initial/ongoing trainings or to provide refresher training on how to teach specific lessons. This opens a window of opportunity to help EFNEP save, in the long term, time and resources needed to train educators while also providing a readily available refresher/reviewer tool for paraprofessional nutrition educators. Further research is needed to explore the effectiveness of online trainings among EFNEP educators. While, our interviews focused on an online training of the *ESBA* maternal and infant lessons, many of our findings could apply to needs assessments for online trainings for paraprofessional nutrition educators.

Table 3.1 Demographic Characteristics of EFNEP Professionals and Paraprofessionals (n=22)

Characteristics	Professionals (n = 7) (mean ± SD or n [%])	Paraprofessionals (n = 15) (mean ± SD or n [%])
Age, y	39 ± 6.6	44.1 ± 15.7
Gender		
Female	6 (86)	15 (100)
Time working at EFNEP, years	7.3 ± 5.7	3.7 ± 2.9
Race/ethnicity*		
White	6 (86)	7 (47)
Black/African American	-	3 (20)
Hispanic	1 (14)	5 (33)
Mixed	1 (14)	1 (7)
Education		
High school diploma	-	1 (7)
Associate's degree	-	4 (27)
Some college	-	3 (20)
Bachelor's degree	2 (28)	7 (47)
Master's degree	5 (71)	-
Cooperative Extension Region		
Western Region	4 (57)	7 (47)
North Central Region	2 (29)	6 (40)
Southern Region	1 (14)	2 (13)
Has taught supplemental lessons	-	10 (67)

*Could answer more than one

Table 3.2 Themes Related to Need for Online Training, Learning Environment, and Learners' Characteristics with corresponding quotes (n = 22)

Themes	Quotes
<p data-bbox="268 310 541 375"><i>Learning Context:</i> Instructional Needs</p> <p data-bbox="201 418 447 488">Current Training Descriptions Current training is in-person, usually as group. Training goals include: to understand who should be taught supplemental lessons, how to teach these lessons and the content the lesson is based upon. Educators should teach with confidence and as the lesson is written.</p> <p data-bbox="201 894 590 964">Main Challenges of Current In-person Training Initial training is time consuming; paraprofessionals experience overload of information when training for supplemental lessons is too close to the training for core lessons. Many educators need refresher trainings for supplemental lessons</p>	<p data-bbox="1003 310 1524 342"><i>Learning Context:</i> Instructional Needs</p> <p data-bbox="632 418 1052 451">Current Training Descriptions “We did role playing with it [lesson]. It was a group of us. We were all new hires.” (Paraprofessional 14)</p> <p data-bbox="632 565 1885 634">“So the other goal we have [besides learning how to teach] is to discuss outreach potential to this target audience... also nutrition content is a huge, part or goal of the training.” (Professional 12)</p> <p data-bbox="632 675 1892 777">“To make sure we’re following the competencies, that we’re always sticking with research based information, and that our educators have a great understanding that we teach all of our curriculum as written” (Professional 18)</p> <p data-bbox="632 894 1415 927">Main Challenges of Current Training In-person Training “Out of all the lessons of <i>Eating Smart • Being Active</i>, these three are the most difficult for them [paraprofessionals]. I just think it is because of the content. I think that it usually takes more time and more effort on the trainers’ part to go through them [maternal and infant lessons] with them [paraprofessionals] through the information, much slowly and for a longer amount of time.” (Professional 3)</p> <p data-bbox="632 1149 1864 1252">“They give out so much good information [but]...since we’ve already been drowned by all the other information from all of the other lessons...[the training on the maternal and infant lessons] doesn’t sink in the same way.” (Paraprofessional 8)</p>

Table 3.2 Themes Related to Need for Online Training, Learning Environment, and Learners' Characteristics with corresponding quotes (n = 22) continued

Themes	Quotes
<p data-bbox="268 310 543 375"><i>Learning Context:</i> Instructional Needs</p> <p data-bbox="201 418 552 597">Need for Online Training Professionals unanimous support Educators near-unanimous support</p> <p data-bbox="201 894 590 1180">Online Training Benefits Consistency in training, easy access for reviews at any time and at one's own pace. Professionals could spend less time training and paraprofessionals could improve their confidence.</p>	<p data-bbox="1003 310 1524 342"><i>Learning Context:</i> Instructional Needs</p> <p data-bbox="632 418 982 451">Need for Online Training "I think it would be something that they [paraprofessionals] could use, of course to help train, but I think it could serve as...reference because sometimes your agencies change. So, because the lessons are supplemental, say if someone hasn't taught them for a few months and they get a request, then they could brush up on their skills. The core lessons are taught over and over and over. The supplemental lessons are not. So that [online training] would be like a good reference point." (Professional 18)</p> <p data-bbox="632 711 1892 857">"I think that a lot of the educators I know are going; they're going to want to do it [online training] just because most of us don't know a lot of it [supplemental lesson]. And so I think it'll be a very valued part of the program. And I think if it goes well, it should be modelled to do the rest of the program [lessons]." (Paraprofessional 10)</p> <p data-bbox="632 894 974 927">Online Training Benefits "I'm always a big fan of electronic trainings in that paraprofessionals are able to access them, and learn at their own pace. I think it could provide some consistency in terms that the training and information is always available." (Professional 13)</p> <p data-bbox="632 1073 1892 1146">"It [online training] is gonna make me, I think a better educator, that way, the information that I'm educating my people with, I'll be comfortable in teaching it." (Paraprofessional 4)</p>

Table 3.2 Themes Related to Need for Online Training, Learning Environment, and Learners' Characteristics with corresponding quotes (n = 22) continued

Themes	Quotes
<p data-bbox="247 313 562 378"><i>Learning Context:</i> Learning Environment</p> <p data-bbox="201 418 573 670">Organizational Support Educators have access to computers and Internet at work. Educators want scheduled work time to take online training and an opportunity to ask questions.</p> <p data-bbox="201 748 604 1000">Online Training Use Online training should complement, not replace, in-person trainings. It could be part of initial training, a review tool, and a channel to deliver updated information.</p>	<p data-bbox="982 313 1549 342"><i>Learning Context:</i> Learning Environment</p> <p data-bbox="632 418 1864 670">Organizational Support “Having a time allotted...maybe a meeting or something where we could do this online training, so that we’re not having to rearrange classes or have to do it on down time, so having a specific time for us to take it.” (Paraprofessional 20)</p> <p data-bbox="632 602 1818 670">“When it comes to any questions about the curriculum itself of course, you know, I think the project manager should be able to answer that.” (Paraprofessional 17)</p> <p data-bbox="632 748 1896 1109">Online Training Use “It would be good if it can be used in conjunction with what we already do. Just because that is the way they are used to learning, in person, with their peers, from us. Then, if it is the same version or an altered version of the training, something as a refresher, may be something that we do formally once a year, but it is also something that they could access when they need it.” (Professional 1)</p> <p data-bbox="632 1003 1843 1109">“As we get more familiar with the materials and things and as things change, as we know, they change. So it might be really well to have some kind of access to online training.” (Paraprofessional 11)</p>

Table 3.2 Themes Related to Need for Online Training, Learning Environment, and Learners' Characteristics with corresponding quotes (n = 22) continued

Themes	Quotes
<p>Learning Context: Learning Environment</p> <p>Online Training Format Online training should be user friendly, video based (if text used, add audio) and flexible to be used individually or as a group.</p> <p>Content Primarily demonstrate teaching lessons/activities. Content behind the lessons good to add too.</p>	<p>Learning Context: Learning Environment</p> <p>Online Training Format “I think it is going to be really important that they feel like it is easy to access, and it grabs their attention” (Professional 1)</p> <p>“I would like it to be a video so that I could see how some of the activities are supposed to be played out, to see how the lessons are really supposed to be facilitated. I find that when it’s just reading that I would just kind of skim through it and so I think a video would be better for me.” (Paraprofessional 20)</p> <p>Content “It’s definitely the one thing they ask me quite often, ‘Oh, could you do this section of the lesson for me. Could you stand up and show me how you present it.’ They do seem to get a lot of value out of that.” (Professional 9)</p>

Table 3.2 Themes Related to Need for Online Training, Learning Environment, and Learners' Characteristics with corresponding quotes (n = 22) continued

Themes	Quotes
<p><i>Learners' Characteristics</i></p> <p>Most paraprofessional educators acknowledge that they learn better visually. While some paraprofessionals do not have strong computer skills, most have at least some experience with online education/trainings and would be comfortable taking an online training. In addition, most educators have some prior formal/informal maternal/ infant nutrition education. Their supervisors and other nutrition specialists are common sources of information, especially to find answers to questions from pregnant participants.</p>	<p><i>Learners' Characteristics</i></p> <p>"I'm a visual person so... definitely the video would be, would be of interest to me" (Paraprofessional 21)</p> <p>"We've had um a couple of like for example the sexual harassment training and I think it was like one other training that we had online as well. Um, and that was fine" (Paraprofessional 8)</p> <p>"When I was pregnant, I got a lot of information um, because I was also receiving WIC" (Paraprofessional 17)</p> <p>"I think the comfort level for me also comes from knowing that I have this wealth of people behind me that if I didn't know the answer to this question that I could get it for them." (Paraprofessional 10)</p>

Table 3.2 Themes Related to Need for Online Training, Learning Environment, and Learners' Characteristics with corresponding quotes (n = 22) continued

Themes	Quotes
<p><i>Learners' Characteristics</i></p> <p>Motivation to take online training: Educators feel motivated to take the online training because they think it could improve their confidence in teaching and they could learn additional/updated information. Other motivators included the training being mandatory and a certificate of completion.</p>	<p><i>Learners' Characteristics</i></p> <p>Motivation to take online training: “To make sure I’m very familiar with the material before I go give it to them. So really self-confidence and knowing you’re giving your participants the best thing that you can.” (Paraprofessional 22)</p> <p>“Am I up to date? Is what I’m saying correct? If I look at that online training then I feel more assured of myself when I’m standing before other people. I don’t want to go in there and say that maybe I’m still giving information that came from when the food pyramid was out.”(Paraprofessional 6)</p> <p>“Of course for their own personal growth, but the certificate is very meaningful...it’s very heartwarming to see them so genuinely interested in earning, taking the course, and earning a certificate.” (Professional 18)</p>

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**CHAPTER 4 – DEVELOPMENT AND IMPLEMENTATION OF AN ONLINE
TRAINING FOR EFNEP PARAPROFESSIONAL NURITION EDUCATORS
ADDRESSING PRENATAL NUTRITION²**

Introduction

Supervisors from the Expanded Food and Nutrition Education Program (EFNEP) have several roles,¹ including training paraprofessional nutrition educators (hereafter referred to as paraprofessionals).¹⁻³ When hired, paraprofessionals are required to have a high school diploma or GED and are not required to have any prior training in nutrition. It is considered more important that they belong to the communities that EFNEP serves, so they can more easily relate to EFNEP participants.³ This means that there are many competencies that these paraprofessionals need to develop to do their job, suggesting the need for comprehensive initial and ongoing trainings.^{4,5} Furthermore, EFNEP's policy statement requires curricula to be based on the most recent Dietary Guidelines for Americans,³ which are updated every 5 years.⁶ Supervisors need to keep paraprofessionals' nutrition knowledge updated.⁵ Other challenges of training paraprofessionals include the time needed,⁷ use of program budget,⁸ the large amount of information provided at initial training,^{7, chapter 3} which can increase cognitive load, and the geographically dispersed locations in which paraprofessionals work.⁷

Cost effective theory based methods of training, which consider paraprofessionals' learning preferences, could be a solution to mitigate these training challenges. One possibility is online trainings. Challenges of scheduling trainings can be minimized with online trainings because they can be completed in any location, at any time, and at each individual's pace.⁹

² Manuscript prepared for submission to Journal of Nutrition Education and Behavior.

Online trainings also have the potential to deliver nutrition updates quickly and to facilitate the standardization of the trainings offered.⁹

Paraprofessionals often need refresher trainings in content or teaching techniques. An online training presenting how to teach the respective lessons could save supervisors the time needed to deliver face-to-face refresher trainings.^{chapter 3} Christofferson et al developed an online training to provide paraprofessionals with nutrition knowledge. Their formative evaluation showed that their online training was less expensive per educator than in-person trainings. They also found that paraprofessionals increased their nutrition knowledge by participating in the online training.¹⁰

The Eating Smart • Being Active (ESBA) curriculum is used in 44 states.¹¹ This widely used curriculum¹² presents an excellent opportunity to evaluate an online training that prepares paraprofessionals on how to teach the lessons. The *Eating Smart and Being Active During Pregnancy* (ESBA-Pregnancy) lesson¹³ was chosen to test the online training approach with paraprofessionals. This lesson is not taught as frequently as the 8 core lessons from the ESBA curriculum, making an online training a potentially valuable review tool for all paraprofessionals teaching nutrition during pregnancy.^{chapter 3} The objective of this report is to present principles from the Cognitive Theory of Multimedia Learning that facilitated the development of a video based online training for paraprofessional nutrition educators, important lessons learned during the development and implementation of the online training are also reported.

Discussion

Online trainings are designed to help trainees learn skills that they can transfer to their work setting thereby improving their performance and contributing to organizational goals.¹⁴ Training implies learning, thus to increase the chances of developing an effective training,

training developers need to understand the cognitive processing that people undergo when learning.¹⁴ The Cognitive Theory of Multimedia Learning (CTML) can help us understand how individuals learn and presents research based principles that can be applied when designing multimedia online trainings.¹⁵ Three major assumptions are the foundation of CTML: “dual channels,” “limited capacity,” and “active processing.”¹⁶

Based on Mayer’s explanation of CTML, spoken words/sounds and written words/pictorial information are briefly processed via two different channels. Learners have to engage in the selection of relevant verbal and pictorial information. Then, selected information is organized in working memory, which has limited capacity.¹⁶ Moreover, in working memory, prior knowledge stored in long term memory is activated to be integrated with the newly organized information. The selection, organization, and integration of information is labeled as active processing in the CTML.¹⁶

Mayer describes 3 main types of mental processing that learners go through when exposed to multimedia instruction. “*Extraneous Processing*” is cognitive processing that learners undergo during instruction that is unrelated to the instructional goals. This type of undesirable processing can decrease learners’ already limited cognitive processing capacity. *Extraneous processing* is usually due to poor instructional design.¹⁷ For example decorative graphics should be avoided to decrease cognitive load¹⁴ because students may make unnecessary mental efforts to decipher how those graphics relate to what they are learning. “*Essential Processing*” allow learners to use their working memory to make mental representations of the information presented. This processing involves selecting and organizing the important information presented during instruction. Finally, “*Generative Processing*” requires learners to reorganize the new information into schemas that integrate their respective prior knowledge with

the newly processed information.¹⁷ Mayer and colleagues have determined several research based principles to reduce extraneous processing, facilitate essential processing, and foster generative processing, thus promoting effective multimedia instruction.^{14,16,17}

In addition to understanding the theoretical framework of how people learn from multimedia instruction, training designers should consider selecting an instructional design model (ID) to guide the process of developing an effective multimedia online training. An ID model puts learners at the center of the instruction and “facilitates congruence among objectives, activities, and assessment.”¹⁸ Many ID models are available; Smith and Ragan’s model was chosen to guide the development of the ESBA-Pregnancy online training because this model relies on theory based principles¹⁸ and the authors provide many instructional, organizational, and delivery strategies, something uncommon in other ID models.¹⁹ The strategies they present are based on cognitive processes that individuals experience when learning. Thus, as with CTML, Smith and Ragan provide guidance on how to develop effective instruction.¹⁸

Development of the Multimedia Online Training

The first steps in Smith and Ragan’s ID model are to: 1) determine if there is a need for the online training, 2) understand the characteristics of the environment where the online training will take place, and 3) determine the characteristics of the trainees. Chapter 3 presents an example of these assessments. After collecting data on these three factors, Smith and Ragan’s ID model¹⁸ recommends that training developers:

- determine the training goal(s),
- describe all the mental and/or physical steps the learner would go through to meet the training goal(s),
- ask what learners need to know to achieve each step, and

- create a learning objective for each step, as well as for the overall training (see appendix B).

After writing the objectives, training developers will have a good idea of the content needed in the online training. However, Smith and Ragan recommend writing assessment items for each objective first. Difficulty developing assessment items for an objective is a sign that the objective is not clear and should be revised.¹⁸ An objective for which an assessment cannot be written is not measurable,¹⁸ thus training designers will not know if the objective was met. Once assessment items have been developed, a panel of experts in training paraprofessionals and in the online training's content should review the assessment items to ensure that they match the training objectives.

Next, training developers will determine how the online training's content will be organized and delivered.¹⁸ Training designers should use storyboards to design multimedia online trainings (see appendix C). Storyboards are visual blueprints of what the training designers want to see during the online training.²⁰ Narration can be included in the storyboards or as separate scripts. If scripts are developed separately they need to be linked to the corresponding storyboards. Storyboards and scripts have many functions, but an important one is to serve as communication tools between the training designer and other professionals who will be involved in the development of the online training, such as content experts reviewing assessments against objectives as well as filming/editing teams.⁹

Content should be organized and designed in such a way that the online training reduces cognitive *extraneous processing*, facilitates cognitive *essential processing*, and fosters cognitive *generative processing*.¹⁴ Principles from the CTML¹⁴ should be applied to the development of storyboards and the organization of the online training's content. For example, the *Multimedia Principle* postulates that people engage in deeper learning when words and images are used

rather than using only words to explain information.¹⁵ Furthermore, the *Modality Principle* provides even more specific recommendations indicating that people learn better when the words presented with the images are narrated rather than printed as text.²¹ This is because, although printed words will eventually be processed using the auditory channel in working memory, printed words first enter working memory using the visual channel, which learners will also be using to select relevant images. This can overwhelm learners' working memory leaving them with less cognitive processing capacity. However, when spoken words are used, the mental effort to select relevant information is split between the auditory channel, which will be selecting relevant auditory information, and the visual channel, which will be selecting relevant visual information. Thus, working memory will be less overwhelmed and will be more easily engaged in integrating incoming information with prior knowledge.¹⁴ In other words, by following the *Modality Principle*, training designers foster trainees' essential processing.

The *Coherence Principle* indicates that elements unrelated to the training's objectives should be avoided. For example, background music (only added to "decorate" the training) can be distracting and hinder learning. This principle helps reduce extraneous processing.¹⁴ Another principle used during the ESBA-Pregnancy online training development, was the *Segmenting Principle*, which indicates that breaking down instruction into smaller components helps learners generate mental representations of the information provided.¹⁴ The ESBA-Pregnancy content was segmented into small steps to make learning less overwhelming. The *Personalization Principle* was also applied by having an on-screen agent present through the training. In the ESBA-Pregnancy online training, the agent was a narrator who aided in the understanding of how to use the lesson plan to teach EFNEP participants. Furthermore, this narrator used a

conversational rather than formal style of speaking, which is also recommended under the *Personalization Principle*.¹⁴

When planning the delivery strategies, training professionals should consider finding an electronic platform that will facilitate the management of the online training; such a platform is known as a Learning Management System (LMS). Using a LMS has many benefits,⁹ one being that it gathers and stores information from trainees (for example when someone accessed the training and their evaluation data), which can be used to determine if the training requirements were met. Many universities have a LMS in place. Thus, training designers can seek technical assistance from campus online learning experts. Training developers should select a LMS with features that meet their training needs. Aspects to consider when choosing an LMS include: budget, training needed to understand and use the LMS, types of content that can be uploaded to the LMS, types of evaluations supported, level of control training developers have over the sequence in which trainees access the training content, book marking features for trainees to record their progress, what records the LMS saves, and in what format records are provided.

Lessons Learned on Development

Training developers working at universities can take advantage of relatively inexpensive resources available on campus, such as using departments of journalism, theater, or communications to identify students who might serve as videographers. Students benefit from filming/editing training videos because they can add this project to their portfolio. A memorandum of understanding (MOU) between the training developer and the filming/editing team is recommended. The MOU should define frequency of meetings, deadlines, courses of action for unmet deadlines, and how the final products will be made available to the training developer. Training developers should invest the time to learn more about learning principles

that would facilitate trainees learning because these can aid in making informed decisions related to the design of the instruction. Furthermore, the LMS should be chosen early in the planning stages, as some of its features may limit aspects of the online training design, such as the types of evaluation that can be supported.

The time and budget needed to develop an online training will vary greatly depending on: the type of media that will be used and its format (filming scenarios with actors is more complex and time consuming than creating videos based on pictures and text), and the experience of the training developer with the media and LMS selected. If working with students for filming and editing videos, their limited experience can also affect the length of the development phase.

When working with novice students, the training developer needs to be actively involved during filming and should review the footage every time something is recorded. Aiming for the best quality footage should decrease the editing time needed. Editing is one of the most time consuming steps of developing a multimedia online training. Poor quality raw footage will require more time using editing software's features that a novice student may need to learn before correcting the film.

Implementation of the Multimedia Online Training

Before delivering the online training, it is important to test the training to determine if paraprofessionals experience technical difficulties and confirm that the directions are clear. Once the online training is implemented, technical support is important, especially for employees with low-computer literacy.²² Having a person in charge of answering e-mails and phone calls from paraprofessionals is vital to limit their frustration.¹⁰ In addition, supervisors' endorsement of the online training is needed because many paraprofessionals seek support from their supervisors when facing a challenge.²³

Asynchronous online trainings, meaning that trainees can access the online training at any time, are convenient.⁹ Paraprofessionals have heterogeneous schedules because many flex their teaching hours to match their participants' schedules.²³ However, it is recommended to have a clear deadline for completion to make sure that paraprofessionals schedule time to complete the online training during working hours. Furthermore, certificates of completion are important documents to motivate and demonstrate completion of the training, but the requirements to get them need to be clearly specified at the beginning of the online training, for example, what is the expected passing score.

Lessons Learned on Implementation

It is important to let paraprofessionals know that they can schedule work time to complete the online training. MacDonald et al recommended the creation of a formal study plan that trainees, supervisors, and other company stakeholders all recognize. This plan should allow employees to complete the online training during work hours without interruptions.²⁴

If the LMS has an announcements feature, it is good to use this feature to facilitate mass communication, which helps remind trainees about the online training deadlines. Several trainees may lose their user name and password to log into the online training; making user names and passwords easy to be re-sent is important. Also, links to the online training, need to be verified to make sure they are active and people are being sent to the right web address. It is also useful to create a short video about how to navigate the online training and make it available right after enrollment so trainees become familiar with the online training characteristics, reducing their learning curve with the technology.

Implications for Research and Practice

This report presents a concrete example of the development and implementation of an online training for EFNEP paraprofessionals. The lessons learned should be particularly useful to training developers who may be considering exploring this type of training.

Online trainings aid in training standardization, which is a best practice in community nutrition programs.²⁵ The cost of training paraprofessionals could be lower when done online,¹⁰ especially when more educators participate in the online training. However, it is not the technology that makes people learn, but rather the extensive theory based principles used to develop an effective online training.¹⁴ Training developers need to consider what helps adults learn and how to provide formats that stimulate cognitive processing that create active learning. Theoretical frameworks that can guide the design of effective training were presented in this report. Future research should look at the results from the implementation of theory driven multimedia online training among paraprofessionals and what specific elements are critical to include in online trainings to facilitate the success of paraprofessionals as effective nutrition educators.

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**CHAPTER 5 – EVALUATION OF AN ONLINE TRAINING FOR EFNEP
PARAPROFESSIONAL NUTRITION EDUCATORS ADDRESSING PRENATAL
NUTRITION³**

Introduction

It has been estimated that about half of the pregnancies in the US are unplanned, and this percentage is higher among low-income women.¹ This public health problem can be exacerbated when considering that most Americans have inadequate diets.² Pregnancy is a time when several changing nutritional needs should be met to ensure the health of the mother and the fetus.³ Critical nutrients include: folate,⁴ iron,⁵ calcium,⁶ vitamin D,⁶ and omega three fatty acids,⁵ which are usually consumed below their recommended amounts.²

Community nutrition programs, such as the Expanded Food and Nutrition Education Program (EFNEP) teach a series of nutrition lessons to disseminate nutrition information, promote behavior change, and connect low-income pregnant women with other health programs. EFNEP is a federally funded program that has been helping low-income families since 1969 and exists in all 50 states and US territories. In 2014 more than a half million people (adults and youth) participated in EFNEP. Of the 121,850 adults; 9663 adult participants (8%) were pregnant.⁷ The program hires paraprofessional nutrition educators (PNE) who are trained to deliver a series of researched-based, learner-centered, nutrition lessons. PNEs are frontline health promotion workers, who improve underserve communities' access to the health system.⁸ EFNEP helps underserved populations improve their nutrition behaviors.⁹

³ Manuscript prepared for submission to the American Journal of Public Health

Because one of the groups participating in EFNEP are pregnant women,⁷ EFNEP leaders in Colorado and California created a prenatal nutrition lesson entitled *Eating Smart and Being Active During Pregnancy (ESBA-Pregnancy)*. The topics addressed in this lesson are healthy eating during pregnancy, the unique food safety concerns during pregnancy, the importance of prenatal care, physical activity, and referrals to other community health programs.¹⁰ PNEs deliver this lesson to pregnant women, thereby using the lesson as a supplement for the rest of the nutrition lessons that are delivered by EFNEP. However, after interviews with PNEs and supervisors from EFNEP offices in 3 extension geographical regions, it was clear that a refresher training on the prenatal lesson was needed.^{see chapter 3} Nonetheless, as with any program working with community health workers,¹¹ training PNEs presents some challenges such as: high use of resources to deliver effective trainings due to PNEs working in geographically dispersed areas,¹² differences in schedules, and lack of standardized trainings programs.¹³ Also, as seen in multiple EFNEP studies, PNEs represent a wide range of ages,¹⁴⁻¹⁶ years as PNE,^{14,16} life experiences,¹⁷ cultural backgrounds,¹⁴⁻¹⁶ and education.^{14,15,18} Because of these challenges, the objective of this research was to evaluate the effectiveness of an online training on the ESBA-Pregnancy for PNEs. The research questions addressed were:

1. Would an online training improve PNEs' knowledge about the timing to offer the ESBA-Pregnancy lesson, their understanding of their scope of practice, and their ability to answer pregnant participants' questions?
2. Would an online training improve PNEs' ability to identify proper/inappropriate teaching practices?
3. Would an online training increase PNEs' teaching self-efficacy?
4. Would an online training increase the number of PNEs with mastery of the material?

Methods

This was a quasi-experimental pre-/post-test research design involving PNEs from EFNEP in multiple states. This study was approved by Colorado State University's Institutional Review Board. PNEs completed an online training on prenatal nutrition and multiple assessments.

Participants

All recruitment was done via e-mail. An initial recruitment e-mail was sent to all EFNEP state coordinators. Participation criterion was to be a PNE employed by EFNEP. If training was of interest to PNEs, the coordinator supplied a list of PNEs' names, which provided an estimate of the number of potential participants. States with similar numbers of PNEs were paired and a coin was flipped to assign all PNEs from a state to either an intervention or a delayed intervention/control group. PNEs from the same state were assigned to the same group to avoid possible contamination. Coordinators forwarded a subsequent e-mail and a cover letter explaining the study details to their PNEs; PNEs could voluntarily register using a link in that e-mail.

Online Training Description

During the formative phase of this project, in-depth semi-structured interviews were conducted with 15 PNEs and 7 supervisors from 3 geographic regions to gather information about the need for an online training on the ESBA-Pregnancy lesson, the characteristics of PNEs, and a description of their current training environment.^{see chapter 3} Interview findings informed the development of the online training. Following principles from Smith and Ragan's instructional design model,¹⁹ training objectives were written and then revised by experts in maternal and

infant nutrition, training of PNEs, and instructional design. The online training was video and audio based as preferred by PNEs.

During the interviews, it was clear that PNEs viewed online trainings as a means to feel more confident in their teaching abilities. Thus, Bandura's constructs of "vicarious experiences," "verbal persuasion," and "emotional arousal," were considered in the development of the online training to improve trainees' self-efficacy.²⁰

The training content addressed: how to recruit pregnant participants, how to teach the lesson, tips for teaching, and extensive explanations of the background content in the lesson plan to help PNEs be better prepared to answer questions from participants. How to teach the lesson was demonstrated showing video clips of a PNE teaching a small group of pregnant women. Thus, PNEs could learn through vicarious experiences and decrease emotions such as anxiety by observing a peer successfully teach the lesson. Furthermore, testimonies from past EFNEP participants, who had received this lesson, and from other PNE experts in teaching this lesson were incorporated to further aid with emotional arousal and to verbally persuade new PNEs that they could teach this lesson successfully and have an impact in EFNEP participants' lives.

The online training included practice activities as well as pre-/post-assessments (described below). The Cognitive Theory of Multimedia Learning²¹ and principles of adult learning²² also guided the development of the online training. Additional information about the development of the online training and lessons learned from the process can be found elsewhere.^{see chapter 4} Considering the heterogeneity of PNEs' schedules, because they spend most of their work hours in the community educating low-income families, the content was designed as 40 brief videos and broken down into small sections. Any progress the PNEs made in the 3-4

hour online training was automatically saved, so they could come back later and start where they had left off.

Access to the online training

After registration, PNEs received a user name and password to access the online training. Each time new assessments or content was made available online, PNEs received an informational e-mail. The Learning Management System CANVAS® allowed monitoring of PNEs activities in the online training.

Measures

A demographic survey assessed age, education, language, years as PNE, previous training in the ESBA-Pregnancy lesson, experience with maternal and infant nutrition classes, experience taking online trainings or classes, and PNE's training preferences (online, in-person, or both). Three other evaluations, designed to match the training objectives, assessed: knowledge (when, during pregnancy, to offer prenatal nutrition lesson, understanding scope of practice of PNEs, and knowledge needed to answer EFNEP pregnant participants' questions), the ability to identify inappropriate teaching practices demonstrated in videos (scenario evaluation), and teaching self-efficacy. There was also a final opinion survey to gather reactions from PNEs to the online training (Appendix M).

Assessments were reviewed for content validity by a panel of 5 experts. Their areas of expertise included training of PNEs, maternal and infant nutrition, adult learning, instructional design, and development of evaluation tools. After minor modifications, face validity was determined with a group retrospective verbal probing technique done with 8 PNEs.²³ Reliability was determined using test-retest; twenty seven PNEs from 3 states completed the assessments twice, 2 weeks apart without access to the online training in between tests. Because person

correlations can be misleading with a small sample size, percent agreement between test and retest responses was also calculated. Pearson correlations were: 0.58 (agreement 88%), 0.51 (agreement 82%), and 0.8 (agreement 85%) for the knowledge, scenario, and self-efficacy evaluations, respectively. Cronbach's α for knowledge, scenario, and self-efficacy assessments were: 0.63, 0.45, and 0.91 respectively. Cronbach's α for knowledge and scenarios were relatively low because these tests were developed to match training objectives and not one particular construct.

Data Collection

Demographic characteristics were gathered through an online survey that PNEs completed after registration. Pre-assessments included tests in knowledge and self-efficacy that PNEs in both groups completed during the first week of the intervention. During the next two weeks, only PNEs from the intervention group had access to the online training's content. They could complete it at their own pace. During the fourth week of the intervention, no PNE had access to the training content and all PNEs, in both groups, were required to complete the following post-assessments: post-knowledge test, post-self-efficacy, and a scenario evaluation. PNEs from the intervention group also completed an opinion survey. During the last two weeks after the post-assessments, the control group had access to the same online training content. In the last week of the research project, only PNEs in the delayed intervention/control group took the post-assessments again, in addition to completing the opinion survey. All PNEs who completed the training and scored at least 75% of the maximum possible score in the knowledge and scenario tests received a certificate of completion.

Data Analyses

Data analyses were done using SAS® software (version 9.4, SAS Institute Inc., Cary, NC, 2015). Analyses included repeated measures analysis of variance and ANCOVA using SAS/STATMIXED for within and between group comparisons. Demographic data were analyzed using SAS/STAT FREQ for frequencies and chi-square tests. Changes in mastery were calculated using SAS/STAT FREQ with Chi-square tests (McNemar's tests for within group comparisons). Mastery was defined as having scored at least 75% of the maximum possible score. Mastery for knowledge and scenario evaluations were calculated separately. Significance was set at $P < .05$

Results

Table 5.1 displays the demographic characteristics of study participants by group. There was a wide range of ages, with most PNEs being at least 42 years of age or older. The primary language of most PNEs was English, most of them had at least some college education, and had been pregnant. There was a wide range of years of experience as a PNE but the large majority had not received training on, nor taught the ESBA-Pregnancy lesson. However, most educators had taught at least one other lesson from the *Eating Smart • Being Active* curriculum. The majority of PNEs had some experience with online trainings or classes and preferred to receive a mix of in-person and online trainings rather than either of the two formats alone. There were no significant differences observed between the intervention and control group in terms of descriptive characteristics.

Table 5.2 shows the results of the knowledge, scenario, and self-efficacy tests for both the intervention and control groups. Pre-self-efficacy scores were significantly lower in the control group. Thus, pre-self-efficacy scores were included as a covariate in ANCOVA

calculations. Two non-significantly different descriptive characteristics were included as covariates in the ANCOVA analyses because the researchers considered that they would affect the scores at post-tests: “previous experience with online trainings/classes” and “has taught the ESBA-Pregnancy.” PNEs in the intervention group scored significantly higher in knowledge, scenarios, and self-efficacy evaluations after the online training compared to their pre-scores. When, compared to the PNEs’ mean scores in the control group at pre-time 2, the intervention group also scored significantly higher in all three evaluations. After the control group had completed the online training, their scores in their post-evaluations were significantly higher than their scores at pre-time 2, and not significantly different than the interventions post-evaluations scores, except for self-efficacy. Self-efficacy was significantly higher in the control group at post-test.

After the online training, a higher proportion of PNEs in the intervention group mastered the knowledge and scenario tests compared to the control group pre-time 2 (knowledge 92% vs 65%, $P=0.01$ and scenario 95% vs 75%, $P=0.02$ respectively).

Although, not the target audience for the study, some PNEs’ supervisors expressed interest in participating in the online training; a separate section was made available to them. No pre- or post-tests were assigned to supervisors, but they completed an opinion survey after the training. Table 3.3 shows a summary of the responses of PNEs and supervisors with regards to the online training. After completing the online training most PNEs felt that they better understood how to teach the lesson and that the explanations of the background nutrition content would help them answer participants’ questions. PNEs felt better prepared to teach the ESBA-Pregnancy lesson after the training and they would recommend the online training to other PNEs. They also agreed that online trainings should be available any time they need to review a lesson.

Discussion

Our research findings suggest that an online training is an effective training method to improve the PNEs' knowledge. In addition, video based assessments showed that PNEs were able to discriminate appropriate and inappropriate teaching practices, which is a fundamental skill to increase the likelihood that PNEs would deliver the lessons with fidelity. Increasing fidelity, meaning delivering a program as it was designed, is important to facilitate efficacy of the program and aids with its evaluation.²⁴ Furthermore the online training increased PNEs' self-efficacy, which supports the results from Irvine et al, who developed a video based online training for nurses aids, on how to react to aggressive resident behavior, and found that trainees significantly increased their knowledge and self-efficacy.²⁵ Diker et al, trained PNEs using a mix of in-person and video based training (DVD); they found that the training improved trainees' self-efficacy and PNEs mentioned that the DVD helped them feel less intimidated about teaching a nutrition lesson.²⁶

Training PNEs should help them achieve the competencies expected of them for successful job performance. Some competencies that could have improved with this online training include: having knowledge of the curriculum, staying current in nutrition topics, having adult teaching skills, and being self-confident.^{27,28} Our results suggest that the online training helped improve some PNEs' job performance relative to specific competencies because there was a significant increase in the number of PNEs who mastered the knowledge and scenario evaluations, as well as increased their confidence. We did not include the scenario evaluations at pre-test to avoid reactivity to the videos. Scores in the intervention group were higher than the control group; this strengthens our confidence that the online training did have a positive effect in learning.

Furthermore, PNEs' responses to the opinion survey showed that they felt better prepared to teach the ESBA-Pregnancy lesson after the training, they would recommend the training to other PNEs, and would like more online training like this in the future. Supervisors echoed PNEs' opinions, which shows wide acceptance of the online training. This acceptance is important because an online format could save trainers time, otherwise needed to deliver in-person trainings; trainers could use their time to focus on providing opportunities for employees to practice skills learned in the online training, which is one of the limitations of online staff development.²⁹

Some limitations in this study include the use of a convenience sample, which limits our ability to generalize our results. Nonetheless, we had a relatively large sample, with PNEs from 18 states and US territories. Including employees from only one site, or just a few locations, has been a limitation in other evaluations of computer-based or online trainings²⁹; very small sample sizes have also been reported.¹² Responses to evaluations were self-reported. While using a pre-test can affect post-tests results because trainees learn what will be included in post-evaluations, a pre-test allows researchers to determine the baseline knowledge of participants.³⁰ This could help explain why our control group scored significantly higher in their post-self-efficacy test compared to the intervention group. The control group had taken the self-efficacy test twice before accessing the online training content.

A limitation of most online trainings is the uncertainty that participants viewed the content individually. We communicated that the training was to be done individually and asked paraprofessional nutrition educators to complete pre- and post-evaluations as closed book. PNEs' supervisors may not have monitored if instructions were followed. In addition, due to time constraints and budget limitations, PNEs' teaching performances were not evaluated.

Implications for Research and Practice:

In spite of its limitation, this study presents findings among PNEs who share many of the same characteristics as many other community health workers, who also need ongoing training to effectively do their work.³¹ This study provides support for the use of online trainings as an effective method to complement in-person staff development and/or to provide refresher training opportunities for PNEs. The present study also responds to Harrington and Walker's call for determining if computer based trainings, in areas other than fire safety, would have the positive results they observed among health staff with limited formal education.³² Future research should be done to evaluate the transfer of teaching practices presented in the online training into PNEs' work. As well as investigating if the online training has a significant effect in the number of pregnant participants receiving the ESBA-Pregnancy lesson.

In conclusion, the design of the ESBA-Pregnancy online training was based on sound theoretical principles and constructs. Our results suggest that a video format is an effective media to present the content in an online training for paraprofessional nutrition educators. We found a significant increase in the number of employees who mastered the knowledge and scenario evaluations. Mastery is not always reported in evaluations of online trainings among staff similar to PNEs.²⁹ Furthermore, other PNEs and community health workers, who spend most of their time working in the communities, may benefit from online trainings because online trainings can accommodate different work schedules, allowing access to the training content when it is convenient.

Moreover, the results of this evaluation support several of the findings from our needs assessment.^{see chapter 3} For example, a large number of PNEs wanted to have access to this online training after completing the training to use it as a review tool. They preferred a mixed of in-

person and online formats. Finally, a very important finding was the confirmation that PNEs completing the online training increased their confidence in their teaching abilities and felt better prepared to teach a prenatal nutrition lesson to low-income pregnant women.

Table 5.1-Demographic Characteristics of Paraprofessional Nutrition Educators in Intervention and Control Groups

	Intervention (n=67)		Control (n=64)	
	Number	%	Number	%
Age (years old)				
18-23	2	2.9	1	1.6
24-29	7	10.4	9	9.4
30-35	11	16.4	4	6.3
36-41	9	13.4	6	9.4
42-47	12	17.9	10	15.6
48-53	6	9.0	16	25
54-59	12	17.9	9	14.1
60 or more	8	11.9	9	14.1
Primary Language				
English	55	82.1	50	78.1
Spanish	8	11.9	7	10.9
Other	4	6.0	7	10.9
Ever Pregnant				
Yes	53	79.1	50	78.1
No	14	20.9	14	21.9
Education				
High School Diploma or GED	4	6.0	4	6.3
Some College	24	35.8	16	25.0
Associates Degree (2 years)	10	14.9	16	25.0
Bachelor's Degree (4 years)	22	32.8	16	25.0
Other	7	10.4	12	18.8
Years as PNE				
Less than 1	14	20.9	8	12.5
1-2	14	20.9	11	17.2
3-5	11	16.4	9	14.1
6-10	15	22.4	20	31.3
11-20	10	14.9	10	15.6
21 or more	3	4.5	6	9.3
Times ESBA-Pregnancy taught				
0	47	70.1	41	64.1
1-3	14	20.9	11	17.2
4-6	3	4.5	6	9.4
7-9	1	1.5	2	3.1
10 or more	2	3.0	4	6.3
Has Taught any other ESBA Lesson				
Yes	56	83.6	56	87.5
No	11	16.4	8	12.5

Table 5.1-Demographic Characteristics of Paraprofessional Nutrition Educators in Intervention and Control Groups (continued)

	Intervention (n=67)		Control (n=64)	
	Number	%	Number	%
Previous Training on ESBA-Pregnancy lesson				
None	55	82.1	47	73.4
Only on how to teach lesson	5	7.5	6	9.4
Only on background information in lesson	1	1.5	1	1.6
On How to teach lesson & its background information	6	9.0	10	15.6
Previous Experience with Online Trainings/Classes				
Yes	43	64.2	47	73.4
No	24	35.8	17	26.6
Type of Training Preferred				
Online only	9	13.4	9	14.1
In-person only	1	1.5	6	9.4
Mix in-person and online	57	85.1	47	73.4
Not sure	0	0	2	3.1
Comfortable with idea of taking online Training				
Strongly Agree	28	41.8	32	50
Agree	31	46.3	27	42.2
Undecided	8	11.9	4	6.3
Disagree	0	0.0	1	1.6
Strongly Disagree	0	0.0	0	0.0

Table 5.2-Outcomes (Knowledge, Scenarios, Self-efficacy) According to Group

Assessments	Pre-tests		Pre-time 2		Post-tests	
	Least Square Means (se)		Least Square Means (se)		Least Square Means (se)	
	Intervention	Control	Intervention	Control	Intervention	Control
Knowledge	18.1 (0.4) ^a	17.6 (0.4) ^b	-	18.5 (0.5) ^{c,d}	20.7 (0.4) ^{c,a}	20.7 (0.4) ^{b,d}
Scenarios	-	-	-	21.4 (0.5) ^{a,b}	23.0 (0.4) ^b	23.1 (0.5) ^a
Self-efficacy	42.4 (0.9) ^a	36.7 (0.9) ^a	-	45.1 (0.7) ^{b,c}	48.6 (0.6) ^{b,d}	50.7 (0.7) ^{c,d}

Least Square Means (LSM) for self-efficacy at pre-test were calculated using ANOVA. All other LSM were calculated using ANCOVA including 3 covariates: self-efficacy pre-test scores, had taught *Eating Smart and Being Active During Pregnancy* before the online training, and previous experience taking online training or classes. Same superscripts in row indicate significant differences

Table 5.3-Paraprofessional Nutrition Educators and Supervisors' Responses in Opinion Surveys

Opinion Survey Questions	Strongly Agree n (%)	Agree n (%)	Undecided n (%)	Disagree n (%)	Strongly Disagree n (%)
I better understand how to teach ESBA-Pregnancy after this training	67 (58.3)	45 (39.1)	3(2.6)	0	0
S: This training helped my educators understand how to teach ESBA-Pregnancy (n=14)	6 (42.9)	8 (57.1)	0	0	0
Online training was easy to do	51 (44.4)	51 (44.4)	11 (9.6)	1 (0.9)	1 (0.9)
S: Online Training instruction and prompts were easy for my educators	4 (30.8)	8 (61.5)	1 (7.7)	0	0
"FYI" explanations in online training will help answer questions from program participants	62 (53.9)	49 (42.6)	4 (3.5)	0	0
S: "FYI" in the online training will help my educators answer program participants' questions	6 (46.2)	7 (53.9)	0	0	0
I would recommend this training to other PNEs	70 (60.9)	36 (31.3)	9 (7.8)	0	0
S: I would recommend this training to other PNEs	5 (38.5)	8 (61.5)	0	0	0
I feel better prepared to teach the ESBA-Pregnancy after this training	61 (53.0)	47 (40.9)	7 (6.1)	0	0
S: My educators feel better prepared to teach ESBA-Pregnancy after this training	4 (30.8)	6 (46.2)	3 (23.1)	0	0
I feel more confident taking online trainings after this training	40 (34.8)	55 (47.8)	13 (11.3)	6 (5.2)	1 (0.9)
S: My educators now feel more confident taking online trainings after this training	2 (15.4)	4 (30.8)	7 (53.9)	0	0
I would like more online training like this one in the future	57 (49.6)	42 (36.5)	14 (12.2)	1 (0.9)	1 (0.9)
S: I would encourage my educators to take more online trainings like this one in the future	5 (38.5)	8 (61.5)	0	0	0
I do not feel nervous about taking online trainings after this training	42 (36.5)	53 (46.1)	10 (8.7)	9 (7.8)	1 (0.9)

S, supervisors; PNEs, paraprofessional nutrition educators; ESBA, Eating Smart • Being Active; ESBA-Pregnancy, *Eating Smart and Being Active During Pregnancy* lesson; FYI, "For Your Information" background nutrition information at the end of the lesson plan.

*if "S" is not indicated the question was asked to paraprofessional nutrition educators

The number of PNEs who answered each questions was 115 and supervisors 13 unless otherwise indicated

Table 5.3-Paraprofessional Nutrition Educators and Supervisors' Responses in Opinion Surveys (continued)

Opinion Survey Questions	Strongly Agree n (%)	Agree n (%)	Undecided n (%)	Disagree n (%)	Strongly Disagree n (%)
Online trainings should be available any time I need them to review a lesson	67 (58.3)	41 (35.7)	5 (4.4)	2 (1.7)	0
S: After PNEs complete an online training, it should be available to the educators to review the lesson when needed	10 (23.1)	3 (76.9)	0	0	0
There is nothing I would change to this training	26 (22.6)	37 (32.2)	23 (20.0)	28 (24.4)	1 (0.9)
S: There is nothing I would change to this training	2 (15.4)	4 (30.8)	6 (46.2)	1 (7.7)	0

S, supervisors; PNEs, paraprofessional nutrition educators; ESBA, Eating Smart • Being Active; ESBA-Pregnancy, *Eating Smart and Being Active During Pregnancy* lesson; FYI, “For Your Information” background nutrition information at the end of the lesson plan.

*if “S” is not indicated the question was asked to paraprofessional nutrition educators

The number of PNEs who answered each questions was 115 and supervisors 13 unless otherwise indicated

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CHAPTER 6 - CONCLUSIONS AND IMPLICATIONS FOR RESEARCH AND PRACTICE

Many pregnant women have reported inadequate diets¹⁻⁷ and inappropriate weight gain during pregnancy.⁸ EFNEP participants include pregnant women,⁹ and the *Eating Smart and Being Active During Pregnancy* supplemental lesson¹⁰ was added to the Eating Smart • Being Active curriculum to address their needs. Paraprofessional nutrition educators teaching the nutrition lessons require intense initial training and ongoing trainings throughout their years in EFNEP.¹¹ However, there are many challenges to training EFNEP paraprofessionals, such as: heterogeneous demographic characteristics¹²⁻¹⁶ and formal education,^{12,14,17} lack of expertise in nutrition,^{11,18} different previous work experience compared to professionals,¹¹ geographically dispersed locations,¹⁹ and updates in the Dietary Guidelines for Americans,²⁰ which requires updates in EFNEP curriculum, and thus in paraprofessionals' knowledge. Furthermore, additional training issues arise when preparing paraprofessionals to teach supplemental lessons such as the ESBA prenatal lesson. During the needs assessment, it was clear that paraprofessionals needed refresher trainings for this lesson because it was not taught as frequently as the rest of the ESBA lessons.

Supervisors and paraprofessionals interviewed in phase one of this project were in strong agreement that the online training for the prenatal lesson could bring benefits and solve some training issues faced with this lesson. Besides the benefits of allowing paraprofessionals to complete the training at any time and at their own pace, supervisors believed that the online training could save them some time usually used to train educators during the initial and ongoing

trainings. Paraprofessionals, viewed the online training as a convenient vehicle to receive refresher training on how to teach the prenatal lesson.

Paraprofessionals believed that being able to review the training before teaching the lesson, especially when too much time has elapsed since the last time they taught the lesson to pregnant participants, could increase their confidence in their teaching. Paraprofessionals' opinions in this current study support comments from paraprofessionals completing an online certification program who acknowledge that they liked to revisit the content in the online program and be able to take the training at their own pace.²¹ However, paraprofessionals and supervisors participating in phase one and three of this dissertation project preferred to receive a mix of online and in-person trainings. The large majority did not want to completely replace face-to-face trainings with online formats only.

Supervisors also mentioned that the online training provides an opportunity to standardize current trainings. This is important because training methods vary among states.¹⁹ Considering that 44 states have purchased ESBA curriculum in the United States,²² an online training could be particularly beneficial to provide standardized training for this curriculum. Providing a consistent training protocol is a best practice in nutrition education program.²³

During phase one, the format and content for the online trainings were identified. Most paraprofessionals preferred a video based online training over a text only online training. The most important content needed was demonstrations on how to teach the *Eating Smart and Being Active During Pregnancy* lesson. Information from this needs assessment informed the development of the videos for the online training.

Forty videos were presented to paraprofessionals. Story boards and scripts were created for the videos. Videos included explanations about who should get the prenatal lessons and

when, how to prepare the materials to teach the lesson, how to teach the lesson (role plays of a paraprofessional teaching a group of pregnant women), explanations of the background nutrition content, and some tips for teaching. The length of the training was about 3-4 hours, but paraprofessionals could complete sections at their own pace and save their progress.

During phase two, principles from the Cognitive Theory of Multimedia Learning, and theoretical constructs that could influence paraprofessionals' teaching self-efficacy were particularly useful in making informed decisions to design the training. Nevertheless, many lessons were learned and reported from the development and implementation of the online training. Developing a video based online training can be time consuming and the cost depends on many factors such as the complexity of the videos, the experience of the training developer, and that of the individuals in the filming and editing team. Key to the implementation of the online training is the learning management system. It is important to select a learning management system that matches the needs of the learners and training designer.

Online trainings can help standardize trainings,²¹ which can help with the fidelity of program delivery.²³ The cost of training paraprofessionals could be lower when done online.²¹ However, it is not the technology that makes people learn, but rather the use of research based principles applied to the development of the online training.²⁴ Training developers need to consider what helps adults learn and apply that information to create online training that stimulate active learning.

Phase three of this investigation provided evidence to suggest that an online training is an effective method to train paraprofessional nutrition educators on how to teach a lesson plan. The online training increased paraprofessionals' knowledge, teaching self-efficacy, and their ability to identify inappropriate teaching practices. The positive improvement in teaching self-efficacy

confirmed the finding from phase one that an online training could increase the paraprofessionals' confidence in teaching this prenatal lesson. Videos on how to teach a lesson can help paraprofessionals feel less intimidated about teaching that lesson.²⁵ Identification of inappropriate teaching practices can help improve the fidelity with which the lesson plans are delivered.

Paraprofessionals positively evaluated the online training. Information gathered from their opinion surveys confirmed another important finding from the first phase of this study. More than 80% of paraprofessionals that completed the online training preferred a mix of online and in-person trainings, which suggests that using online trainings could enhance current training methods. Furthermore, most paraprofessionals reported that they would recommend the current training to other paraprofessional nutrition educators and would like more online trainings like this one in the future.

Implications for Research and Practice

Results from this study suggest that an online training on how to teach a nutrition lesson can be an alternative method to support training of paraprofessional nutrition educators, but it should not completely replace in-person staff development opportunities. Although results from this investigation showed that the online training helped paraprofessionals increase their knowledge, self-efficacy, and ability to identify inappropriate teaching practices, improvements in trainees' actual teaching practices were not assessed due to lack of resources. Thus, this is an area that warrants further investigation among paraprofessional nutrition educators. Also, further research could be done to investigate if more EFNEP pregnant participants get the *Eating Smart and Being Active During Pregnancy* lesson after paraprofessionals have completed the training. If the online training has no significant effect on the number of prenatal lessons taught, it would

be important to investigate if other organizational factors, such as performance evaluations, affect paraprofessional's willingness to teach this supplemental lesson.

There seemed to be a high level of acceptance of including online trainings in staff development programs for EFNEP paraprofessionals; thus, supervisors could start considering developing online trainings. However, while putting together an online training based on written words can be easy and inexpensive; this was the least preferred method to receive content. At a minimum, text would need to be accompanied by audio. The large majority of participants in this study classified themselves as visual learners. Therefore online trainings relying more on videos and/or pictures could be better accepted among EFNEP paraprofessionals. Because creating video based online trainings can be particularly challenging for novice training developers, they could benefit from the lessons learned that were reported in this study. Furthermore, information gathered in phase one of this investigation could inform needs assessments for other online training developers. Additional research could be done to identify specific key elements that should always be provided in effective online trainings for paraprofessional nutrition educators.

In summary, the results from the evaluation of the online training on the *Eating Smart and Being Active During Pregnancy* lesson, suggest that online trainings can be used to train paraprofessional nutrition educators on how to teach a lesson plan. These results also strengthened the limited findings from Christofferson et al (n=22) that an online training can increase the knowledge of paraprofessionals.²¹ Furthermore, this investigation contributes to the overall limited research on training of EFNEP paraprofessional nutrition educators. The assessments used in the training on the ESBA prenatal lesson, also showed that an online training can increase the teaching self-efficacy and ability to identify inappropriate teaching practices among paraprofessionals. Considering the challenges of training EFNEP paraprofessional

nutrition educators, the development, use, and evaluation of additional online trainings are recommended to, in conjunction with in-person trainings, synergistically enhance the preparation of paraprofessionals to be successful nutrition educators.

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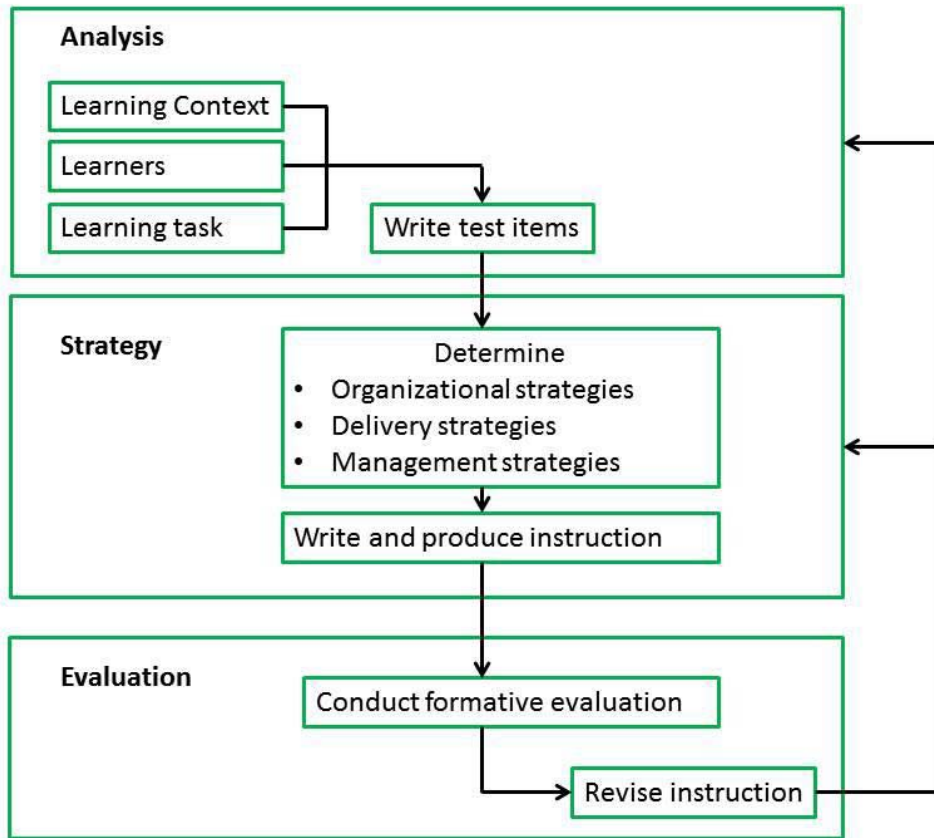
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APPENDICES

APPENDIX A

SMITH AND RAGAN INSTRUCTIONAL DESIGN MODEL

SMITH AND RAGAN INSTRUCTIONAL DESIGN MODEL⁴



⁴ From Smith and Ragan, *Instructional Design*, 3rd Edition. Copyright © 2005 by John Wiley Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

APPENDIX B

INFORMATION PROCESSING ANALYSIS AND PREREQUISITE ANALYSIS

INFORMATION PROCESSING ANALYSIS AND PREREQUISITE ANALYSIS

According to Smith and Ragan’s instructional design model, after the needs assessment is completed, the training designer writes the training goal(s). Later, the training designer conducts an analysis of the training goal(s). The analysis is divided in two steps an “*information processing analysis* of the goal” and a “*prerequisite analysis* of the steps identified in the information-processing analysis.” In the former, the training designer determines all the steps that trainees would need to complete to meet the training goal(s). The latter corresponds to determining what the trainees would need to know or be able to do to complete each step.¹

After the information processing and prerequisite analyses have been done, the training designer can convert steps or prerequisites into training objectives. Smith and Ragan describe two types of objectives, *terminal* objectives (based on the training goals) and *enabling* objectives (based on the information processing and prerequisite analysis).¹ The training goals, information processing and prerequisite analysis, and training objectives (terminal and enabling) are presented below.

Training Goals:

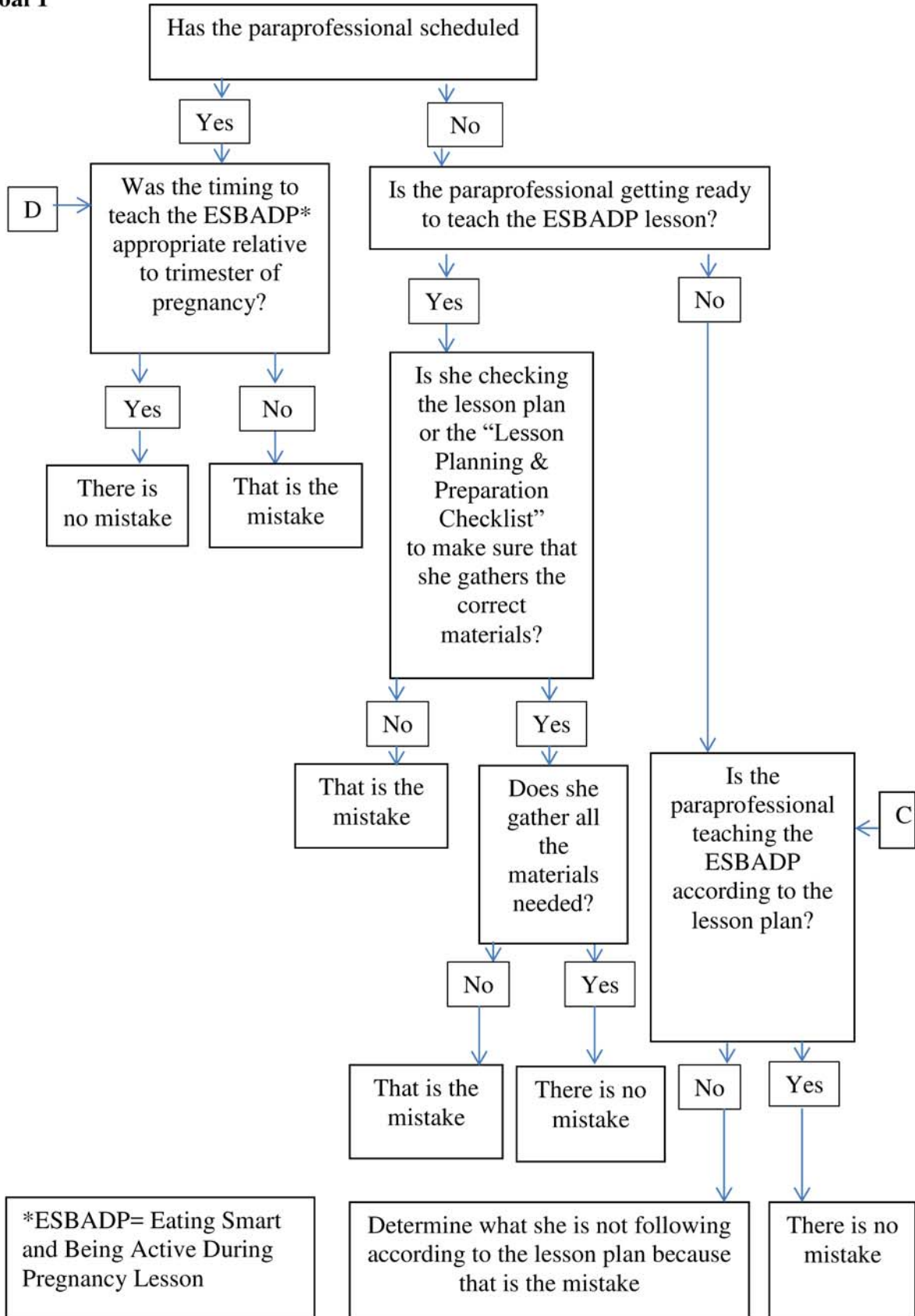
1. Given scenarios of incorrect class preparation or teaching practices, according to the *Eating Smart and Being Active During Pregnancy* lesson plan, paraprofessionals will be able to identify what was right or wrong with the scenario.
2. Given a list of frequently asked questions (FAQ) or misconceptions typically presented by EFNEP participants, paraprofessionals will be able to select the best answer to address these FAQ or misconceptions.

3. Paraprofessionals' perceived self-efficacy in their teaching of the *Eating Smart and Being Active During Pregnancy* lesson will improve.

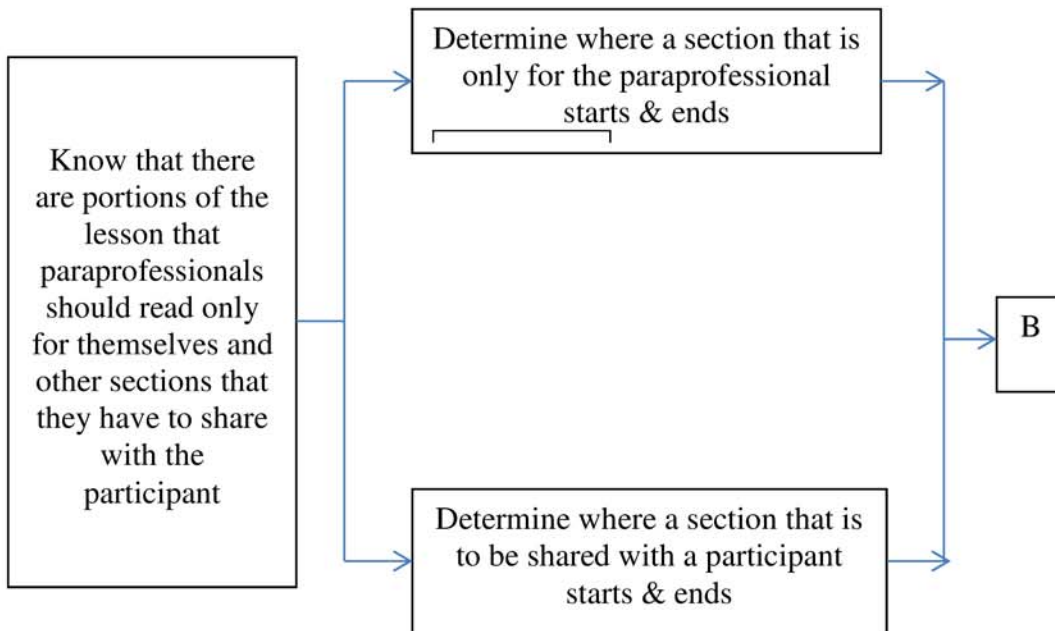
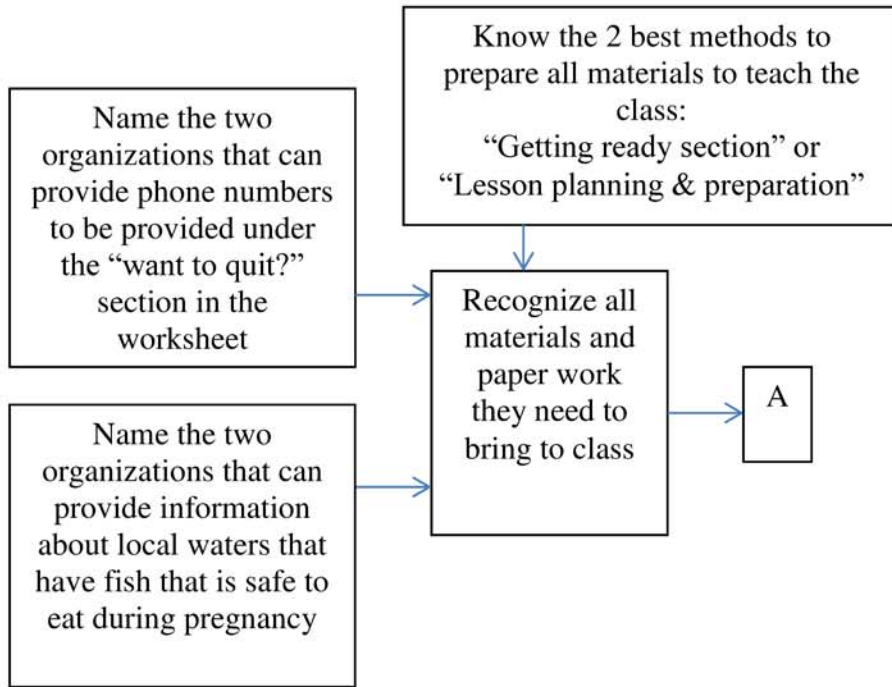
Terminal Objectives:

1. Given scenarios of incorrect class preparation or teaching practices, according to the *Eating Smart and Being Active During Pregnancy* lesson plan, paraprofessionals will be able to identify what was right or wrong with the scenario observed with 75% accuracy.
2. Given a list of FAQ or misconceptions typically presented by EFNEP participants, paraprofessionals will be able to select the best answer to address these FAQ or misconceptions with 75% accuracy.
3. Given questions about paraprofessionals' perceived self-efficacy in their teaching of the *Eating Smart and Being Active During Pregnancy* (ESBA-Pregnancy) lesson, their scores after taking the online training will be significantly higher than their scores prior to the online training.

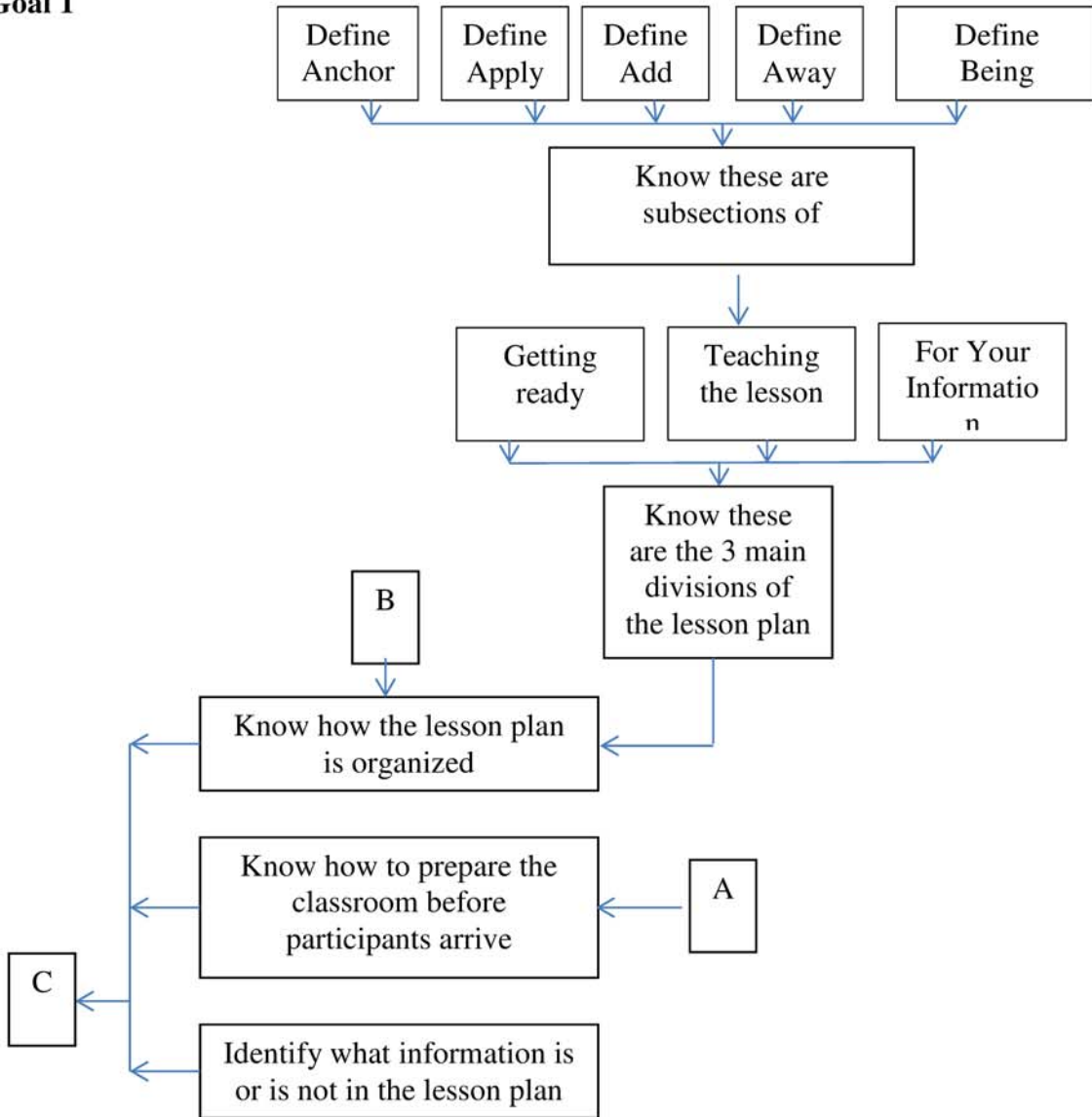
Goal 1



Goal 1

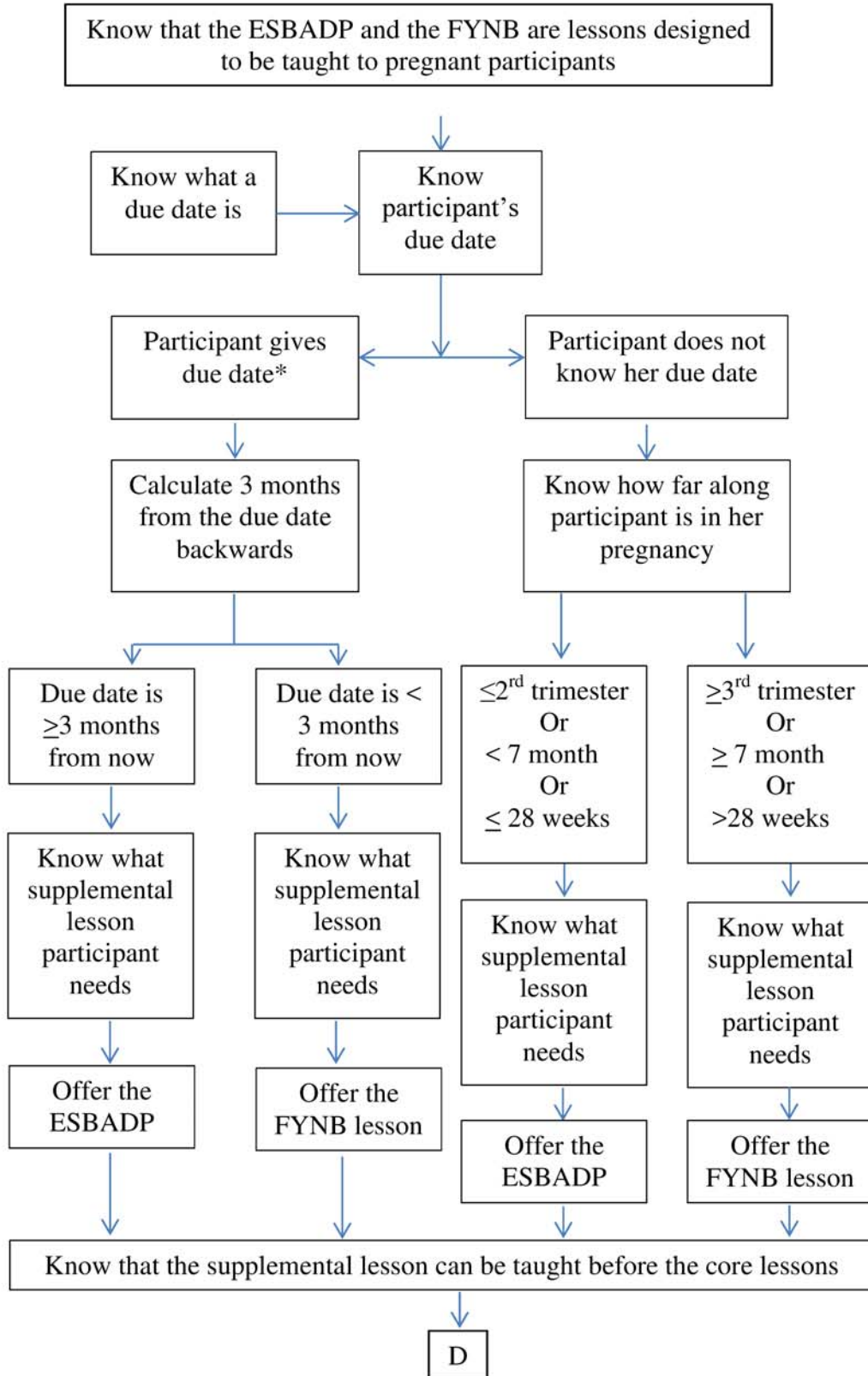


Goal 1



*Due date is priority because with that you can calculate when you could offer the FYNB as well (FYNB= “Feeding Your New Baby lesson”)

Goal 1



Enabling Objectives:

Definition: “knowledge or skills that enable the learner to learn to do the terminal objective.”¹

Enabling Objectives for “Terminal objective 1”

To cover “A”

1. According to the lesson plan, paraprofessionals can select the two organizations that can provide the phone numbers to be provided under the “want to quit” section in the lesson’s worksheet.
2. According to the lesson plan, professionals can select the two organizations that can provide the information about mercury in fish from local waters.
3. Paraprofessionals can identify the two best methods to prepare all materials to teach the ESBA-Pregnancy lesson as learned in the online training.
4. From a list of materials that may or may not be needed for the ESBA-Pregnancy lesson, paraprofessionals can select all of those that would be used to teach this lesson, with no more than one mistake.

To cover “B”

1. Given sections of the lesson plan with numbered lines of text, paraprofessionals can identify all the lines of the dialog that are instructions for them and those lines that they should read to participants.

To cover “C”

1. Given an activity from the ESBA-Pregnancy lesson and a list of materials, paraprofessionals will select all the materials needed for that activity.
2. Given different facts, paraprofessionals will be able to identify what is and what is not in the ESBA-Pregnancy lesson plan, with at least 75% accuracy.

3. Given a list of facts, paraprofessionals will be able to select all of those that can be used to provide a welcoming environment to teach the ESBA-Pregnancy.
4. Given definitions and terms, paraprofessionals will match definitions with the corresponding term (Anchor, Apply, Add, Away) correctly.
5. Given a list of titles, paraprofessionals will identify the four main divisions of the ESBA-Pregnancy lesson plan, correctly.
6. Given a list of titles, paraprofessionals will select the 5 sub-divisions of the “Teaching the lesson” section, correctly.
7. Given a list of titles from different sections of the lesson plan, paraprofessionals will be able to organize them from beginning to end following the structure of the lesson plan, correctly.

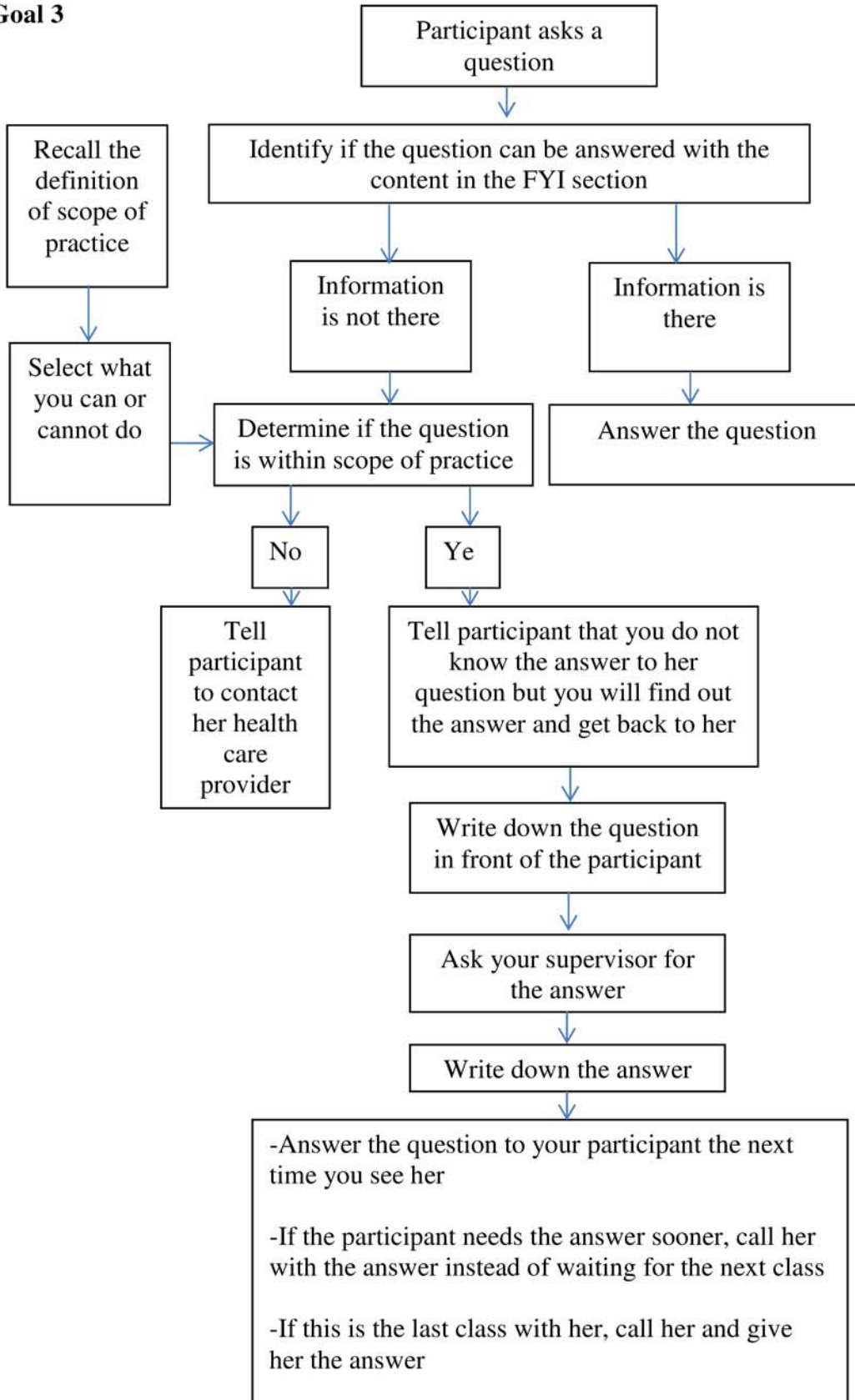
To cover “D”

1. Given a due date, paraprofessionals will be able to determine if the participant is in her third trimester or not with at least 75% accuracy.
2. Given how far along a participant is in her pregnancy (either in trimesters, months or weeks), the paraprofessionals will be able to identify what supplemental lesson she should offer to the participant with at least 75% accuracy.
3. Given a list of options, the paraprofessional will be able to always identify when the ESBA-Pregnancy can be taught.

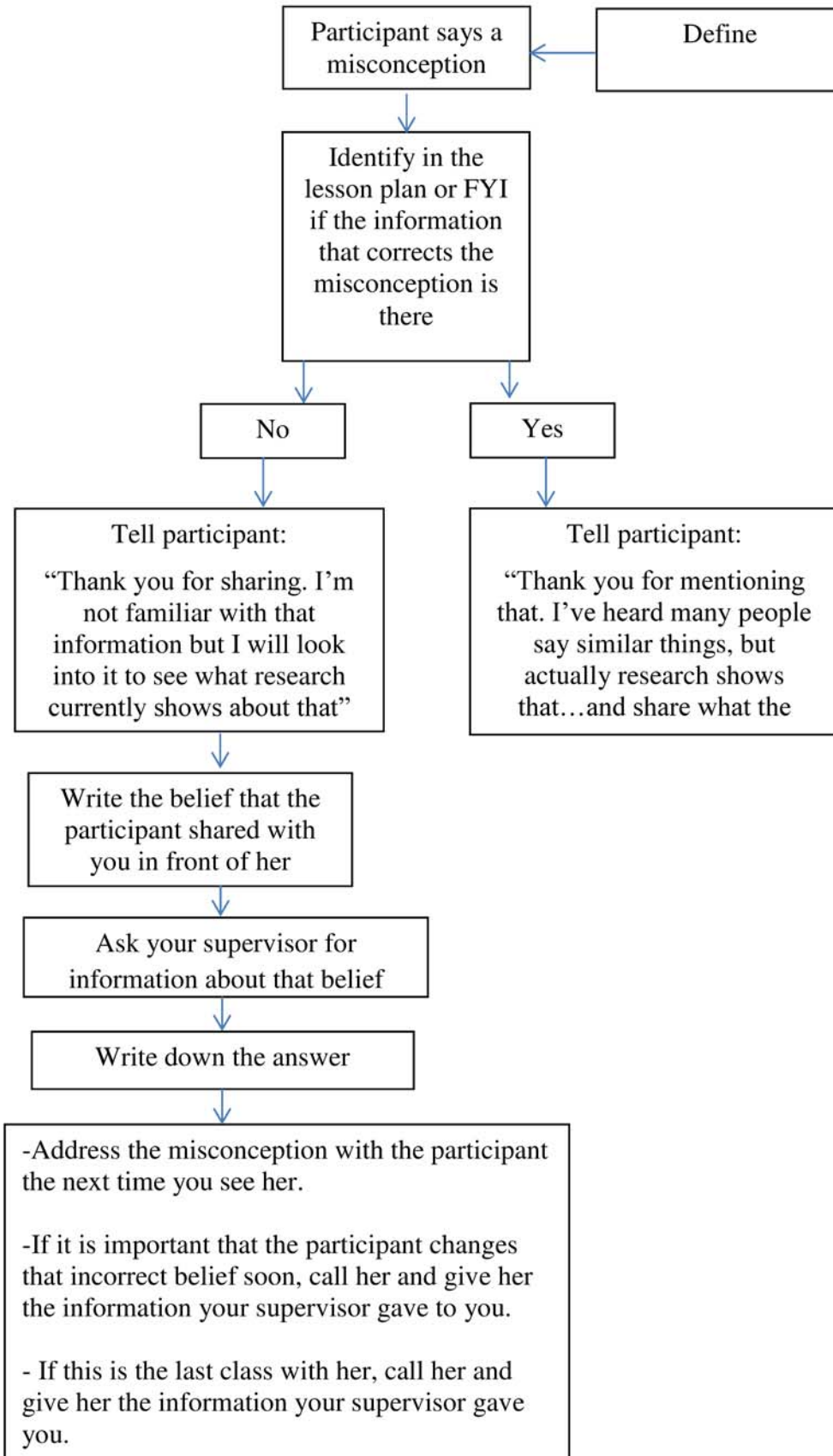
Terminal objective 2:

Given a list of frequently asked questions or misconceptions typically presented by EFNEP participants, paraprofessionals will be able to select the best answer to address these FAQ or misconceptions with at least 75% accuracy.

Goal 3



Goal 3



Enabling Objectives for “Terminal Objective 2”

1. Given a definition of “misconception,” and “Scope of practice,” paraprofessionals will be able to determine which term is being described.
2. Given a list of actions, paraprofessionals will be able to select those that are out of their scope of practice with at least 75% accuracy.
3. Given misconceptions related to pregnancy, paraprofessionals will be able to type the page number where the information to address that misconception is located with at least 75% accuracy.
4. Given frequently asked questions from EFNEP participants, paraprofessionals will be able to type all the page numbers where the information to answer that question is located with at least 75% accuracy.

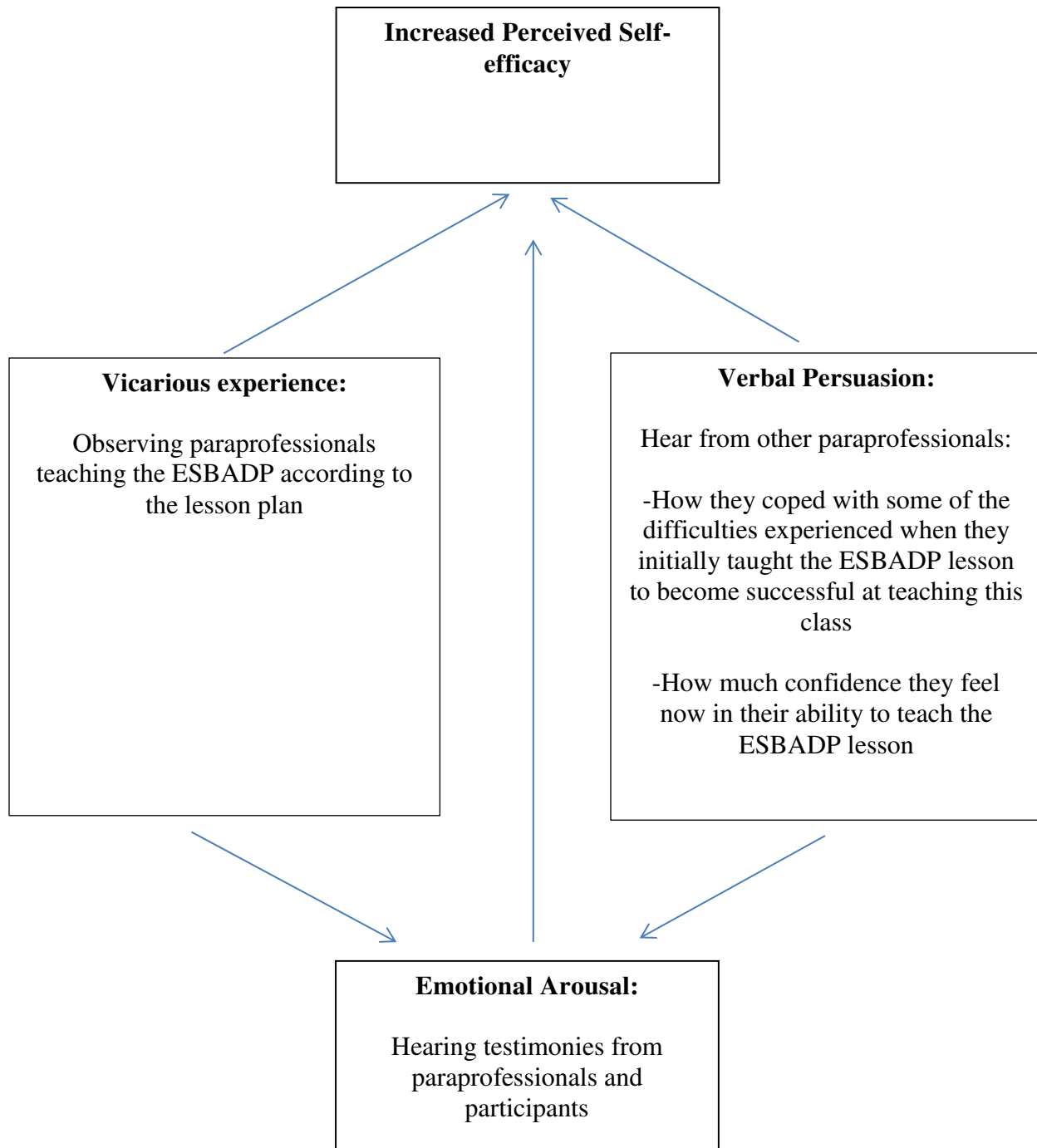
The following are a break down for terminal objective 2. So, they represent the way to measure if the terminal objective was reached or not:

1. Given several options paraprofessionals will select at least half of those that reflect what to do when someone presents a misconception, or a question, and the information to address it cannot be found in the lesson plan or FYI.
2. Given frequently asked questions from EFNEP participants, paraprofessionals will select the answer that best responds to the question, at least 75% of the time.
3. Given some misconceptions related to pregnancy, paraprofessionals will be able to select the alternative answer that best corrects this misconception with at least 75% accuracy.

Terminal objective 3:

Given questions about paraprofessionals' perceived self-efficacy in their teaching of the *Eating Smart and Being Active During Pregnancy* (ESBA-Pregnancy) lesson, their scores after taking the online training will be significantly higher than their scores prior to the online training. The analysis for terminal objective number 3 was done based on Bandura's self-efficacy construct and what influences people's self-efficacy.²

Goal 3



-Performance accomplishments

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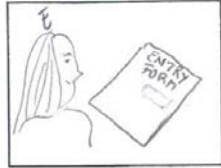
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2. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev*. 1977;84(2):191-215. doi:10.1037/0033-295X.84.2.191.

APPENDIX C

STORY BOARD EXAMPLE

Figure 2. Blank Storyboard

Video Title: Scheduling the Lesson with a participant (Not in lesson Plan)



CU educator
looking at entry
form to see if
the participant
is pregnant



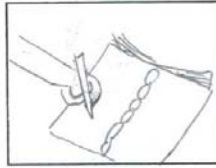
CU educator calling
the participant



MS ed. talking
to ppt. +
confirms pregnancy
due date
offers ESBA
offers to go to ppt's house.



MS: ed. telling her
that the ESBA during
pregnancy would be
a great lesson for
her. Schedules day
time + place and writes
that in her calendar



CU: calendar
and educator's
hand writing ppt's
name.



CU: entry form
The area where
ppt indicated that
she is pregnant is
highlighted with a
square

APPENDIX D

IRB NOTICE OF APPROVAL FOR NEEDS ASSESSMENT

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: March 20, 2014
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Barker, Janell, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: March 19, 2014 Expiration Date: March 06, 2015

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

Janell Barker, Senior IRB Coordinator - (970) 491-1655 Janell.Barker@Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381 Evelyn.Swiss@Colostate.edu

Barker, Janell

Barker, Janell

Approval is to recruit up to 100 participants for Phase I of the study with the approved recruitment and consent material. IN-PERSON INTERVIEWS: The above-referenced project was approved by the Institutional Review Board with the condition that the approved consent form is signed by the subjects and each subject is given a copy of the form. NO changes may be made to this document without first obtaining the approval of the IRB. TELEPHONE INTERVIEWS: Because of the nature of this research, it will not be necessary to obtain a signed consent form. However, all subjects must receive a copy of the approved cover letter. The requirement of documentation of a consent form is waived under § __.117(c)(2). NOTE: This approval is for Phase I only. Please submit an amendment for Phases II and III.

Approval Period: March 19, 2014 through March 06, 2015
Review Type: EXPEDITED
IRB Number: 00000202

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: February 18, 2015
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Swiss, Evelyn, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: March 06, 2015 Expiration Date: March 05, 2016

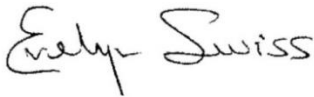
The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381; Evelyn.Swiss@Colostate.edu



Swiss, Evelyn

Approval to recruit the remaining 81 (Phase I) and 80 (Phase II) with the approved recruitment and consent materials. IN-PERSON INTERVIEWS: The above-referenced project was approved by the Institutional Review Board with the condition that the approved consent form is signed by the subjects and each subject is given a copy of the form. NO changes may be made to this document without first obtaining the approval of the IRB. TELEPHONE INTERVIEWS: Because of the nature of this research, it will not be necessary to obtain a signed consent form. However, all subjects must receive a copy of the approved cover letter. The requirement of documentation of a consent form is waived under § __.117(c)(2).

RICRO NOTE: Approval is for Phase I only. Please submit amendments for Phase II and Phase III.

Approval Period: March 06, 2015 through March 05, 2016
Page: 1

APPENDIX E

RECRUITMENT AND CONSENT MATERIALS FOR NEEDS ASSESSMENT:

1. Recruitment e-mail template Colorado
2. Recruitment e-mail template other states
3. Follow-up recruitment e-mail template other states
4. E-mail cover letter consent professionals
5. E-mail cover letter consent paraprofessionals
6. In-person consent needs assessments interviews professionals
7. In-person consent needs assessments interviews paraprofessionals

1. RECRUITMENT E-MAIL TEMPLATE COLORADO

Hi _____,

My name is Micheline Chlipalski. I'm a Ph.D. student at Colorado State University and I'm doing a research project under the guidance of Dr. Susan Baker to develop an online training for EFNEP's paraprofessionals using the *Eating Smart and Being Active During Pregnancy supplemental* lesson. Dr. Susan Baker provided me with your name for a possible phone interview. I would like to interview you either over the phone or in-person at a location that is convenient for you to gather insights about your training on the *Eating Smart • Being Active Supplemental* lessons, your experience teaching these lessons to EFNEP participants, and your opinion about an online training for EFNEP paraprofessionals.

The phone call interview will take no more than 1 hour. If you are interested in participating in this research, please let me know when would be a good day and time to call you schedule the phone interview? Attached you can find a cover letter explaining the details of the study and contact information if you have questions about your rights as a participant.

Thank you for your time.

Micheline Chlipalski

2. RECRUITMENT E-MAIL TEMPLATE OTHER STATES

Dear _____,

I'm contacting you because our records show that you have purchased the Eating Smart • Being Active supplemental lesson: "Eating Smart and Being Active During Pregnancy." I have a PhD student, Micheline Chlipalski, who is designing an online training program for the EFNEP paraprofessionals on this supplemental lesson as her dissertation project. It is important for her research project to gather information about your experiences training paraprofessionals on this lesson so that the online training can best meet paraprofessional's needs.

For this reason I'm contacting you to see if you, and 3 to 4 of your EFNEP educators, who have been trained on this supplemental lesson before 2014, would be willing to participate in a phone interview with Micheline. The interview may take close to an hour and it would be confidential. Your name wouldn't be tied to our records.

Please, let me know if you and 3 to 4 EFNEP educators would be willing to participate in these important interviews. Upon your answer, you would receive a follow up e-mail to coordinate the best day and time for you for the phone interviews.

Thank you so much,

Susan Baker.

3. FOLLOW-UP RECRUITMENT E-MAIL TEMPLATE OTHER STATES

Hi _____,

My name is Micheline Chlipalski. I'm a Ph.D. student at Colorado State University and I'm doing a research project under the guidance of Dr. Susan Baker to develop an online training for EFNEP's paraprofessionals using the *Eating Smart and Being Active During Pregnancy supplemental* lesson. Dr. Susan Baker provided me with your name for a possible phone interview. I would like to interview you over the phone at a day and time that is convenient for you to gather insights about your training on the *Eating Smart • Being Active Supplemental* lessons, your experience teaching these lessons to EFNEP participants, and your opinion about an online training for EFNEP paraprofessionals.

The phone call interview will take no more than 1 hour. If you are interested in participating in this research, please let me know when would be a good day and time to call you schedule the phone interview? Attached you can find a cover letter explaining the details of the study and contact information if you have questions about your rights as a participant.

Thank you for your time.

Micheline Chlipalski

4. E-MAIL COVER LETTER CONSENT PROFESSIONALS



Expanded Food and Nutrition Education Program
Supplemental Nutrition Assistance Program - Education
Department of Food Science and Human Nutrition
1571 Campus Delivery
Fort Collins, Colorado 80523-1571
970-491-2555
FAX: 970-491-8729

Date

Dear Participant,

My name is Micheline Chlipalski and I am a researcher from Colorado State University in the Food Science and Human Nutrition department. We are conducting a research study on the development of an online training for EFNEP paraprofessionals using the **Eating Smart • Being Active Supplemental Lessons**. The title of our project is “*Developing an online training for EFNEP’s paraprofessionals using the Eating Smart • Being Active supplemental lessons*” The Principal Investigator is Dr. Susan Baker from the Food Science and Human Nutrition Department and the Co-Principal Investigator is Micheline Chlipalski from the Food Science and Human Nutrition department.

We would like you to participate in some phone interviews to gather information about your experiences training paraprofessionals on these lessons so that the online training can best meet paraprofessional’s needs. Participation will take approximately one hour. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will keep private all research records that identify you, to the extent allowed by law. For this study, we will assign a code to your data (for example 0001) so that the only place your name will appear in our records is on our data spreadsheet which links you to your code. Only the research team will have access to the link between you, your code, and your data. The only exceptions to this are if we are asked to share the research files for audit purposes with the CSU Institutional Review Board ethics committee, if necessary. In addition, for funded studies, the CSU financial management team may also request an audit of research expenditures. For financial audits, only the fact that you participated would be shared, not any research data.

While there are no direct benefits to you, we hope to gain more knowledge on how to develop an online training for EFNEP paraprofessionals to improve their current training.

There are no known risks associated with taking part in these interviews.

If you would like to participant or have any questions, please contact Micheline Chlipalski at micheline.chlipalski@colostate.edu or Dr. Susan Baker susan.baker@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

Sincerely,

Micheline Chlipalski
PhD Student and Co-Principal Investigator
Food Science and Human Nutrition
Micheline.chlipalski@colostate.edu

Susan Baker EdD
Associate Professor and Principal
Investigator
Food Science and Human Nutrition
Susan.Baker@colostate.edu

5. E-MAIL COVER LETTER CONSENT PARAPROFESSIONALS



Expanded Food and Nutrition Education Program

Supplemental Nutrition Assistance Program - Education

Department of Food Science and Human Nutrition

1571 Campus Delivery

Fort Collins, Colorado 80523-1571

970-491-2555

FAX: 970-491-8729

Date

Dear Participant,

My name is Micheline Chlipalski and I am a researcher from Colorado State University in the Food Science and Human Nutrition department. We are conducting a research study on the development of an online training for EFNEP paraprofessionals using the Eating Smart and Being Active Supplemental Lessons. The title of our project is “*Developing an online training for EFNEP’s paraprofessionals using the Eating Smart • Being Active supplemental lessons*” The Principal Investigator is Dr. Susan Baker from the Food Science and Human Nutrition Department and the Co-Principal Investigator is Micheline Chlipalski from the Food Science and Human Nutrition department.

We would like you to participate in some phone interviews to gather information about your experiences being trained on the **Eating Smart • Being Active supplemental lessons** and teaching these lessons to EFNEP participants, so that the online training can best meet paraprofessional’s needs. Participation will take approximately one hour. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will keep private all research records that identify you, to the extent allowed by law. For this study, we will assign a code to your data (for example 0001) so that the only place your name will appear in our records is on our data spreadsheet which links you to your code. Only the research team will have access to the link between you, your code, and your data. The only exceptions to this are if we are asked to share the research files for audit purposes with the CSU Institutional Review Board ethics committee, if necessary. In addition, for funded studies, the

CSU financial management team may also request an audit of research expenditures. For financial audits, only the fact that you participated would be shared, not any research data.

While there are no direct benefits to you, we hope to gain more knowledge on how to develop an online training for EFNEP paraprofessionals to improve their current training. There are no known risks associated with taking part in these interviews.

If you would like to participant or have any questions, please contact Micheline Chlipalski at micheline.chlipalski@colostate.edu or Dr. Susan Baker susan.baker@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

Sincerely,

Micheline Chlipalski

PhD Student and Co-Principal Investigator
Food Science and Human Nutrition
Micheline.chlipalski@colostate.edu

Susan Baker EdD

Associate Professor and Principal Investigator
Food Science and Human Nutrition
Susan.Baker@colostate.edu

6.IN-PERSON CONSENT NEEDS ASSESSMENTS INTERVIEWS PROFESSIONALS

Consent to be in a Research Study Colorado State University

TITLE OF STUDY: Developing an online training for EFNEP's paraprofessionals using the *Eating Smart • Being Active* supplemental lessons.

PRINCIPAL INVESTIGATOR: Susan S. Baker, EdD. Department of Food Science and Human Nutrition. Phone number: 970-491-5798. Email: Susan.Baker@colostate.edu

CO-PRINCIPAL INVESTIGATORS: Micheline Chlipalski PhD student. Department of Food Science and Human Nutrition. Email: micheline.chlipalski@colostate.edu

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? You are being asked to take part in this study because you have trained paraprofessionals on these supplemental lessons. We would like to ask you a few questions to help us establish the training needs of EFNEP paraprofessionals. Understanding these needs will help us determine the characteristics that an online training should have to train paraprofessionals on the three *Eating Smart • Being Active* supplemental lessons.

WHO IS DOING THE STUDY? The people doing this research are from Colorado State University.

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of the study is to develop an online training for EFNEP paraprofessionals.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? The interview will take place where EFNEP professionals and paraprofessionals work, or over the phone. We plan for this interview to take about 1 hour. We may contact you again for a follow up interview if needed and to schedule an observation of your training of EFNEP paraprofessionals on the supplemental lessons, if you agree to it.

WHAT WILL I BE ASKED TO DO? During the interviews, we would like for you to answer questions openly about the three *Eating Smart • Being Active* supplemental lessons and the training of paraprofessionals on these lessons. We also ask that you answer the questions as best as you can. Once we analyze all the interviewees' responses we may contact you to ask you to confirm if our findings accurately represent your opinions. Also, we may contact you later to schedule an observation of your training of EFNEP paraprofessionals on the supplemental lessons, if you would be willing to it.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? If you have not participated in the training of EFNEP paraprofessionals on any of the three supplemental lessons you could be excluded from participating in this study.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

- There are no known risks associated with taking part in these interviews.
- It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? There are no direct benefits for taking part in this study. However, we hope to use the information obtained from this study to develop an online training for EFNEP paraprofessionals to improve their current training.

Page 1 of 2 Participant's initials _____ Date _____

7. IN-PERSON CONSENT NEEDS ASSESSMENTS INTERVIEWS PARAPROFESSIONALS

Consent to be in a Research Study Colorado State University

TITLE OF STUDY: Developing an online training for EFNEP's paraprofessionals using the *Eating Smart • Being Active* supplemental lessons.

PRINCIPAL INVESTIGATOR: Susan S. Baker, EdD. Department of Food Science and Human Nutrition. Phone number: 970-491-5798. Email: Susan.Baker@colostate.edu

CO-PRINCIPAL INVESTIGATORS: Micheline Chlipalski PhD student. Department of Food Science and Human Nutrition. Email: micheline.chlipalski@colostate.edu

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? You are being asked to take part in this study because you received training on the *Eating Smart • Being Active* supplemental lessons in 2013 or before. We would like to ask you a few questions to help us establish the training needs of EFNEP paraprofessionals. Understanding these needs will help us determine the characteristics that an online training should have to train paraprofessionals on the three *Eating Smart • Being Active* supplemental lessons.

WHO IS DOING THE STUDY? The people doing this research are from Colorado State University.

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of the study is to develop an online training for EFNEP paraprofessionals.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? The interview will take place where EFNEP paraprofessionals work, or over the phone. We plan for this interview to take about 1 hour. We may contact you again for a follow up interview if needed and to schedule an observation of your teaching of the supplemental lessons, if you agree to it.

WHAT WILL I BE ASKED TO DO? During the interviews, we would like for you to answer questions openly about the three *Eating Smart • Being Active* supplemental lessons and the training you have received on these lessons. We also ask that you answer the questions as best as you can. Once we analyze all the interviewees' responses we may contact you to ask you to confirm if our findings accurately represent your opinions. Also, we may contact you later to schedule an observation of your teaching of the supplemental lessons if you would be willing to it.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? If you were not trained on the *Eating Smart • Being Active* supplemental lessons in 2013 or before you could be excluded from participating in this study.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

- There are no known risks associated with taking part in these interviews.
- It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? There are no direct benefits for taking part in this study. However, we hope to use the information obtained from this study to develop an online training for EFNEP paraprofessionals to improve their current training.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate, you may stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Page 1 of 2 Participant's initials _____ Date _____

CSU#: 14-4847H
APPROVED: 3/19/2014 * EXPIRES: 3/6/2015

APPENDIX F

INTERVIEW PROTOCOL SCRIPT AND QUESTIONS

1. Interview protocol script and questions professionals
2. Interview protocol script and questions paraprofessionals who had taught the lessons
3. Interview protocol script and questions paraprofessionals who had not taught that lessons

1. INTERVIEW PROTOCOL SCRIPT AND QUESTIONS PROFESSIONALS

Developing an online training for EFNEP's paraprofessionals using the *Eating Smart • Being Active* supplemental lessons.

Participant number: _____ Start time of interview: _____

Date: _____ End time of interview: _____

Interviewer: _____

Thank you for taking the time to talk with me today. As you know we are interviewing EFNEP professionals in multiple states who are involved with the training of EFNEP's paraprofessionals on the *Eating Smart • Being Active* supplemental lessons: *Eating Smart and Being Active During Pregnancy*, *Feeding Your New Baby* and *Feeding Your Baby Solid Foods*. I am going to tape record this conversation so that we don't miss any of your comments, but your name will not be attached to any specific statements.

I want to encourage you to be completely honest in your comments. There are no right or wrong answers and I want to hear both positive and negative comments, if relevant. The purpose of this conversation is to gather insights about the training of EFNEP paraprofessionals on the three *Eating Smart • Being Active* supplemental lessons from the people most familiar with the training. This conversation will likely last less than 1 hour. Please do not hesitate to ask questions about the study either before starting the interview or during the time of the interview.

Do you have any questions? If you are ready, we can begin.

(Turn on tape recorder and test it. Proceed with questions below)

Questions:

1. I'm going to start by asking you about some of your characteristics that may influence your understanding of nutrition during pregnancy and infant feeding.

- How long have you been working for EFNEP?
- What is your age?
- What is your race and/or ethnicity?
- How many times have you been pregnant?
- How many children do you have?

Observations:

<p>2. We'd like to learn about the training that paraprofessionals receive to be able to teach the 3 <i>Eating Smart • Being Active</i> supplemental lessons: <i>Eating Smart and Being Active During Pregnancy, Feeding Your New Baby, Feeding Your Baby Solid Foods</i>. Given that you have been involved in the training of EFNEP paraprofessionals, please describe how paraprofessionals are currently trained on these 3 <i>Eating Smart • Being Active</i> supplemental lessons.</p> <ul style="list-style-type: none"> • What is the most challenging aspect of training EFNEP paraprofessionals on these 3 supplemental lessons? 	<p><u>Observations:</u></p>
<p>3. We want to talk a little about the implementation of the supplemental lessons. What problems do you see with the implementation of the supplemental lessons?</p> <ul style="list-style-type: none"> • What do you think is the cause of that problem(s)? • How might these problems be addressed? • What concerns do paraprofessionals have? • What questions do EFNEP participants usually have about nutrition during pregnancy and infant feeding? 	<p><u>Observations:</u></p>
<p>4. We'd like to talk about online trainings for EFNEP paraprofessionals. How do you think that an online training could improve current challenges associated to the 3 supplemental lessons?</p> <ul style="list-style-type: none"> • In what ways might an online training on these three lessons be used? (Probe: How would you like an online training on the 3 supplemental lessons to be? Done in groups, independent, with videos, reading, something you can take many times) • What should be included in this online training? (probe: how to teach the lesson, the FYI, something else?) • What would be needed to effectively train EFNEP paraprofessionals online on the three <i>Eating Smart • Being Active</i> supplemental lessons? • What type of computer and Internet access do paraprofessionals have? • What could motivate paraprofessionals to undergo an online training on these 3 supplemental lessons? • What challenges do you see with implementing an online training with EFNEP paraprofessionals? • What type of support do you think that paraprofessionals may need to succeed when taking an online training? 	<p><u>Observations:</u></p>

5. We are just about done here. Based on this conversation are there any other **things you want to add** with regards to the **development of an online training** for EFNEP paraprofessionals on these three supplemental lessons?

Observations:

Conclusion:

Thank you again for your time and insights. This has been very helpful. Again, your comments and responses are completely confidential. Your name will not be associated with the research findings in any way, and your identity as a participant will be known only to me, the researcher. Do you have any questions?

2.INTERVIEW PROTOCOL SCRIPT AND QUESTIONS PARAPROFESSIONALS WHO HAD TAUGHT THE LESSONS

Interview protocol, script, and questions paraprofessionals-taught the lessons

Page 1 of 3

Developing an online training for EFNEP's paraprofessionals using the *Eating Smart • Being Active* supplemental lessons.

Participant number: _____ Start time of interview: _____

Date: _____ End time of interview: _____

Interviewer: _____

Thank you for taking the time to talk with me today. As you know we are interviewing EFNEP paraprofessionals in multiple states who were trained in 2013 or before on the *Eating Smart • Being Active* supplemental lessons: *Eating Smart and Being Active During Pregnancy, Feeding Your New Baby and Feeding Your Baby Solid Foods*. I am going to tape record this conversation so that we don't miss any of your comments, but your name will not be attached to any specific statements.

I want to encourage you to be completely honest in your comments. There are no right or wrong answers and I want to hear both positive and negative comments, if relevant. The purpose of this conversation is to gather insights about the training of EFNEP paraprofessionals on the three *Eating Smart • Being Active* supplemental lessons from the people most familiar with the training. This conversation will likely last less than 1 hour. Please do not hesitate to ask questions about the study either before starting the interview or during the time of the interview.

Do you have any questions? If you are ready, we can begin.

(Turn on tape recorder and test it. Proceed with questions below.)

Questions:

1. I'm going to start by asking you about some of your characteristics that may influence your understanding of nutrition during pregnancy and infant feeding.

- How long have you been working for EFNEP?
- What is your age?
- What is your race and/or ethnicity?
- How many times have you been pregnant?
- How many children do you have?

Observations:

<p>2. We'd like to learn about the training that you have received to be able to teach the 3 <i>Eating Smart • Being Active</i> supplemental lessons: <i>Eating Smart and Being Active During Pregnancy</i>, <i>Feeding Your New Baby</i>, <i>Feeding Your Baby Solid Foods</i>. Please describe any training that you have received to prepare you to teach these 3 supplemental lessons. (Probe: How long it was, what type of practice, what demonstrations, was it face to face, distance, etc.)</p> <ul style="list-style-type: none"> • What would you change/add to the training you got? • Please describe any other training that you have received outside EFNEP on maternal and infant nutrition. 	<p><u>Observations:</u></p>
<p>3. We want to talk a little about the implementation of these 3 supplemental lessons. What problems do you see with the implementation of the supplemental lessons?</p> <ul style="list-style-type: none"> • What do you think is the cause of that problem(s)? • What challenges have you had when teaching these lessons? • How have you dealt with these challenges? • How has being a mother or helping raise a child affected how you teach the content of these 3 lessons? 	<p><u>Observations:</u></p>
<p>4. We'd like to know about questions that EFNEP participants usually ask you about maternal and infant nutrition. What questions do EFNEP participants have about nutrition during pregnancy or infant feeding?</p> <ul style="list-style-type: none"> • How prepared did you feel to answer these questions? • What did you do when you didn't know the answer to the questions? 	

5. We'd like to talk about **online trainings** for EFNEP paraprofessionals. What type of experience do you have taking online trainings? (if necessary explain: online training is a type of distance training that people take on the Internet, or using a CD-ROM or DVD and usually is done alone)

- How could an online training on these three lessons help you feel better prepared to teach the 3 supplemental lessons?
- How would you like an online training on the 3 supplemental lessons to be? (probe: done in groups, independent, with videos, reading, something you can take many times)
- What should be included in this online training? (probe: how to teach the lesson, the FYI, something else?)
- What could you learn in an online training about these lessons that would make you want to participate in the online training?
- What type of support would you need to feel confident taking an online training?

Observations:

6. We are just about done here. Based on this conversation are there any other **things you want to add** with regards to the **development** of an **online training** for EFNEP paraprofessionals on these three supplemental lessons?

Observations:

Conclusion:

Thank you again for your time and insights. This has been very helpful. Again, your comments and responses are completely confidential. Your name will not be associated with the research findings in any way, and your identity as a participant will be known only to me, the researcher. Do you have any questions?

3.INTERVIEW PROTOCOL SCRIPT AND QUESTIONS PARAPROFESSIONALS WHO HAD NOT TAUGHT THAT LESSONS

Interview protocol, script, and questions paraprofessionals-haven't taught the lessons	Page 1 of 3
<p>Developing an online training for EFNEP's paraprofessionals using the <i>Eating Smart • Being Active</i> supplemental lessons.</p>	
Participant number: _____	Start time of interview: _____
Date: _____	End time of interview: _____
Interviewer: _____	
<p>Thank you for taking the time to talk with me today. As you know we are interviewing EFNEP paraprofessionals in multiple states who were trained in 2013 or before on the <i>Eating Smart • Being Active</i> supplemental lessons: <i>Eating Smart and Being Active During Pregnancy, Feeding Your New Baby</i> and <i>Feeding Your Baby Solid Foods</i>. I am going to tape record this conversation so that we don't miss any of your comments, but your name will not be attached to any specific statements.</p> <p>I want to encourage you to be completely honest in your comments. There are no right or wrong answers and I want to hear both positive and negative comments, if relevant. The purpose of this conversation is to gather insights about the training of EFNEP paraprofessionals on the three <i>Eating Smart • Being Active</i> supplemental lessons from the people most familiar with the training. This conversation will likely last less than 1 hour. Please do not hesitate to ask questions about the study either before starting the interview or during the time of the interview.</p> <p>Do you have any questions? If you are ready, we can begin.</p> <p>(Turn on tape recorder and test it. Proceed with questions below.)</p>	
<p><u>Questions:</u></p> <p>1. I'm going to start by asking you about some of your characteristics that may influence your understanding of nutrition during pregnancy and infant feeding.</p> <ul style="list-style-type: none"> • How long have you been working for EFNEP? • What is your age? • What is your race and/or ethnicity? • How many times have you been pregnant? • How many children do you have? 	<p><u>Observations:</u></p>

<p>2. We'd like to learn about the training that you have received to be able to teach the 3 <i>Eating Smart • Being Active</i> supplemental lessons: <i>Eating Smart and Being Active During Pregnancy, Feeding Your New Baby, Feeding Your Baby Solid Foods</i>. Please describe any training that you have received to prepare you to teach these 3 supplemental lessons. (Probe: How long it was, what type of practice, what demonstrations, was it face to face, distance, etc.)</p> <ul style="list-style-type: none"> • What would you change/add to the training you got? • Please describe any other training that you have received outside EFNEP on maternal and infant nutrition. 	<p><u>Observations:</u></p>
<p>3. We want to talk a little about the implementation of the supplemental lessons: <i>Eating Smart and Being Active During Pregnancy, Feeding Your New Baby, Feeding Your Baby Solid Foods</i>. What problems do you see with teaching these supplemental lessons?</p> <ul style="list-style-type: none"> • Why do you think these problems exist? • What has prevented you from teaching these 3 supplemental lessons? • How has being a mother or helping raise a child affected your willingness to teach the content of these 3 lessons? 	<p><u>Observations:</u></p>
<p>4. We'd like to talk about online trainings for EFNEP paraprofessionals. What type of experience do you have taking online trainings? (if necessary explain: online training is a type of distance training that people take on the Internet, or using a CD-ROM or DVD and usually is done alone)</p> <ul style="list-style-type: none"> • How could an online training on these three lessons help you feel better prepared to teach the 3 supplemental lessons? • How would you like an online training on the 3 supplemental lessons to be? (probe: done in groups, independent, with videos, reading, something you can take many times) • What should be included in this online training? (probe: how to teach the lesson, the FYI, something else?) • What could you learn in an online training about these lessons that would make you want to participate in the online training? • What type of support would you need to feel confident taking an online training? 	<p><u>Observations:</u></p>

5. We are just about done here. Based on this conversation are there **any other things** you want to add with regards to the **development of an online training** for EFNEP paraprofessionals on these three supplemental lessons?

Observations:

Conclusion:

Thank you again for your time and insights. This has been very helpful. Again, your comments and responses are completely confidential. Your name will not be associated with the research findings in any way, and your identity as a participant will be known only to me, the researcher. Do you have any questions?

APPENDIX G

IRB AMENDMENT

1. IRB notice of approval for amendment to revised recruitment e-mail
2. Revised recruitment e-mail
3. Stand-alone video-photo consent release form

1. IRB NOTICE OF APPROVAL FOR AMENDMENT TO REVISED RECRUITMENT E-MAIL



Research Integrity & Compliance Review Office
Office of the Vice President for Research
321 General Services Building - Campus Delivery 2011 Fort Collins,
CO
TEL: (970) 491-1553
FAX: (970) 491-2293

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: September 29, 2014
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Swiss, Evelyn, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: September 26, 2014 Expiration Date: March 06, 2015

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381; Evelyn.Swiss@Colostate.edu

Swiss, Evelyn

Swiss, Evelyn

Amendment is approved to use the revised recruitment email and to add the use of a stand-alone video-photo consent release form. No change in risk.

Approval Period: September 26, 2014 through March 06, 2015
Review Type: EXPEDITED
IRB Number: 00000202

2. REVISED RECRUITMENT E-MAIL

Dear _____,

I'm contacting you because our records show that you have purchased the Eating Smart • Being Active supplemental lesson: "Eating Smart and Being Active During Pregnancy." I have a PhD student, Micheline Chlipalski, who is designing an online training program for the EFNEP paraprofessionals on this supplemental lesson as her dissertation project. It is important for her research project to gather information about trainers' experiences preparing paraprofessionals on this lesson so that the online training can best meet paraprofessional's needs.

For this reason I'm contacting you to see if the following EFNEP employees would be willing to participate in a phone interview with Micheline. The interview may take close to an hour and it would be confidential. Their names wouldn't be tied to our records.

Micheline would like to interview:

1 professional who has trained educators on the Eating Smart • Being Active supplemental lesson: "Eating Smart and Being Active During Pregnancy" and 4 EFNEP educators who have been trained on this supplemental lesson before 2014 (2 that have experience teaching the supplemental lesson and 2 that were trained before 2014 but haven't taught the supplemental lesson yet)

Please, let me know if they would be willing to participate in these important interviews. Upon your answer, they would receive a follow up e-mail to coordinate the best day and time for them for the phone interviews.

Thank you so much,

Susan Baker.

3. STAND-ALONE VIDEO-PHOTO CONSENT RELEASE FORM



Developing an online training for EFNEP's paraprofessionals using the
Eating Smart • Being Active supplemental lessons

Release Form for Use of Photograph/Videotape

Micheline Chlipalski
Susan S. Baker, EdD (Advisor)
Department Name: Food Science and Human Nutrition
970-491-5798
micheline.chlipalski@colostate.edu

Please print:

Name of Participant: _____

Address: _____

I am 18 years of age or older and hereby give my permission to Micheline Chlipalski to use any photos or videotape material taken of myself during her research on "Developing an Online Training for EFNEP's Paraprofessionals Using the Eating Smart • Being Active Supplemental Lessons." The photos and videotape material will only be used for research purposes and for the presentation of the research. My name will not be used in any publication. I will make no monetary or other claim against CSU for the use of the photograph(s)/video. As with all research consent, I may at any time withdraw permission for photos or video footage of me to be used in this research project.

Signature: _____ Date: _____

If Participant is under 18 years old, consent must be provided by the parent or legal guardian:

Printed Name: _____ Date: _____

Parent/Guardian Signature: _____

IRB No.: 14-4847
Date of IRB Approval: 9/26/2014

APPENDIX H

IRB NOTICE OF APPROVAL FOR FACE VALIDITY AND RELIABILITY TESTING

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: February 18, 2015
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Swiss, Evelyn, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: March 06, 2015 Expiration Date: March 05, 2016

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381; Evelyn.Swiss@Colostate.edu



Swiss, Evelyn

Approval to recruit the remaining 81 (Phase I) and 80 (Phase II) with the approved recruitment and consent materials. IN-PERSON INTERVIEWS: The above-referenced project was approved by the Institutional Review Board with the condition that the approved consent form is signed by the subjects and each subject is given a copy of the form. NO changes may be made to this document without first obtaining the approval of the IRB. TELEPHONE INTERVIEWS: Because of the nature of this research, it will not be necessary to obtain a signed consent form. However, all subjects must receive a copy of the approved cover letter. The requirement of documentation of a consent form is waived under § __.117(c)(2).

RICRO NOTE: Approval is for Phase I only. Please submit amendments for Phase II and Phase III.

Approval Period: March 06, 2015 through March 05, 2016

Page: 1

Review Type: EXPEDITED
IRB Number: 00000202

APPENDIX I:

MATERIAL FOR FACE VALIDITY AND RELIABILITY TESTING:

1. Face validity recruitment email-supervisor
2. Face validity recruitment email-paraprofessionals
3. Face validity cover letter recruitment e-mail
4. Face validity protocol
5. Face validity signed consent form
6. Reliability testing recruitment e-mail-supervisor
7. Reliability testing recruitment e-mail-paraprofessionals
8. Reliability testing e-mail cover letter

1. FACE VALIDITY RECRUITMENT E-MAIL-SUPERVISOR

To recruit participants:

CSU EFNEP/SNAP-Ed will put PhD student in contact with the paraprofessionals' supervisor, to ask permission to participate in their monthly staff meeting. At that meeting the student will explain the study, the consent form, give that form and get signatures from those paraprofessionals that want to participate.

E-mail to contact supervisor-Sent by PhD student.

Dear _____,

I'm contacting you because Dr. Susan Baker gave me your name to ask for your authorization to joint your staff monthly meeting to ask your educators if they would like to participate in the face-validity of our study.

If I can joint you and your group, please let me know. Attached you will find the consent form that paraprofessionals will sign, as well as my interview protocol.

Thank you,

Micheline

2. FACE VALIDITY RECRUITMENT EMAIL-PARAPROFESSIONALS

Hi _____,

My name is Micheline Chlipalski. I'm a Ph.D. student at Colorado State University and I'm doing a research project under the guidance of Dr. Susan Baker to develop an online training for EFNEP's paraprofessionals using the Eating Smart and Being Active During Pregnancy supplemental lesson. Dr. Susan Baker provided me with your name and e-mail address to contact you for your potential participation in the analysis of the practice and evaluation items that we plan to use in our final online training.

We would like you to read these items during one of your monthly team meetings. Your supervisor would let you know ahead of time when this meeting would take place. That they researchers from Colorado State University will connect to you and your co-workers via Adobe Connect to explain you how to proceed and to answer any questions that you may have.

Your participation is very important to us because it would give us an understanding of what needs to be improved in the practice and evaluation items that will help us determine if our online training was effective or not. However, your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty. Attached you can find a cover letter providing more details about your participation on this part of our research project.

Thank you for your time.

Micheline Chlipalski

3. FACE VALIDITY COVER LETTER



Expanded Food and Nutrition Education Program
Supplemental Nutrition Assistance Program - Education
Department of Food Science and Human Nutrition
1571 Campus Delivery
Fort Collins, Colorado 80523-1571
970-491-2555
FAX: 970-491-8729

Date

Dear Participant,

My name is Micheline Chlipalski and I am a researcher from Colorado State University in the Food Science and Human Nutrition department. We are conducting a research study on development and evaluation of an online training for EFNEP paraprofessional nutrition educators. The title of our project is *"Developing an online training for EFNEP's paraprofessionals using the Eating Smart • Being Active supplemental lesson."* The Principal Investigator is Dr. Susan Baker from the Department of Food Science and Human Nutrition and I'm a Co-Principal investigator.

We would like you to review and write comments about the practice and evaluation questions we have developed to evaluate our online training. Your opinion is extremely valuable because other educators, like you, will be taking this online training across the country and we want to have questions that are easy to understand so they feel comfortable answering them.

During one of your monthly unit meetings researchers from CSU will connect with you and your co-workers online, via Adobe Connect or some similar technology, to provide you with instructions and answer any questions that you may have. We will give you time to read the questions and write any comments that can help us improve the wording of these questions. Your written responses can be faxed and your supervisor can help you do that.

We will keep private all research records that identify you, to the extent allowed by law.

For this study, we will assign a code to your data (for example 30) so that the only place your name will appear in our records is on the consent and in our data spreadsheet which links you to your code. Only the research team will have access to the link between you, your code, and your data. The only exceptions to this are if we are asked to share the research files for audit purposes with the CSU Institutional Review Board ethics committee, if necessary. In addition, for funded studies, the CSU financial management team may also request an audit of research expenditures. For financial audits, only the fact that you participated would be shared, not any research data. While there are no direct benefits for taking part in this study, we hope to use the information obtained from this study to develop an appropriate evaluation for the online training for EFNEP paraprofessionals to improve their current training.

There are no known risks associated with taking part in these interviews. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you would like to participate or have any questions, please contact Micheline Chlipalski at Micheline.chlipalski@colostate.edu or Dr. Susan Baker at susan.baker@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Sincerely,

Susan Baker, Ed.D
Associate Professor & Principal Investigator
Food Science and Human Nutrition
Susan.Baker@colostate.edu

Micheline Chlipalski
Ph.D. Student and Co-Principal Investigator
Food Science and Human Nutrition
Micheline.chlipalski@colostate.edu

4. FACE VALIDITY PROTOCOL

Face Validity Protocol for the following instruments:

-Online training demographic questions

-Online training pre-/post-tests and 5 scenarios (only post-test)

-Online training reaction questions (in post-test)

1. Briefly explain the online training that we are developing and how the following instruments will be part of the training.
2. Give consent form to each participant
3. Review consent form and answer any questions.
4. Get signed consent from people that want to participate.
5. Explain that our objective is to know what questions they consider confusing or don't know how to answer.
6. Give one instrument at a time.
7. Read the instructions of the corresponding instrument.
8. Tell participants to mark each confusing question (with a question mark, an asterisk, etc), those they had a hard time answering, or any words that may need to be changed. Explain to them that each person will be reading at a different speed, so after everyone has finished, we will go over those questions that they have marked.
9. Have participants review and answer all the questions.
10. Once participants finish answering an instrument, tell them that you will go one section at a time to gather their opinions about the questions they reviewed and answered.

Probing questions:

1. Which questions in this section you were unsure how to answer? What was confusing about them?
2. How easy or hard was it to find your answer among the choices given for this question? What was easy or hard about answering this question?
3. Which questions/words were confusing? Could you suggest a better way to write this question or a better word to use instead?

Probing question number 3 may not be needed if participants provide enough information when answering probing questions 1 and 2

5. FACE VALIDITY SIGNED CONSENT FORM

Consent to be in a Research Study Colorado State University

TITLE OF STUDY: Developing an online training for EFNEP's paraprofessionals using the *Eating Smart • Being Active* supplemental lessons.

PRINCIPAL INVESTIGATOR: Susan S. Baker, EdD. Department of Food Science and Human Nutrition. Phone number: 970-491-5798. Email: Susan.Baker@colostate.edu

CO-PRINCIPAL INVESTIGATORS: Micheline Chlipalski PhD student. Department of Food Science and Human Nutrition. Email: micheline.chlipalski@colostate.edu

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? We would like to speak with you about how clear and understandable some questions are on a demographic survey and on an evaluation we developed to assess our online training. You are being asked about these questions because you have a similar job to the people who will take the online training.

WHO IS DOING THE STUDY? The people doing this research are from Colorado State University.

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of the study is to find out how clear the demographic and evaluation questions are and change questions that are unclear.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? The study will take place where EFNEP paraprofessionals work, or during one of your staff meetings. We plan for this interview to take about 1 hour. We may contact you again if needed, if you agree to it.

WHAT WILL I BE ASKED TO DO? You will be asked questions about what some survey questions mean to you and what parts of the questions were confusing to you.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? None that are known to us.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

- You may experience discomfort when answering some questions. Other than that, there are no known risks associated with taking part in this study.
- It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? There are no direct benefits for taking part in this study. However, other educators, like you, will be taking this online training across the country and we want to have questions that are easy to understand so they feel comfortable answering them.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate, you may stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WHO WILL SEE THE INFORMATION THAT I GIVE? We will keep private all research records that identify you, to the extent allowed by law.

For this study, we will assign a code to your data (for example 1) so that the only place your name will appear in our records is on the consent and in our data spreadsheet which links you to your code. Only the research team will have access to the link between you, your code, and your data. The only exceptions to this are if we are asked to share the research files for audit purposes with the CSU Institutional Review

Page 1 of 2 Participant's initials _____ Date _____

6. RELIABILITY TESTING RECRUITMENT E-MAIL-SUPERVISOR

Dear _____,

I'm contacting you because I have a PhD student, Micheline Chlipalski, who is designing an online training program for the EFNEP paraprofessionals on the Eating Smart and Being Active During Pregnancy supplemental lesson as her dissertation project. It is important for her research to determine the reliability of the test items that will be part of the evaluation of this online training.

For this reason I'm contacting you to see if educators from your unit would be willing to participant in our test/re-test reliability evaluation. We would prefer to recruit educators that do not have college education, but if your educators do not meet this criterion, it is fine. They can still participate.

Their participation would be to complete an online test twice, which would be two weeks apart. They would receive an e-mail with simple instructions to access the online evaluation. Therefore, they can complete the test from the comfort of their office. It should not take them more than one hour to complete each test. Attached you can find a cover letter providing more details about this part of our research project.

Please, let me know who would be willing to participate in these important part of our research project. If you could provide me with their names and individual e-mail address, Micheline would contact them to confirm for their desire to participate.

Thank you so much,

Susan Baker.

7. RELIABILITY TESTING RECRUITMENT E-MAIL-PARAPROFESSIONALS

Hi _____,

My name is Micheline Chlipalski. I'm a Ph.D. student at Colorado State University and I'm doing a research project under the guidance of Dr. Susan Baker to develop an online training for EFNEP's paraprofessionals using the Eating Smart and Being Active During Pregnancy supplemental lesson. Dr. Susan Baker provided me with your name and e-mail address to contact you for your potential participation in taking an online evaluation test twice to determine if it is a reliable instrument to evaluate the online training that we are creating.

We would like you to complete our online training's evaluation two times. We will send you an e-mail with the information about how to access the online evaluation, you just need to complete that document and submit it before the deadline. After two week, we will send you a link to the evaluation again and you would need to complete it one more time, and submit that second test before the deadline. Participation will take less than an hour to complete the test. (*State amount of time for each activity*). Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty. Attached you can find a cover letter providing more details about your participation on this part of our research project.

Thank you for your time.

Micheline Chlipalski

8. RELIABILITY TESTING E-MAIL COVER LETTER



Expanded Food and Nutrition Education Program
Supplemental Nutrition Assistance Program - Education
Department of Food Science and Human Nutrition
1571 Campus Delivery
Fort Collins, Colorado 80523-1571
970-491-2555
FAX: 970-491-8729

Date

Dear Participant,

My name is Micheline Chlipalski and I am a researcher from Colorado State University in the Food Science and Human Nutrition department. We are conducting a research study on development and evaluation of an online training for EFNEP paraprofessional nutrition educators. The title of our project is *"Developing an online training for EFNEP's paraprofessionals using the Eating Smart • Being Active supplemental lesson."* The Principal Investigator is Dr. Susan Baker from the Department of Food Science and Human Nutrition and I'm a Co-Principal investigator.

We would like you to complete our online training's evaluation two times. We will send you an e-mail with the information about how to access the online evaluation, you just need to complete that document and submit it before the deadline. After two week, we will send you a link to the evaluation again and you would need to complete it one more time, and submit that second test before the deadline. Participation will take less than an hour to complete the test. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will keep private all research records that identify you, to the extent allowed by law.

For this study, we will assign a code to your data (for example 30) so that the only place your name will appear in our records is on the consent and in our data spreadsheet which links you to your code. Only the research team will have access to the link between you, your code, and your data. The only exceptions to this are if we are asked to share the research files for audit purposes with the CSU Institutional Review Board ethics committee, if necessary. In addition, for funded studies, the CSU financial management team may also request an audit of research expenditures. For financial audits, only the fact that you participated would be shared, not any research data. While there are no direct benefits for taking part in this study, we hope to use the information obtained from this study to develop an appropriate evaluation for the online training for EFNEP paraprofessionals to improve their current training.

There are no known risks associated with taking part in these interviews. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you would like to participate or have any questions, please contact Micheline Chlipalski at Micheline.chlipalski@colostate.edu or Dr. Susan Baker at susan.baker@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Sincerely,

Susan Baker, Ed.D
Associate Professor & Principal Investigator
Food Science and Human Nutrition
Susan.Baker@colostate.edu

Micheline Chlipalski
Ph.D. Student and Co-Principal Investigator
Food Science and Human Nutrition
Micheline.chlipalski@colostate.edu

APPENDIX J

IRB NOTICE OF APPROVAL - UPDATE FOR NEW RESEARCH YEAR

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: March 27, 2015
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Swiss, Evelyn, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: March 25, 2015 Expiration Date: March 05, 2016

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381; Evelyn.Swiss@Colostate.edu



Swiss, Evelyn

Amendment is approved to 1. update the procedures to include meeting with subjects in-person instead of only via webinar; 2. use the signed consent form, the scenarios, demographic, pre- and post- questions for this population; and, 3. to increase the number approved to recruit by 20 for these in-person interviews. Total number now approved to recruit is 200 (For phase 1 - 100 people; Phase II - 80 people; Face-to-Face Interviews - 20 people). No change in risk.

Approval Period: March 25, 2015 through March 05, 2016
Review Type: EXPEDITED
IRB Number: 00000202

APPENDIX K

IRB APPROVAL FOR EVALUATION OF THE ONLINE TRAINING

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: June 04, 2015
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Swiss, Evelyn, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: June 02, 2015 Expiration Date: March 05, 2016

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu

Evelyn Swiss, IRB Coordinator - (970) 491-1381; Evelyn.Swiss@Colostate.edu



Swiss, Evelyn

Amendment is approved for the next phase of the project: EFNEP (and SNAP-Ed programs that are managed identically as EFNEP) in all states and US territories will be contacted with the approved recruitment/consent cover letter to ask if they have paraprofessional nutrition educators that would like to participate in this project by taking an online training. No change in risk

Approval Period: June 02, 2015 through March 05, 2016
Review Type: EXPEDITED
IRB Number: 00000202

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: July 30, 2015
TO: Baker, Susan, Food Sci. & Human Nutrition
Auld, Garry, Food Sci. & Human Nutrition, Watson, Dwayne, Food Sci. & Human Nutrition, Chlipalski, Micheline, Food Sci. & Human Nutrition, Pagliassotti, Michael, Food Sci. & Human Nutrition
FROM: Swiss, Evelyn, Coordinator, CSU IRB 2
PROTOCOL TITLE: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 14-4847H
APPROVAL PERIOD: Approval Date: July 22, 2015 Expiration Date: March 05, 2016

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Developing an online training for EFNEP's paraprofessionals using the Eating Smart # Being Active supplemental lessons.. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

Important Reminder: If you will consent your participants with a signed consent document, it is your responsibility to use the consent form that has been finalized and uploaded into the consent section of eProtocol by the IRB coordinators. Failure to use the finalized consent form available to you in eProtocol is a reportable protocol violation.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu
Evelyn Swiss, Senior IRB Coordinator - (970) 491-1381; Evelyn.Swiss@Colostate.edu
Tammy Felton-Noyle, Assistant IRB Coordinator - (970) 491-1655; Tammy.Felton-Noyle@Colostate.edu



Swiss, Evelyn

Amendment is approved to use the approved recruitment and consent cover letter to recruit and consent 60 professionals to take a survey following the training, and 5 of the 60 supervisor/coordinators will also be randomly selected to participate in a phone interview. Amendment includes approval the use of the Reaction survey questions and Interview questions, No change in risk.

Approval Period: July 22, 2015 through March 05, 2016
Review Type: EXPEDITED
IRB Number: 00000202

APPENDIX L

RECRUITMENT MATERIALS FOR THE EVALUATION OF THE ONLINE TRAINING:

1. Recruitment e-mail-supervisors
2. Follow-up recruitment e-mail-educators
3. E-mail cover letter

1. RECRUITMENT E-MAIL-SUPERVISORS

We have an amazing self-paced online training on the “*Eating Smart and Being Active During Pregnancy*” lesson. The online training was designed for paraprofessional nutrition educators and it will be available this summer. The distance training will be a pilot for all the ESBA lessons. This online training is the dissertation project of one of my PhD students, her name is Micheline Chlipalski.

Because the primary goal of this training is to prepare paraprofessional nutrition educators to teach the “*Eating Smart and Being Active During Pregnancy*” lesson, they should have the lesson plan with them to follow along while accessing the content in the training. If your educators already have the “*Eating Smart and Being Active During Pregnancy*” supplemental lesson please skip to “A.” If you need to place an order to purchase a lesson (\$9.00 dollars per lesson), please do so using the following website: <http://www.ext.colostate.edu/esba/>. We encourage you to place your order as early as possible, so that your educators don't miss this online training.

Enrolling on this online training is free of cost for those participating in this research project. Space to participate in this training is limited. So, please, let us know the name, last name, and e-mail of the educators that would like to participate.

A) Making sure that your educators can receive this online training is very simple. Just, **please reply to this e-mail as early as possible with a list of the first and last name of each educator and their e-mail addresses.** Coordinators/supervisors who want to have educators participating in this study will need to reply by the end of this week.

Upon your response, you will receive a short follow-up e-mail which will have a link that educators will access to enroll in the training and a cover letter attached explaining their participation in the study. You only need to forward that e-mail to your educators. The list of names and e-mail address you will provide to us will be used to track who has enrolled and who has not enroll, so we can give you updates about this situation before the enrolment period ends.

The enrollment period closes (add exact day, time, and time zone)

It is important for a good evaluation of the success of this training to have two different sections. Each section will receive the exact same training. The difference is described below:

Section	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
A	Complete evaluation	Access content	Access content	Complete evaluation	No access to content	No access to content	N/A
B	Complete evaluation	No access to content	No access to content	Complete evaluation	Access content	Access content	Complete evaluation

We will use a purposeful randomization in an attempt to assign groups of similar sizes to each section. Educators from the same universities will be assigned to the same section.

At the end of the training all supervisors will receive an e-mail indicating the names of the educators that completed the online training and their passing rates. Each educator that completes the training will receive a certificate of completion via e-mail. The passing rate is 70% of the total score.

If you would like to see the objectives of this online training to get an idea of how comprehensive it is, please see the document attached. Attached, you will also find the cover letter that we will provide to educators in the follow-up e-mail.

We look forward to hearing from you and to having your educators enrolled in this training.

Sincerely,

Susan Baker.

2. FOLLOW-UP RECRUITMENT E-MAIL-EDUCATORS

Dear coordinator/supervisor,

Please, forward this e-mail to your educators. It includes the link for them to enroll in the online training. Attached they'll find the cover letter that explains their participation in the study and a PDF that is a step by step guide on how to enroll.

Dear educator,

Thank you for your interest in taking our online training for the “Eating Smart and Being Active During Pregnancy” lesson. Attached you will find a cover letter explaining the details of this research project. By you enrolling in our training you are consenting to participate in our research project. If you decide to participate on the study, you may withdraw your consent and stop participation at any time without penalty. Enrolling in this online training is very simple, just click the link below, follow the steps indicated in the attached PDF and you will be ready to start. The information gathered during the registration process is a requirement from Colorado State University, but the research team will not have access to that information. We only have access to your name, last name, and e-mail so we can communicate with you. After signing in for the first time, please watch the navigation video and respond a short demographic survey. We'll send you a reminder e-mail every time new content is available in the online training.

We look forward to having you in this wonderful training. If you have any questions, please contact the online training developer:
Micheline Chlipalski, Co-principal Investigator and PhD student.
micheline.chlipalski@colostate.edu

Click here to enroll: (add URL once available)

Please keep in mind that the online training has videos, so you would need to use headphones or the speakers on your computer.

Thank you so much,

Micheline Chlipalski

3. E-MAIL COVER LETTER



Expanded Food and Nutrition Education Program
Supplemental Nutrition Assistance Program - Education
Department of Food Science and Human Nutrition
1571 Campus Delivery
Fort Collins, Colorado 80523-1571
970-491-2555
FAX: 970-491-8729

Date

Dear Participant,

My name is Micheline Chlipalski and I am a researcher from Colorado State University in the Food Science and Human Nutrition department. We are conducting a research study on the development and evaluation of an online training for EFNEP paraprofessional nutrition educators. The title of our project is *“Developing an online training for EFNEP’s paraprofessionals using the Eating Smart • Being Active supplemental lessons.”* The Principal Investigator is Dr. Susan Baker from the Department of Food Science and Human Nutrition and I’m a Co-Principal investigator.

We would like you to complete our online training on the *“Eating Smart and Being Active During Pregnancy”* Lesson. Your participation will require the following: enrollment in the online training, completion of a demographic survey, completion of an initial evaluation, going over all the content in the online training, and the completion of a post training evaluation. An estimated time to complete all the sections in the online training is 4 hours.

You will have plenty of time to finish all the components of this online training. You will have one week to go over the initial evaluation, two weeks to go over all the content in the training, and another week to complete the final evaluations. You would be able to take the online training at your own pace during the two weeks the content is available. Educators that score at least 70% of the total points will pass the training and receive a certificate of completion.

To improve the quality of this research project, we will have two different sections. Each state or university will be randomly assigned to one of the two sections:

Section	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
A	Complete evaluation	Access content	Access content	Complete evaluation	No access to content	No access to content	N/A
B	Complete evaluation	No access to content	No access to content	Complete evaluation	Access content	Access content	Complete evaluation

Your participation in this research is voluntary. If you decide to participate on the study, you may withdraw your consent and stop participation at any time without penalty. By you enrolling in the online training we would know that you have consented to participate in this study. We will keep private all research records that identify you, to the extent allowed by law.

For this study, we will assign a username to your data so that the only places your name will appear in our records are within your user account as a trainee and our data spreadsheet, which links you to your code. Only the research team will have access to the link between you, your code, and your data. Your supervisor will receive a short e-mail that would let her know if you have passed or not the online training.

The only exceptions to this are if we are asked to share the research files for audit purposes with the CSU Institutional Review Board ethics committee, if necessary. One benefit of participating in this study is that you will receive the training you need to be able to teach the “*Eating Smart and Being Active During Pregnancy*” lesson. In addition, the information obtained from this study may improve future online trainings for paraprofessional nutrition educators. There are no known risks associated with taking part in this online training. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you would like to participate or have any questions, please contact Micheline Chlipalski at micheline.chlipalski@colostate.edu or Dr. Susan Baker at susan.baker@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Sincerely,

Micheline Chlipalski

PhD Student and Co-Principal Investigator
Food Science and Human Nutrition
Micheline.chlipalski@colostate.edu

Susan Baker EdD

Associate Professor and Principal Investigator
Food Science and Human Nutrition
Susan.Baker@colostate.edu

APPENDIX M

EVALUATION TOOLS:

1. Demographic survey
2. Knowledge test
3. Scenario evaluation
4. Self-efficacy survey
5. Opinion survey-paraprofessionals
6. Opinion survey-supervisors
7. Practice questions

1. DEMOGRAPHIC SURVEY

Note: This survey was available to paraprofessionals online

Q.1 What is your first name?

Q.2 What is your last name?

Q.3 What is the name of the university you work for?

Drop down menu with universities' names

Q.4 What is your age?

18-23

24-29

30-35

36-41

42-47

48-53

54-59

60 or more

Q.5 What is your primary language?

English

Spanish

Other (Please specify below) _____

Q.6 Have you ever been pregnant?

Yes

No

Q.7 Check all that you identify with: (Mark all that apply)

American Indian and Alaska Native

Asian

Black or African American

Native Hawaiian or Other Pacific Islander

White

Other (Please specify below) _____

Q.8 Check the one you relate to:

Spanish/Hispanic/Latino

Not Spanish/Hispanic/Latino

Q.9 Please check your highest level of education

- High school diploma or GED
- Some college
- Associate's degree (2 years)
- Bachelor's degree (4 years degree)
- Other (Please specify below) _____

Q.10 What is the name of the program you work for?

- EFNEP
- SNAP-Ed
- Both EFNEP & SNAP-Ed
- Other (Please specify below) _____

Q.11 How long have you been an extension nutrition educator?

- Less than 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- 11-20 years
- 21 years or more

Q.12 How many times have you taught the Eating Smart and Being Active During Pregnancy lesson to pregnant participants?

- 0 times
- 1-3 times
- 4-6 times
- 7-9 times
- 10 or more times

If question 12 was answered "0 times" question 13 was presented

Q.13 Do you have a copy of the Eating Smart and Being Active During Pregnancy lesson plan?

- Yes
- No

Q.14 Have you taught ANY other Eating Smart • Being Active lessons?

- Yes
- No

Q.15 Before you signed up for this online training, how much training had you received about the Eating Smart and Being Active During Pregnancy lesson? (The "For Your Information" is the section at the end of the lesson plan that you shouldn't distribute to participants)

- I have not been trained on this lesson before
- I was trained only on how to teach the lesson
- I was trained only on the "For Your Information" section
- I was trained on how to teach the lesson AND the "For Your Information" section

Q.16 I have taken online training or online classes before?

- Yes
- No

Q.17 Check the answer that best describes the type of training that you prefer:

- I prefer online trainings only, without any in-person training
- I prefer in-person trainings only, without any online training
- I prefer having a combination of online trainings AND in-person trainings
- Other (Please specify below) _____

Q.18 I feel comfortable with the idea of taking an online training?

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

2. KNOWLEDGE TEST

Note: This assessment was available to paraprofessionals online

Directions: Please, do NOT refer to the lesson plan or any other resources to answer the quiz. The score you get in this "pre-quiz" does not affect your final grade. It is just a reference for us to know how much you knew before taking this online training.

Read each question and all its answers carefully before answering.

1) If your participant tells you that she is in the 14th week of her pregnancy, which trimester is she in?

- a) First Trimester
- b) Second Trimester
- c) Third Trimester
- d) I'm not sure

2) If today is April 4th and the due date of your participant is Nov 24th, which trimester is she in?

- a) First Trimester
- b) Second Trimester
- c) Third Trimester
- d) I'm not sure

3) If a pregnant participant that you just enrolled is in the 12th week of her pregnancy, what SUPPLEMENTAL lesson should you offer her FIRST?

- a) Feeding Your Baby Solid Foods
- b) Eating Smart and Being Active During Pregnancy
- c) Feeding Your New Baby
- d) I'm not sure

4) If a pregnant participant that you just enrolled is in the 7th month of her pregnancy, what SUPPLEMENTAL lesson should you offer her FIRST?

- a) Feeding Your Baby Solid Foods
- b) Eating Smart and Being Active During Pregnancy
- c) Feeding Your New Baby
- d) I'm not sure

5) Which of the following actions are OUTSIDE the *scope of practice* of a paraprofessional nutrition educator? (Pick ALL that apply)

- Referring participants to WIC
- Giving information that is not in the lesson plan
- Providing advice on gestational diabetes
- Providing advice on high blood pressure
- Helping pregnant participants plan a diet to lose weight
- Telling pregnant participants to heat up deli meats
- Giving advice on medication for nausea
- Telling participants what vitamins to take
- Telling participants not to drink unpasteurized milk

6) Pick the answer that best describes what you could tell participants if they say that their families tell them that now that they are pregnant “they need to eat TWICE as much food as before they were pregnant.”

- a) You can eat as much as you want if you were normal weight before getting pregnant.
- b) Your family is right, because there is another person growing inside of you.
- c) Research shows that you don’t need any extra calories in the first 3 months (1st trimester) of pregnancy.
- d) Do not worry about how much you eat. You will lose all that weight after you deliver your baby.
- e) I’m not sure what to tell to these participants.

7) Pick the answer that BEST describes what you could tell a pregnant teen who thinks prenatal vitamins meet all her nutritional needs. So, she thinks that she does not need to eat that many Calories.

- a) You are right, if you take your prenatal vitamins you do not need to eat more Calories during pregnancy.
- b) Prenatal vitamins do not contain extra Calories, but you still need Calories and other nutrients to nourish yourself and your baby.
- c) Prenatal vitamins should only replace your fruits and vegetables.
- d) I’m not sure what to say to this teen participant.

8) Pick the answer that BEST describes what you could tell a participant that says that she does not believe that smoking can harm her baby.

- a) If you smoke you are not a good mother because you do not care about your baby’s health.
- b) This lesson says that smoking is not safe, but I smoked during my first pregnancy and nothing happened to my baby.
- c) Smoking reduces the amount of oxygen that your baby gets, so she might have a hard time growing.
- d) If you just smoke one cigarette a day your baby will be fine.
- e) I’m not sure what to tell to this participant.

9) Pick the answer that BEST describes what you could tell participants that say that they do not believe that drinking alcohol can harm their babies.

- a) Drinking a little during pregnancy is safe.
- b) Alcohol during pregnancy could affect your child's health, behavior, and brain.
- c) Good mothers do not drink during pregnancy.
- d) Just stop drinking, it is easy, you do not need extra help.
- e) I'm not sure what to tell to these participants.

10) Pick all the answers that have information that you could tell pregnant participants that ask about craving non-food items.

- Craving non-food items is called pica
- This does not mean that you are deficient in a nutrient
- This means that you are deficient in iron
- Talk to your healthcare provider
- This can be harmful for you and your baby
- We do not know what causes these cravings
- Nothing can happen if you eat those non-food items

3. SCENARIO EVALUATION

Note: This assessment was available to paraprofessionals online. They had to watch a short video where a paraprofessional taught sections of the *Eating Smart and Being Active During Pregnancy* lesson to a small group of pregnant women. The paraprofessional showed some proper and inappropriate teaching practices.

Directions: While watching the videos pay attention to the WRONG things that you see.

Scenario 1

What did you see in the video that was WRONG? (Check the boxes to select ALL that apply)

- Educator asked participants if they were smoking
- Educator told participants to ask their mothers for advice
- Educator said that doctors are not the only type of health care providers
- Educator singled out one participant putting her on the spot
- Educator said that smoking is not good during pregnancy

Scenario 2

What did you see in the video that was WRONG? (Check the boxes to select ALL that apply)

- Educator asked about participants' weight
- Educator said that darker fruits and vegetables are higher in nutrients
- Educator did not interact with the display board while teaching the lesson
- Educator said that taking prenatal vitamins has the same benefits as eating fruit
- Educator assumed that participants knew the food groups
- Educator told participants how many extra calories to eat
- Educator told one participant the weight she should gain
- Educator said that what a pregnant woman eats affects her baby

Scenario 3

What did you see in the video that was WRONG? (Check the boxes to select ALL that apply)

- Participants said that they didn't like the activity
- Educator did not interact with the display board during the activity
- Participants didn't choose healthy foods
- Participants worked individually
- Educator did not ask who wanted to share their answers

Scenario 4

What did you see in the video that was WRONG? (Check the boxes to select ALL that apply)

- Finishing the physical activity without cooling down
- Reading the physical activity instructions in front of participants
- Touching her ears during the shoulder shrugs
- Resting between sets of shoulder shrugs
- Starting the warm up trying to touch the floor

Scenario 5

What did you see in the video that was WRONG? (Check the boxes to select ALL that apply)

- Educator did not wash her hands
- The health benefits of the recipe were not explained
- Educator forgot to bring food
- Participants received the wrong recipe

4. SELF-EFFICACY SURVEY

Note: This survey was available to paraprofessionals online

How much do you agree with the following statements?

1) I feel confident about my ability to teach the *Eating Smart and Being Active During Pregnancy* lesson

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

2) I know I can correctly do all the activities in the *Eating Smart and Being Active During Pregnancy* lesson

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

3) I know I can correctly explain all the content in the *Eating Smart and Being Active During Pregnancy* lesson to my participants

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

4) I'm not nervous about teaching the *Eating Smart and Being Active During Pregnancy* lesson

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

5) I feel confident about how to use the “For Your Information” section in the *Eating Smart and Being Active During Pregnancy* lesson.

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

6) I think it is really important to teach the *Eating Smart and Being Active during Pregnancy* lesson the way it is written

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

7) My participants will learn better if I follow the *Eating Smart and Being Active during Pregnancy* lesson plan as it is written

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

8) I know what to do if I’m not sure about the answer to a participant’s question

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

9) I feel confident in my ability to explain some common misconceptions related to nutrition during pregnancy if the information is in the “For Your Information” section in the lesson plan.

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

10) I feel confident in my ability to recruit participants that need the “*Eating Smart Being Active During Pregnancy*” lesson

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

11) I feel confident about my ability to decide when, during the lesson series, I should teach the “*Eating Smart and Being Active During Pregnancy*” lesson based on where a participant is in her pregnancy

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

5. OPINION SURVEY-PARAPROFESSIONALS

Note: This survey was available to paraprofessionals online

We want to improve our online trainings in the future. Please, let us know what you think, we would like your honest opinions. There are no right or wrong answers.

1) This online training helped me understand how to teach the *Eating Smart and Being Active During Pregnancy* lesson:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

2) This online training was easy for me to do:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

3) The “*For Your Information Section*” in the online training will help me answer participants’ questions:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

4) I would recommend this training to other extension nutrition educators like me:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

5) I feel better prepared to teach the *Eating Smart and Being Active during Pregnancy* lesson after this training:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

6) Now I feel more confident taking online trainings compared to before I took this training:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

7) I would like to have more online trainings like this one in the future:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

8) After this training I do not feel as nervous about taking online trainings:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

9) Online trainings should be available anytime I need it to review a lesson

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

10) Check THE one answer that best describes what you think:

- I prefer online trainings only, without any in-person training
- I prefer in-person trainings only, without any online training
- I prefer having a combination of online trainings AND in-person trainings

11) There is nothing I would change about this online training:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

12) To improve this online training, I would

13) Any additional comments

6. OPINION SURVEY-SUPERVISORS

Note: This survey was available to paraprofessionals online

We want to improve our online trainings in the future. Please, let us know what you think, we would like your honest opinions. There are no right or wrong answers.

1) This online training helped my educators understand how to teach the *Eating Smart and Being Active During Pregnancy* lesson:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

2) The online training instructions and prompts were easy for my educators to follow:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

3) The “*For Your Information Section*” in the online training will help my educators answer participants’ questions:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

4) I would recommend this training to other extension paraprofessional nutrition educators:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

5) My educators feel better prepared to teach the *Eating Smart and Being Active during Pregnancy* lesson after this training:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

6) My educators now feel more confident taking online trainings compared to before they took this training:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

7) I would encourage my educators to take more online trainings like this one in the future:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

8) After an educator completes an online training, that online training should be available to the educators to review the lesson when needed:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

9) Check THE one answer that best describes what you think:

- My educators prefer online trainings only, without any in-person training
- My educators prefer in-person trainings only, without any online training
- My educators prefer having a combination of online trainings AND in-person trainings

10) There is nothing I would change about this online training:

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

11) To improve this online training, I would

12) Any additional comments

7. PRACTICE QUESTIONS

Note: The following question were presented to paraprofessional throughout the online training.

The following questions are for you to practice. The scores in these questions do NOT count as part of your final grade. So, you can answer these questions as many times as you want.

Note: Questions added in the online training section: “Lesson Participants: Who & When”

1) If today is July 25th and the due date of your participant is Sept 3rd, which trimester is she in now?

- a) First Trimester
- b) Second Trimester
- c) Third Trimester
- d) I'm not sure

2) If your participant tells you that she is in the 22nd week of her pregnancy, which trimester is she in?

- a) First Trimester
- b) Second Trimester
- c) Third Trimester
- d) I'm not sure

3) If your participant tells you that she is in her 5th month of her pregnancy, which trimester is she?

- a) First Trimester
- b) Second Trimester
- c) Third Trimester
- d) I'm not sure

4) If a pregnant participant that you just enrolled is in the 3rd trimester of her pregnancy, what SUPPLEMENTAL lesson should you offer her FIRST

- a) Feeding Your Baby Solid Foods
- b) Eating Smart and Being Active During Pregnancy
- c) Feeding Your New Baby
- d) I'm not sure

5) If a pregnant participant that you just enrolled is in the 20th week of her pregnancy, what SUPPLEMENTAL lesson should you offer her FIRST?

- a) Feeding Your Baby Solid Foods
- b) Eating Smart and Being Active During Pregnancy
- c) Feeding Your New Baby
- d) I'm not sure

6) If a pregnant participant that you just enrolled is in the 6th month of her pregnancy, what SUPPLEMENTAL lesson should you offer her FIRST?

- a) Feeding Your Baby Solid Foods
- b) Eating Smart and Being Active During Pregnancy
- c) Feeding Your New Baby
- d) I'm not sure

Note: Questions added in the online training throughout the section: “Preparing to Teach the Lesson”

7) When a participant arrives in the classroom, what are things that create a welcoming environment? (Pick ALL that apply)

- Not allowing children in class
- Greeting people as they arrive
- Educator is in the room when participants arrive
- Having all material ready
- Having music playing as people arrive
- Having nice products to sell
- Arriving after participants

8) Based on the lesson plan, pick the organizations that can help you find information about safety of fish in your local water (Pick ALL that apply):

- Marine Conservation Organization
- American Fisheries Society
- Federal Environmental Protection Agency
- Local Department of Public Health

9) Based on the online training, what is the BEST way to prepare your materials to teach the *Eating Smart and Being Active During Pregnancy* lesson?

- a) Ask my supervisor
- b) Ask a more experienced educator
- c) Use the “handout” and “worksheet” for this lesson
- d) Use the “Before the Lesson” section in the lesson plan
- e) Memorize all the materials

Note: Questions added in the online training section: “How to Teach This Lesson (This was the section showing the role play of a paraprofessional teaching the *Eating Smart and Being Active During Pregnancy* lesson to a small group of pregnant participants”)

10) What information was shared in the section “*Importance of Prenatal Care*”? (Pick ALL that apply)

- Second hand smoking is not a problem during pregnancy
- Some medicines taken before pregnancy may not be recommended during pregnancy
- Healthcare providers can talk about healthy eating

11) What material(s) are needed to teach the activity: “*Plan a Healthy Pregnancy Plate,*” as described in the lesson plan? (Pick ALL that apply)

- Plates
- Worksheet
- Pictures of food
- Handout

12) What material(s) are needed to teach the activity: “*My favorite foods,*” as described in the lesson plan? (Pick ALL that apply)

- Food models
- Display board
- Worksheet
- Pictures of prepared meals

13) What information was shared in the section “*Healthy Eating During Pregnancy*”? (Pick ALL that apply)

- Eat more Calories in the first trimester of pregnancy
- Fruit provides many vitamins, minerals, and water
- Double the amount of Calories in the third trimester
- Folic acid can come from fortified bread

14) What material(s) are needed to teach the activity: “*Let’s Taste It,*” as described in the lesson plan? (Pick ALL that apply)

- Food for recipes
- Handout
- Worksheet
- Recipe
- Food preparation materials

15) What material(s) are needed to teach the activity: “Easing Discomfort During Pregnancy,” as described in the lesson plan? (Pick ALL that apply)

- Worksheet
- White board
- Display board
- Pens

16) What material(s) are needed to teach the activity: “Food Safety During Pregnancy,” as described in the lesson plan? (Pick ALL that apply)

- Food models
- Pens
- Worksheet
- Hand sanitizer

17) What information was shared in the section “Food Safety”? (Pick ALL that apply)

- Unpasteurized milk is ok to drink during pregnancy
- Pregnant women can eat up to 12 ounces of tilefish each week
- Canned light tuna is low in mercury
- Pregnancy weakens a woman’s immune system

Note: Questions added throughout the online training section: “For Your Information”

18) Based on what you have learned from this training, what concept does the following definition describe:

“Things that people believe are true but that in fact are not”

- a) Correction
- b) Scope of practice
- c) Misconception
- d) Understanding
- e) Dreams

19) Based on what you have learned from this training, what concept does the following definition describe:

“The procedures, actions, responsibilities, and limitations of the job”

- a) Understanding
- b) Correction
- c) Misconception
- d) Scope of practice
- e) Reporting

20) Prenatal care is important because?

- a) A healthcare provider can track the mother and child to make sure that they are both healthy and developing appropriately.
- b) Mothers need a lot of attention during this time, and this makes it easier on the father and other family members.
- c) It is not important – it is just something that the educator wants us to do so that doctors can make more money

21) Gaining too little weight during pregnancy can lead to the following problem

- a) Increased risk of poor development of the baby (low birth weight)
- b) Increased risk of C-section
- c) High blood pressure
- d) No problem

22) Anemia is when our blood does not have enough iron in it to carry enough oxygen to keep us healthy. This can cause the mother to feel tired and also may make it more difficult for the baby to grow appropriately. (Pick ALL that apply)

- Taking iron supplements (talk to your doctor first)
- Eating beef, pork, lamb
- Eating fruits
- Drinking milk
- Eating beans
- Eating iron-fortified cereals
- Drinking sodas

23) Pregnancy induced high blood pressure causes the following problems for the child.

- a) High birth weight
- b) Type I diabetes
- c) Insufficient blood to develop properly
- d) Pre-term delivery
- e) Lower birth weight

24) Gestational diabetes is diabetes that occurs only when pregnant. It causes the mother to:

- a) Be less able to regulate blood sugar levels
- b) Crave soda
- c) Eat rocks
- d) Become moody

25) Folic acid decreases the risk of the baby having anencephaly (the baby's back of the head and neck are not covered with skin/bone – so the brain and spinal cord are open to the air). (Pick ALL that apply)

- Folic acid supplements
- Citrus fruits
- Chicken
- Beans
- Leafy green vegetables
- Jalapenos
- Liver
- Folic acid/folate fortified foods (read the ingredients list)

26) As an “at risk” population, circle the items below that pregnant women should be especially aware of: (Pick ALL that apply)

- Mercury in fish
- Unpasteurized foods/drinks
- Raw or undercooked meats, especially deli meats/hot dogs
- Cat litter
- Candy
- Spicy foods

Note: Questions added in the online training section: “Tips for teaching”

27) What should an educator do when she does not know the answer to a participant's question, and the answer is NOT in the “For Your Information” section? (pick ALL that apply)

- Say that she will find out the answer
- Say that she does not know the answer
- Write down the question
- Ask other participants for an answer
- Ask her supervisor for the answer
- Bring answer to next class and share it

28) If this is the last class with a participant and she asks a question during class, but the answer is NOT in the lesson plan or in the “For Your Information” section, what should the educator do?

- a) Nothing because it is the last class
- b) Tell the participant to read a book
- c) Find the answer and call the participant
- d) Tell the participant to use the internet

29) When an educator does not know the answer to a question during class, but the participant really needs the answer soon, what is THE BEST thing the educator can do AFTER getting the information from her supervisor?

- a) Wait until the next class to give the answer
- b) Ask another participant for the answer
- c) Tell the participant to ask her family
- d) Call the participant with the answer

APPENDIX N

SCREENSHOTS ONLINE TRAINING PRESENTATION:

1. Home page
2. Modules

1. HOME PAGE

Colorado State University

Micheline Chipalski | Inbox | Settings | Logout | Help | CSU Quick Links

canvas | Courses | Grades | Calendar | Commons

2015SM-NCT-HSCT-3015-201

2015SM-NCT-HSCT-3015-201: Eating Smart and Being Active (ESBA) During P... [Edit] [Settings]

HSCT 3015
EATING SMART AND BEING ACTIVE DURING PREGNANCY

Eating Smart • Being Active

Colorado State University Extension

Start Here

Import from Commons

Choose Home Page

View Course Stream

Course Setup Checklist

New Announcement

View Course Analytics

Coming Up [View Calendar]

Nothing for the next week

Feedback | User Research | Disclaimer | Copyright | Equal Opportunity | Privacy Policy | Search CSU

2. MODULES

The screenshot displays the Canvas LMS interface for a course. The top navigation bar includes the Colorado State University logo, the Canvas logo, and navigation links for Courses, Grades, Calendar, and Commons. The user's name, 'Micheline Chlipalski', and other utility links like 'Inbox', 'Settings', 'Logout', 'Help', and 'CSU Quick Links' are also visible. The course ID is '2015SM-NCT-HSCT-3015-201' and the page title is 'Modules'. A sidebar on the left lists various course tools such as Home, Modules, Announcements, Assignments, Discussions, Grades, People, Files, Pages, Syllabus, Outcomes, Quizzes, Conferences, Collaborations, and Settings. The main content area shows three sections of modules:

- Before You Start**: Contains four items: 'a) How to Navigate', 'b) Meet Your Instructor: Micheline Chlipalski', 'c) Demographic Survey', and 'Did you answer the demographic survey?'. Each item has a 'View' or 'Submit' button and a green checkmark indicating completion.
- Step 1: Initial Quiz and Survey**: Contains two items: '1.1 Pre-Quiz' and '1.2 Pre-Survey'. The '1.1 Pre-Quiz' item shows a date of 'Jul 17', '24 pts', and a 'Submit' button.
- Step 2: Welcome**: This section is partially visible at the bottom.

Each section has a 'Complete All Items' button and a settings icon. The 'Did you answer the demographic survey?' item is marked as 'Submitted' on 'Jul 17'.

Step 2: Welcome		Complete All Items	+	⚙️
2.2 Welcome to Eating Smart and Being Active During	View	✔️	⚙️	⌵
2.3 Learning Objectives	View	✔️	⚙️	⌵
2.4 Why This Lesson is Important	View	✔️	⚙️	⌵

Step 3: Lesson Participants: Who & When		Prerequisites: Step 2: Welcome	Complete All Items	+	⚙️
3.1 Determining Lesson Participants	View	✔️	⚙️	⌵	
3.1 Let's Practice	6 pts	Submit	✔️	⚙️	⌵
3.2 Timing of the Lesson within the Series	View	✔️	⚙️	⌵	
3.3 Approaching a Participant You Think is Pregnant	View	✔️	⚙️	⌵	

Step 4: Preparing to Teach the Lesson		Prerequisites: Step 3: Lesson Participants: Who & When	Complete All Items	+	⚙️
4.1 Understanding the Lesson Plan	View	✔️	⚙️	⌵	
4.2 Preparing a Welcoming Teaching Environment	View	✔️	⚙️	⌵	
4.2 Let's Practice	8 pts	Submit	✔️	⚙️	⌵

☰ Step 4: Preparing to Teach the Lesson Prerequisites: Step 3: Lesson Participants: Who & When [Complete All Items](#) + ⚙

☰ 4.1 Understanding the Lesson Plan		View	✓ ⚙
☰ 4.2 Preparing a Welcoming Teaching Environment		View	✓ ⚙
☰ 4.2 Let's Practice	8 pts	Submit	✓ ⚙
☰ 4.3 Getting Ready to Teach the Lesson		View	✓ ⚙
☰ 4.3 Let's Practice	5 pts	Submit	✓ ⚙

☰ Step 5: How to Teach This Lesson Prerequisites: Step 4: Preparing to Teach the Lesson [Complete All Items](#) + ⚙




☰ 5.1 Welcome (Anchor)		View	✓ ⚙
☰ 5.2 Importance of Prenatal Care (Add)		View	✓ ⚙
☰ 5.2 Let's Practice	1 pts	Submit	✓ ⚙
☰ 5.3 Healthy Eating During Pregnancy (Add)		View	✓ ⚙
☰ 5.4 Activity: My Favorite Foods (Apply)		View	✓ ⚙
☰ 5.5 Activity: Plan a Healthy Pregnancy Plate (Apply)		View	✓ ⚙
☰ 5.5 Let's Practice	12 pts	Submit	✓ ⚙









Step 5: How to Teach This Lesson		Prerequisites: Step 4: Preparing to Teach the Lesson	Complete All Items	+	⚙
5.1 Welcome (Anchor)		View	✓	⚙	▼
5.2 Importance of Prenatal Care (Add)		View	✓	⚙	▼
5.2 Let's Practice	1 pts	Submit	✓	⚙	▼
5.3 Healthy Eating During Pregnancy (Add)		View	✓	⚙	▼
5.4 Activity: My Favorite Foods (Apply)		View	✓	⚙	▼
5.5 Activity: Plan a Healthy Pregnancy Plate (Apply)		View	✓	⚙	▼
5.5 Let's Practice	12 pts	Submit	✓	⚙	▼
5.6 Physical Activity During Pregnancy (Add)		View	✓	⚙	▼
5.7 Being Active		View	✓	⚙	▼
5.8 Let's Taste It! (Apply)		View	✓	⚙	▼
5.8 Let's Practice	5 pts	Submit	✓	⚙	▼
5.9 Easing Discomforts During Pregnancy (Add)		View	✓	⚙	▼
5.10 Activity: Easing Common Pregnancy Discomforts		View	✓	⚙	▼
5.10 Let's Practice	4 pts	Submit	✓	⚙	▼
5.11 Food Safety (Add)		View	✓	⚙	▼
5.12 Activity: Food Safety During Pregnancy (Apply)		View	✓	⚙	▼
5.12 Let's Practice	8 pts	Submit	✓	⚙	▼
5.13 Review		View	✓	⚙	▼
5.14 Away		View	✓	⚙	▼




☰ **Step 6: For Your Information (FYI)**
Prerequisites: Step 5: How to Teach This Lesson
Complete All Items
+
⚙️







☰	📄 6.1 Definitions: Misconceptions & Scope of Practice		View	✔️	⚙️
☰	🎯 6.1 Let's Practice	2 pts	Submit	✔️	⚙️
☰	📄 6.2 Introduction to FYI		View	✔️	⚙️
☰	📄 6.3 The Importance of Prenatal Care		View	✔️	⚙️
☰	🎯 6.3 Let's Practice	15 pts	Submit	✔️	⚙️
☰	📄 6.4 Healthy Eating During Pregnancy		View	✔️	⚙️
☰	🎯 6.4 Let's Practice	8 pts	Submit	✔️	⚙️
☰	📄 6.5 Physical Activity		View	✔️	⚙️
☰	📄 6.6 Easing Discomforts of Pregnancy		View	✔️	⚙️
☰	📄 6.7 Food Safety		View	✔️	⚙️
☰	🎯 6.7 Let's Practice	6 pts	Submit	✔️	⚙️

☰ **Step 7: Tips for Teaching**
Prerequisites: Step 6: For Your Information (FYI)
Complete All Items
+
⚙️

☰ **Step 7: Tips for Teaching**
Prerequisites: Step 6: For Your Information (FYI) [Complete All Items](#)   

☰ 7.1 Tips for Teaching			View	 
☰ 7.1 Let's Practice	8 pts		Submit	 
☰ 7.2 Conclusion			View	 
☰ 7.3 References				 

☰ **Step 8: Final quizzes and surveys**
[Complete All Items](#)   

☰ Post-Quiz	Aug 7	24 pts	Submit	 
☰ Scenario Quiz (Post)	Aug 7	27 pts	Submit	 
☰ Post-Survey	Aug 7		Submit	 
☰ Give Us Your Opinion	Aug 7		Submit	