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DETERMINING THE ACCEPABILITY OF MENUS AND RECIPES THAT MEET THE 2005 DIETARY GUIDELINES FOR AMERICANS BY LOW SOCIOECONOMIC STATUS INDIVIDUALS IN SOUTH LOUISIANA USING FOCUS GROUP DISCUSSIONS

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DETERMINING THE ACCEPABILITY OF MENUS AND RECIPES THAT MEET THE 2005 DIETARY GUIDELINES FOR AMERICANS BY LOW SOCIOECONOMIC STATUS INDIVIDUALS IN SOUTH LOUISIANA USING FOCUS GROUP DISCUSSIONS

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ABSTRACT

MyPyramid is an interactive website that translates the recommendations of the 2005 Dietary Guidelines for Americans (DGA) into an eating pattern that could be used by individuals. Food groups to encourage are fruit, vegetables, low-fat dairy, and whole grains because diets high in these foods promote health and have been linked to a decreased risk of developing chronic disease. However, a diet high in fruit, vegetables, low-fat dairy, and whole grains can be more expensive, less satiating, less convenient, and less available than one containing energy-dense foods. Therefore, low socioeconomic status (SES) individuals tend to consume diets high in energy-dense foods and low in fruit, vegetables, low-fat dairy and whole grains.

The purpose of this study was to determine the barriers to "healthy eating" and the acceptability of two-week menus that reflect the recommendations of the DGA and are low cost among low SES individuals in East Baton Rouge Parish, Louisiana. Four focus group discussions (FGD) were conducted with low SES individuals; the questions used in the FGD were based on the PRECEED/PROCEDE model and were used to determine the predisposing factors, enabling factors, and barriers of the participants to following menus that meet the DGA.

Of the participants (n=40), 58% were male; 65% were African American and 35% were European American. The mean age of the participants was 37.8 years ($\pm$ 13.7 [SD]). None of the participants knew the MyPyramid recommendations for each food group. The enabling factors to following the menus included health and availability. The barriers to following the menus included preference for energy dense foods, poor taste, food spoilage, cost, lack of knowledge of how to prepare the foods on the menus, and lack of refrigeration or a place to store and prepare food. The menu items that were acceptable were familiar to the participants.

However, the menus as a whole were unacceptable. The menus should be taste tested and modified to ensure acceptability while continuing to meet MyPyramid recommendations and remaining low cost. The menus should be given to nutrition educators to be used as tools for teaching low SES individuals how to consume a diet that meets the MyPyramid recommendations.

CHAPTER 1
INTRODUCTION

The purpose of this study was to determine through focus group discussions (FGD) what allowed or prohibited low socioeconomic status (SES) individuals in South Louisiana to meet the MyPyramid recommendations which are based on the nutrition recommendations of the 2005 Dietary Guidelines for Americans (DGA). It was also the purpose of this study to find the acceptability of low cost two-week menus that met the food recommendations of MyPyramid and that were low cost.

Justification

The DGA are science-based recommendations that promote health in individuals two years of age and older[1]. A diet rich in fruit, vegetables, low-fat dairy, and whole grains such as what the DGA recommends can reduce the risk of chronic diseases, including some cancers[2], type 2 diabetes (DM)[3], hypertension (HTN)[4], and cardiovascular disease (CVD)[2,5]. MyPyramid provides recommendations for an eating pattern that is based on the DGA[6]. The MyPyramid recommendations are appropriate for healthy individuals and are individualized based on age, sex, weight, height, and level of physical activity[6]. MyPyramid recommends that individuals consume diets high in fruit, vegetables, whole grains, and low-fat dairy and diets low in fat, saturated fatty acids, trans fats, cholesterol, salt, sugar, and alcohol[7].

Even though the DGA recommends a diet high in fruit, vegetables, whole grains, and low-fat dairy, these nutrient dense foods tend to be more expensive[8] and less satiating than energy dense foods that are high in refined grains, sugars, and fat[9]. Four principal reasons why low SES individuals do not consume adequate amounts of fruit, vegetables, low-fat dairy, and whole grains are taste, convenience, cost, and availability[8,10]. Taste and convenience were positively associated with fast food consumption and were barriers for changing eating habits to

include more fruit and vegetables[10]. Also, when considering the energy per cost that food provides, energy dense foods were cheaper than lean meats, fruit, and vegetables[5]. In addition, whole grains, fresh produce, and low fat meat were not always available in low SES neighborhood grocery stores[11,12]. Some reasons why the consumption of low-fat dairy were low in these individuals included actual or perceived lactose intolerance, dislike of the taste of dairy, and problems purchasing and storing milk[13].

Socioeconomic status is characterized by income, wealth, education, and occupation[14]. In Louisiana, 25.2% of adults are not high school graduates compared to the national average of 19.6%[15]. Also, the median household income is $35,216 in Louisiana as compared to the national median household income of $44,334[15]. Further, 27.2% of Louisiana residents had an annual household income less than $25,000 compared to 22.8% nationally[16]. In 2005, the poverty rate in Louisiana was 20.2%[17].

Low cost, nutrient dense menus that follow the food recommendations of the DGA were developed previously[18], and the current study was done to determine the acceptability of these menus in low SES individuals in South Louisiana. It is important to test the acceptability of these menus so that others may use this information to develop policy, as well as a community nutrition intervention program for this population.

Focus group discussions were an appropriate method of gathering information because the participants were representative members of the population. Focus group discussions were done to gain an adequate sample size, and trends were determined from the responses given at the FGD. The PRECEDE/PROCEED[19] model was an appropriate model for this study because it first assesses the predisposing factors, barriers to healthy behaviors, and reinforcing factors that allow individuals to begin or to continue healthy behaviors. The model provides a

framework from which to develop and evaluate the effectiveness of intervention programs for given populations[19]. The first part of the model, or the PRECEDE segment, can be used to determine the perceptions, quality of life, and the desire for health of a given population. The PROCEED segment of the model, which was not used in this study, can be used to establish health goals and intervention programs for a specific population according to the information found in the PRECEDE portion[19].

Objectives

Focus group discussions were used to:

1. Determine the predisposing factors to following menus that meet the DGA.
2. Determine the barriers and enabling factors to following menus that meet the DGA.
3. Determine the acceptability of menus that meet the DGA.

Assumptions

The assumptions that were made for this study were:

1. Focus group discussions were an acceptable method of gathering information.
2. Participants were truthful in their responses.
3. Participants' answers were not influenced by FGD moderators or peers.
4. Participants were representative of the target populations.

Limitations

The limitations of this study include:

1. The FGD moderator was of a different ethnicity and socioeconomic class than the participants which could have made the participants uncomfortable or could have led to the moderator misunderstanding the participants.
2. The participants may have said what they thought the moderator or their peers would want to hear instead of their actual opinion, attitude, or belief.

3. The small sample size may not have been representative of the entire target population.
4. The non-homogenous group of participants may have led to the increased variability of responses.

Definitions

1. 2005 Dietary Guidelines for Americans (DGA): science-based source of nutrition recommendations used by health professionals and policy makers to educate people ages two and older on what to consume for a healthy diet, weight maintenance for adults, physical activity, and food safety[1].
2. Low Socioeconomic Status (low SES): refers to an individual's limited means to purchase goods in a society and is influenced by income, wealth, education, and occupation[14].
3. Focus Group Discussions (FGD): group interviews led by a moderator who asks open-ended questions that are answered by the group. The responses given provide the data to be analyzed[20].

CHAPTER 2
REVIEW OF THE LITERATURE

Dietary Guidelines for Americans 2005/ MyPyramid

The DGA are science-based nutrition recommendations that promote the consumption of fruit, vegetables, whole grains, and low-fat dairy[1]. Diets meeting the DGA recommendations have been linked to decreased risks of developing cancer, type 2 diabetes mellitus (DM), hypertension (HTN), and cardiovascular disease (CVD)[5]. By law, the DGA are revised every five years by the United States Department of Health and Human Services (DHHS) and the United States Department of Agriculture (USDA). The Dietary Guidelines Advisory Committee evaluates the scientific evidence and makes recommendations for the development of the DGA to the DHHS and the USDA[1]. The key recommendations of the 2005 DGA were grouped into nine categories: adequate nutrients within calorie needs, weight management, physical activity, food groups to encourage, fats, carbohydrates, sodium and potassium, alcoholic beverages, and food safety. Even though the DGA recommends that adults consume less energy, increase physical activity, and make healthier food choices[1], Americans have continued to consume more energy than they are expending and are less physically active than recommended[21]. Studies using the Healthy Eating Index, which measures how closely an individual's diet meets the DGA, have suggested that individuals do not meet the intake recommendations of the DGA[22,23,24,25].

MyPyramid provides recommendations for eating patterns based on the DGA[6]. MyPyramid has an interactive website created to help individuals make healthy food choices and become physically active[6]. The recommendations given by MyPyramid are appropriate for healthy individuals over the age of two years, and the recommendations are individualized based on age, sex, weight, height, and level of physical activity[6]. MyPyramid recommends that

individuals consume a variety of foods from each food group and provides examples of foods to consume[7]. MyPyramid also recommends that individuals consume more fruit, vegetables, whole grains, and low-fat dairy and consume less saturated fatty acids, trans fats, cholesterol, added sugars, salt, and alcohol[7]. The MyPyramid website explains the health benefits of consuming foods in each food group, and gives information for consuming the appropriate amount of each food group[7].

Dietary Patterns of Low SES Individuals

Low SES individuals tend to consume diets high in fat, sugar, and refined grains because these foods are energy-dense and cost less than other foods[8]. However, diets high in fat[26] and sugar and refined grains[5] have been linked to an increased risk of developing cancer, HTN, CVD and type 2 DM. In addition to being high in fat, sugar, and refined grains, the diets of low SES individuals contain little dairy[27], fruit and vegetables, or whole grains[8].

Since the low-cost, energy-dense diets of low SES individuals tend to contain little low-fat dairy, their diets are subsequently low in calcium since dairy foods are the best food source of calcium[28]. Calcium is responsible for proper bone and teeth development and structure[13]; nerve conduction; skeletal, smooth, and cardiac muscle contraction[13]; working in conjunction with vitamin K in proper blood clotting[13]; and reducing the risk of developing HTN[4], obesity[13,29], heart disease[30], and colorectal cancer[30]. There are many reasons why low SES individuals do not consume adequate amounts of dairy[13]. These include problems purchasing and storing milk[13], the belief that milk is for children[13], actual or perceived lactose intolerance[13, 27], the substitution of milk with soft drinks[13,27], eating away from home where dairy is not available[13,27], lack of family support or encouragement of milk consumption[13,27], lack of knowledge of the relationship between calcium and health[27], and dislike of the taste of milk[27].

Diets of low SES individuals also tend to be low in fruit and vegetables and are subsequently low in antioxidants, such as vitamin C[31] and the carotenoids[32] including lycopene, β-carotene, α-carotene, lutein, zeaxanthin, and β-cryptoxanthin. Lower fruit and vegetable consumption results in lower consumption of phytochemicals, which are important in preventing cancer and cardiovascular disease[33]; folate, which prevents neural tube defects and reduces serum homocysteine thus potentially protecting against atherosclerosis[34]; magnesium, which is important in nerve and muscle function and bone mineralization[35]; and potassium, which works with magnesium and calcium to lower blood pressure[4]. Lower fruit and vegetable consumption also results in lower fiber consumption[31]. Fiber is important for its role in preventing constipation and possibly cancer[34] and can help reduce cholesterol by preventing bile re-absorption in the small intestine[36].

Americans, regardless of SES, only consumed 9.5% of grains as whole grains, as opposed to the DGA/MyPyramid recommendations that more than 50% of grains consumed should be whole grains[37]. Whole grains are another good source of dietary fiber[34], phytochemicals[33], folate[34], and magnesium[35]; not consuming enough whole grains further contributed to the lower amount of these nutrients in the diet. In addition, whole grains are a good source of the antioxidant selenium[38].

Health Risks Associated with Low SES

The prevalence of obesity was high among those with low education, low income, those who resided in lower income states, and those who resided in "deprived areas[8]." Possible causes of obesity among low SES individuals include a diet consisting of energy-dense foods[5,8,9,39], a lack of nutrition knowledge[31], an environment which may have higher crime rates and fewer areas available for safe physical activity[40,41], greater access to fast food restaurants[40,41], and low

SES neighborhood grocery stores may not stock much fruit, vegetables, low-fat dairy, whole grains, and low fat meat[11,12].

In addition, stress-induced metabolic changes among low SES individuals may promote the deposition of fat stores and result in obesity[42,43]. Psychological stress such as depression and anxiety due to having a lack of money could cause an increase in the levels of circulating cortisol, with a resultant increased abdominal fat deposition[43]. Abdominal fat receives more blood flow and contains more glucocorticoid receptors than peripheral fat which makes abdominal fat more sensitive to cortisol than peripheral fat[43]. The result is abdominal obesity and can lead to the metabolic syndrome characterized by increased blood pressure, hyperlipidemia, and glucose intolerance[40]. Obesity also increases an individual's risk of developing CVD, HTN, some types of cancer, and type 2 DM[42].

Type 2 DM occurred more often among ethnic minorities and low SES individuals than among other ethnic groups and higher SES individuals[9]. The risk for developing type 2 DM increased by 90% for adults who did not complete high school compared with those who did[44]. Having a blue collar occupation increased an individual's risk for developing type 2 DM by 42-55% compared with other individuals[44]. Biologic factors that contributed to the increased prevalence of type 2 DM among the low SES were overweight and obesity, increased abdominal fat, and decreased physical activity all of which were common in the low SES population[44]. Possible explanations for the higher prevalence of type 2 DM among the low SES included decreased income, access to health care, and nutrition knowledge[44].

Low SES was associated with an increased risk of developing CVD including atherosclerosis[45] and coronary heart disease (CHD) [46]. An association between low SES and the early development of atherosclerosis was shown[45] which resulted in a greater prevalence of risk

factors for CHD among low SES individuals, including greater systolic blood pressure, DM, low education status, and cigarette smoking[45].

Food Purchasing Patterns of Low SES Individuals

Low SES neighborhoods tend to have fewer grocery stores than neighborhoods of higher SES[11]. What stores are available in low SES neighborhoods tend to be small[47] and have less variety of fresh produce[11] or of low-fat meat and whole grains[12]. The foods that are most available, cost the least, and provide the most energy per serving are foods that are usually energy-dense yet nutrient poor[31]. Energy-dense, nutrient poor foods are usually high in refined grains and added sugars and fats[8]. Thus, oils, margarines, and sugar are cheaper than lean meats, fruit, and vegetables[5].

Among low SES individuals, cost, taste, and convenience were the three factors that most influenced food choices[9,10]. Convenience was positively related to fast food consumption[10]. Individuals who believed that fast food tasted better and that it was more convenient than fruit and vegetables ate more fast food. These individuals were concerned that taste quality would be reduced if fast foods were removed from their diet; they stated the possible reduction in taste quality was their biggest barrier to changing their diet to one that was lower in fat and energy[10]. Foods that contain added sugar and fat tend to be more palatable[9,39], more likely to be the foods that are craved[39], and provide more enjoyment than fruit and vegetables[39,48].

Because low SES individuals have less money to spend on food, they have different ways to economize[49]. Low SES individuals purchase a larger proportion of products that have been discounted, generic, or that are sold in larger volumes[49]. They also purchase less expensive food within a product category, such as generic foods, and will sacrifice quality and freshness of the foods in order to purchase more food at a lower cost[49].

Food Availability

For low SES individuals, food availability may be cyclical and is possibly due to the inability to stretch food stamps[50]. One common food practice is overeating when food is available and under eating when food is less available[42]. However, food restriction associated with low food availability may result in a preoccupation with food and eating[51]. If the overconsumption of food becomes a habit, the individuals may become overweight or obese[51].

Another common food practice among low SES individuals is eating old or spoiled food. Slime is washed off meat; mold is scraped from bread and cheese; and insects are removed from cereals and grains. This can lead to food-borne illness. Other food practices are that soups, juices, and milk are diluted so that there is a greater quantity available; however, fewer nutrients are consumed. Further, if food is scarce in a larger family, the head of the house may designate how much each person can consume each day or each week[50].

Market Baskets

Market baskets are recommendations of the types and amounts of foods to be purchased for consumption in the home, and they are used in the USDA's four food plans: the Thrifty Food Plan (TFP) [52] and the Low-Cost, Moderate-Cost, and Liberal-Cost Food Plans (LMLFP) [53]. The TFP is used to determine the maximum food stamp allotment, and it can be used to educate low SES consumers on what to purchase for a nutritious, minimal-cost diet[52]. The TFP has market baskets for individuals and for a reference family[52]. The TFP reference family is the same as the Food Stamp Program reference family and consists of one male and one female age 20-50, one child age six to eight, and one child age nine to eleven. The market baskets of the TFP are priced less than the market baskets of the LMLFP[53].

The market baskets of the LMLFP represent the percentiles of food spending, or how much disposable income can be spent on food. The Low-Cost Food Plan provides market baskets for the 25th-50th percentile of food spending. The Moderate-Cost Food Plan provides market baskets for the 50th-75th percentile of food spending. The Liberal-Cost Food Plan provides market baskets for the 75th-100th percentile of food spending[53].

The official market baskets of the USDA are those of the TFP and the LMLFP, and they are revised by the USDA's Center for Nutrition Policy and Promotion[52,53]. The market baskets of the TFP were last revised in 2006[52], and the market baskets of the LMLFP were last revised in 2007[53]. The reasons for the current revisions were to provide market baskets that met current nutrition recommendations and to adjust costs for inflation[52,53]. The market baskets are based on the 2005 DGA, the 2005 MyPyramid, results from the 2001-2002 National Health and Nutrition Examination Survey (NHANES), and the 2001-2002 Food Price Database[52,53]. These sources were used because they represent current nutrition guidelines or what people normally consume. Market baskets can be used to educate families on how to budget in order to improve their diet[52,53].

The market baskets of the TFP and the LMLFP are specific for 15 age-gender groups: children ages 1-3, 4-5, 6-8, and 9-11; females ages 12-13; males ages 12-13; females ages 14-18; males ages 14-18; females ages 19-50; males ages 19-50; females ages 51-70; males ages 51-70; females ages 71 and older; and males ages 71 and older[52,53]. These age-gender groups are different from earlier revisions of the market baskets and more closely resemble the age-gender groups of the Dietary Reference Intakes (DRIs) [52,53]. Individual market baskets can be combined to make household market baskets[52,53].

There are 29 market basket groups such as whole grain breads, rice, pasta, and pastries or all potato products which are used to comprise one-week market baskets specific for each age-gender group[52,53]. Compared to what is usually consumed by Americans, the market baskets of the TFP and the LMLFP contain more fruit, vegetables, and low-fat dairy and fewer fats, oils, and sweets[52,53]. The differences in the previous and the revised market baskets reflect the differences between the 1995 DGA and the 2005 DGA[52,53]. Compared to the previous market baskets[52,53], the revised market baskets contain fewer refined grains and meat and meat substitutes and more fruit and vegetables[1,54].

The market baskets were designed to provide 100% of the 1997-2005 recommended dietary allowances (RDA) or adequate intakes (AI) for vitamins A, C, B_6, and B_{12}, thiamin, riboflavin, niacin, folate, calcium, phosphorus, magnesium, iron, zinc, copper, and fiber[52,53]. The market baskets do not meet the RDA for vitamin E or the AI for potassium. Approximately 60% of the RDA for vitamin E and approximately 70% of the AI for potassium is provided by the market baskets[52,53]. In order to increase the amount of vitamin E in the market baskets, nuts would have to replace most of the meat or bean recommendations[52,53]; more oils including sunflower and safflower oil would have to be included[55]; and more unrefined grains still containing the germ would need to be consumed[55]. However these changes were not made because it was thought that individuals would find the market baskets too unappealing and thus would not use them[52,53].

The market baskets exceed the AI for sodium[52,53]. Since approximately 75% of the sodium consumed is provided by processed foods, the only way that the market baskets could meet but not exceed the AI for sodium would be if food companies added minimal salt to food during processing or if individuals made their food from scratch with little added salt[52,53].

One limitation of the market baskets is that they are based on recommendations for healthy individuals who have a low activity level[52,53]. Therefore the market baskets would not be appropriate for individuals who have a disease such as diabetes or whose jobs requires them to be very active such as construction workers[56]. The TFP market baskets may be too expensive for food stamp recipients since the TFP market baskets are based on the maximum amount of food stamp allotment and most recipients do not receive this amount. Further, the price of food varies depending upon where an individual lives[56]. In addition, even though NHANES data were used to create the market baskets, they still do not reflect what people normally consume since the market baskets were designed to meet current nutrition recommendations, and individuals are not meeting these recommendations[22,23,24,25].

Focus Group Discussions

Focus group discussions (FGD) are a method of qualitative research, and they are used to learn about topics that are not well studied. Focus group discussions are used to determine the beliefs held by certain populations as well as why the participants hold these beliefs, and they provide a range of opinions held within a population group[20].

When planning a FGD, the topic, moderator, and participants are chosen. Once the topic to be studied is chosen, questions specific to the topic are created[20]. During the FGD, the moderator guides the discussion by asking the participants open ended questions. It is important that the moderator believes that the participants have something valuable to say regardless of their education level[57]. Ideally, there should be six to ten participants per FGD. This allows for enough opinions to be stated while participants do not have to compete for a chance to talk. The participants need to be comfortable talking to each other and to moderator, and they should be interested in the topic at hand. To obtain the information needed and avoid wasting time,

participants should be from groups of the same or similar gender, race/ethnicity, age, location, education level, occupation, income, and family composition[58]. During the FGD each participant is given a number so that their comments can be identified. Once the FGD is transcribed, it is clear what each individual said, and it is clear whether the beliefs held are of the group or of one or two participants[59].

The questions asked during a FGD are asked in a sequential order so that the key questions are asked after the participants have had a chance to begin thinking about the material and can give more thoughtful answers. Immediately after each FGD, the moderator and assistant moderator discuss what they observed and summarize their impressions. The length of a FGD may range from one to two hours[59], and the discussions are audio or video recorded and then transcribed verbatim[58]. The transcript is read, and new ideas or comments are coded[59]. Every time a similar comment is read, the comment receives a similar code. The comments with the same code are grouped together[59]. Patterns are identified, and comparisons and contrasts are made with other FGD that have been done with groups representing the same population[59]. Usually three to five FGD are done, each containing different participants from the same demographic. If the discussions generate similar responses, then three FGD are enough. However, if the responses vary from one FGD to another and more information is uncovered, additional FGD will need to be conducted to draw valid conclusions[58].

Computer software can be used to analyze the results of FGD[58]. The advantage of using computer software is that it makes the analyzing process systematic. Using computer software also reveals anything that is inconsistent during the analyzing process. Search functions in computer software, such as the "find" feature on Microsoft Word, make it easy to find certain responses and to determine a pattern of responses during analysis[59].

The main limitation to FGD is bias. A biased moderator may word or phrase the questions asked in order to get the response he desires or she is expecting. A moderator may not ask a question that will be beneficial to the research because the response may not be the desired response[60]. In order to prevent bias, the moderator must remember questions that lead participants to an answer they think is what the moderator wants to hear may undermine the credibility of the FGD[60]. Another limitation is that the moderator may unintentionally lead the participants to answer the questions the way they think the moderator wants the questions to be answered[57]. The participants may give an answer because they think it is what the moderator wants to hear instead of the participants' actual opinions. To prevent this, the moderator must pay attention to his body language and not nod his head too much. The moderator must also pay attention to his responses to the participants and to avoid words such as "great" or "excellent" [57]. The moderator should use neutral words such as "okay" or "alright" and should use small hand gestures[57].

Another limitation of FGD is that a discussion may not be generated if the questions are not appropriate for the group[20]. There may be an education or communication barrier between the moderator and the participants. If a moderator notices that the participants do not understand the question that was asked, he should re-word the question following the pilot study in a way that is easier for the participants to understand in subsequent FGD[57]. If the participants are not comfortable with each other or with the moderator, a discussion may not be generated[20]. In order to prevent this, the moderator should make "small talk" with the participants prior to the FGD to create a comfortable, relaxed environment. Also, if controversial topics such as political or religious views are not the topic of the FGD, the moderator should change the subject if participants start talking or arguing about these issues[57].

Focus group discussions have been used to find the factors that influence food behaviors of low SES individuals[61]; the barriers to diet change of mothers participating in WIC[61]; and to develop a nutrition intervention program for low-literacy adults[63]. In each of these studies, motivations for change and barriers were identified. Motivations for change included concerns about health for the participants and for their families[61,62,63]. The barriers that were identified were time, lack of nutrition knowledge, lack of training in preparing meals, lack of social support, food preference, pressure from children to cook foods higher in fat and sugar, and social eating[61,62,63]. For each of the studies, intervention programs were created to address the identified barriers and reinforce the motivations for change[61,62,63].

Theoretical Model: PRECEDE/PROCEED

The PRECEDE/PROCEED model is a model for planning, implementing, and evaluating health education programs[19]. PRECEDE is an acronym for **p**redisposing, **r**einforcing, and **e**nabling **c**auses in **e**ducational **d**iagnosis and **e**valuation[19]. The PRECEDE phases of the model identify the factors that affect health behaviors and create objectives to correct the negative factors[19,64]. In the PROCEED phase of the model, policies that match the objectives made in the PRECEDE phase are implemented and evaluated[19]. PROCEED is an acronym for **p**olicy, **r**egulatory, and **o**rganizational **c**onstructs in **e**ducational and **e**nvironmental **d**evelopment[19]. In this discussion only the PRECEDE portion of the model will be explained since it was the only portion of the model used.

There are five phases of the PRECEDE segment of the model as shown in Figure 1. The five phases include: social diagnoses, epidemiologic diagnoses, behavioral and environmental diagnoses, educational and organizational diagnoses, and administrative and policy diagnoses[19].

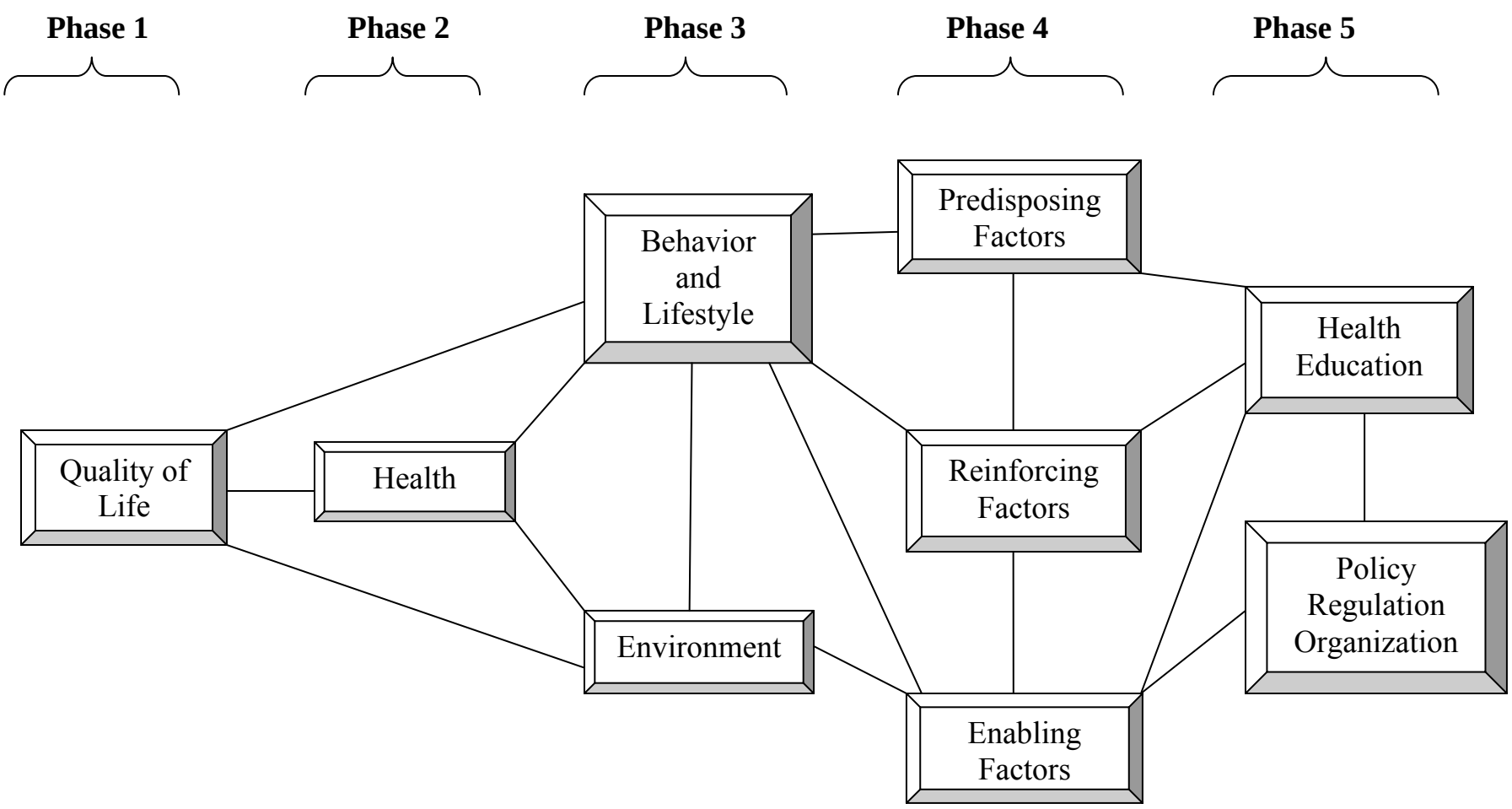

Figure 1: PRECEDE segment of the PRECEDE/PROCEED model[19]

Each phase is dependent upon the phase that precedes it. In the first phase, the social diagnostic phase, the quality of life of the targeted individuals or communities is determined. In the second phase or the epidemiologic diagnoses, the problems that affect quality of life determined in phase one are identified. The problems that are identified are prioritized based on epidemiologic data and statistics on mortality, morbidity, and disability[19]. The third phase or the behavioral and environmental diagnoses uses the health problem chosen in phase two in order to identify the behavioral and environmental factors that affect the problem. The behavioral and environmental factors are the risk factors associated with the health problem and are the target of the intervention[19].

In the fourth phase, the educational and organizational diagnoses, the behavioral and environmental factors that were identified in phase three are grouped into three categories: predisposing factors, enabling factors, and reinforcing factors[19]. Predisposing factors are those that allow an individual or community to act or that stop them from acting[19]. The predisposing factors are due to the individual or community's attitudes, knowledge, or beliefs[19]. Predisposing factors can be used to predict a behavior[64]. Enabling factors are the abilities, resources, or barriers of the individual or community and are what make a behavioral or environmental change possible[19,64]. Enabling factors can be identified when the absence of the factors prohibits a behavior[64]. Reinforcing factors reward the individual or community for continuing certain behaviors. The reinforcing factors may be provided by other people, organizations, or society. These factors can be identified when a support system stops supporting the individual or community[64]. In the fifth phase, the administrative and policy diagnoses, the abilities and resources of the administrators of the intervention are assessed[19]. The limitations of the

administrators and intervention are addressed and timelines and objectives of the intervention are made[19].

The PRECEDE/PROCEED model is an ideal model for health planning and education and is appropriate for use in research that determines the health needs of a population so that an intervention can be planned[19]. The PRECEDE/PROCEED model has been used in nutrition research to determine the predisposing, enabling, and reinforcing factors that affect fat consumption in low income women[48]. The model has also been used in nutrition research in order to determine differences in the predisposing, enabling, and reinforcing factors that affect fat consumption in normal weight and obese mothers participating in WIC[65].

CHAPTER 3
SUBJECTS AND METHODS

Institutional Review Board Approval

This study was approved by Louisiana State University (LSU) AgCenter's Institutional Review Board (IRB). Participants provided written informed consent prior to participating in all aspects of this study.

Focus Group Discussions

Information was obtained using FGD. The moderator and the assistant moderator led the FGD. The moderator was a Nutritional Sciences undergraduate student at LSU, and the assistant moderator was a Human Nutrition and Foods (HNF) research associate at LSU. The assistant moderator scheduled the FGD. The moderator and assistant moderator arrived approximately 30 minutes before each FGD began to arrange the room in which the FGD would be held so that it would create a comfortable environment for discussion; they set out refreshments including apples and bananas for the participants (FGD 1 and 2); and had the participants complete a consent form (Appendix A) and survey (Appendix B). The procedure of the FGD and the purpose of the study were described to the participants by the moderator and assistant moderator.

The recording devices were set up by the assistant moderator. The FGD were audio taped and labeled by date, location, and time. The moderator guided the discussions by asking the participants open-ended questions (Appendix C) that were previously planned and were used for each FGD. The questions involved the 2005 MyPyramid and menus (Appendix D) and recipes (Appendix E) created previously[18]. At the end of each FGD, each participant was given a $15 gift certificate to Wal-Mart, a copy of the menus and recipes, and a handout of the 2005 MyPyramid. The actual FGD lasted approximately 45 minutes.

Study Participants

The participants for the first two FGD were recruited with the help of a Nutrition Educator with the LSU AgCenter. The participants from FGD 1 resided in a substance abuse half-way house, Reality House, sponsored by Louisiana Health and Rehabilitation Center in East Baton Rouge Parish, LA. The participants from FGD 2 were members of a GED class offered by Saint Paul Catholic Church in East Baton Rouge Parish, LA. The participants for FGD 3 and 4 were recruited from two Saint Vincent de Paul homeless shelters in East Baton Rouge Parish, LA.

Focus Group Discussion Questions

Open-ended questions were constructed based on the objectives of the study and the PRECEDE/PROCEED model (Tables 1-2). The first questions were basic and were used to engage the participants in a discussion. As the FGD progressed, answering the questions required more thought or reflection. The moderator and assistant moderator used probes if it was thought the participants had more opinions to offer or if a participant needed to clarify his/her opinion. The probes used in order to get the participants to expand their answers were: good/poor taste, availability, time, cost, children's taste, spoilage, don't know how to prepare (questions 5, 6, and 8), lactose intolerance (question 7), and don't know what one is (FGD question 8).

Table 1: Focus group discussion question by type of question, matched objective, and the PRECEDE factor identified.

FGD question	Type	Matched Objective	Factor Identified
1. What does the word "healthy" mean to you?	Introductory	None	None
2. What do you think the relationship is between what you eat and your health?	Introductory	None	None
3. What would you consider to be a healthy meal? Why?	Introductory	None	None
4. Do you know what the recommendations for a healthy diet are? Are you familiar with MyPyramid?	Transition	Objective 1: Determine the predisposing factors to following menus that meet the DGA.	Predisposing
5. MyPyramid recommends that men/women of your age eat 2 ½ cups of vegetables a day and an assortment of vegetables each week. Are you able to eat this amount of vegetables? What allows you to eat them? What stops you from eating them?	Key	Objective 2: Determine the barriers and enabling factors to following menus that meet the DGA.	Enabling / Barriers
6. MyPyramid recommends that men/women of your age eat 1 ½ cups of fruit a day. Are you able to eat this amount of fruit? What allows you to eat this amount of fruit? What stops you from eating them?	Key	Objective 2: Determine the barriers and enabling factors to following menus that meet the DGA.	Enabling / Barriers
7. MyPyramid recommends that men/women of your age drink 3 cups of milk or other types of dairy products a day. Are you able to drink/eat this amount of milk or other dairy products? What allows you to drink this amount of milk? What stops you from drinking this amount?	Key	Objective 2: Determine the barriers and enabling factors to following menus that meet the DGA.	Enabling / Barriers
8. MyPyramid recommends that men/women of your age eat 6 servings of grains, 3 of which are whole grains a day. Are you able to eat this number of servings of grain? What allows you to eat these grains? What stops you from eating them?	Key	Objective 2: Determine the barriers and enabling factors to following menus that meet the DGA.	Enabling / Barriers

9. We have some menus and recipes that we've worked out that are low cost and meet the requirements for a healthy diet. Would you mind looking at them and telling us whether you think you would like the meals? Do you think you would be able to prepare them in your home for your family?	Key	Objective 3: Determine whether previously planned menus and recipes were acceptable to a low-SES population in South Louisiana.	Enabling / Barriers
10. Is there anything else you would like to talk about regarding diet and health?	Ending	None	None

Table 2: The purpose and the objectives met by FGD question(s)

FGD question(s)	Objective met	Purpose of the question
Question 4	Objective 1	To reveal the participants' nutrition knowledge
Questions 5-8	Objective 2	To obtain the reasons why the participants were or were not meeting the MyPyramid recommendations at the time of the FGD To obtain reasons why the participants will or will not be able to follow the menus
Question 9	Objective 3	To obtain reasons why the participants will or will not choose to follow the menus

Analysis

The FGD were transcribed verbatim. The FGD were labeled FGD 1-4 in the order in which they were conducted. Each participant was coded according the FGD date in the order that he or she was seated. The participants were not coded by their names to maintain anonymity. Each FGD transcription was analyzed separately. For each FGD, the transcript was read and the responses for each question were combined in summary form so that specific predisposing factors, barriers, and enabling factors could be identified, and then it could be seen whether the identified factors were specific to one participant or to more participants. After the FGD were analyzed separately, they were analyzed together by question in order to determine common trends among the groups.

CHAPTER 4
RESULTS

A total of four FGD were conducted between October 2007 and May 2008 (Table 3). The first of the four was a pilot FGD.

Table 3: FGD by number, number of participants, date, and location

FGD #	# of Participants	Date	Location
1 (Pilot)	8	10-23-2007	Reality House
2	12	10-25-2007	St. Paul Catholic Church
3	13	04-29-2008	St. Vincent de Paul shelter
4	7	05-01-2008	St. Vincent de Paul shelter

A summary of the demographics of the participants is shown in Table 4. There were 40 (58% male) participants; 65%were African American (AA), and 35% were European American (EA). The mean age of the participants was 37.8 years (±13.7 [SD]).

Table 4: Summary of the demographics of participants of each FGD

FGD	Total	1	2	3	4
# of participants	40	8	12	13	7
Mean age in years (±SD)[a]	37.8 ± 13.7	38.6 ± 7.8	23.8 ± 10.8	45.0 ± 8.9	47.3 ± 12.7
Sex					
Male	23	0	3	13	7
Female	17	8	9	0	0
Race					
African American	26	5	12	4	5
European American	14	3	0	9	2
Education					
High School Diploma	14	4	0	7	3
GED	14	0	8	4	2
Some College	6	2	2	1	1
College Degree	1	0	0	1	0
Trade/Technical School	4	0	0	2	2
FIND Work/STEP	1	0	0	1	0
Employed					
Yes	14	1	4	4	5
No	26	7	8	9	2

[a] SD = standard deviation

The predisposing factors, enabling factors, and barriers to following the menus identified in each group are in Tables 5-7. Since the groups were not homogenous, the predisposing factors, enabling factors, and barriers differed from group to group. The only predisposing factor to following the menus that was identified in each group was the good taste of fruit, vegetables, low-fat dairy, and whole grains; this applied to some, but not all, participants. None of the enabling factors were the same in each group. The only barriers that were identified in each group were the poor taste of fruit, vegetables, low-fat dairy, and whole grains and preference for foods not on the menus.

Table 5: Predisposing factors to following the menus identified in each FGD.

Factor	FGD 1	FGD 2	FGD 3	FGD 4
Knowledge	X			
Lack of knowledge		X	X	X
Good taste	X	X	X	X
Family background	X			
No longer dependent upon drugs	X			
Family food lore		X		
Differing belief of what is healthy			X	

Table 6: Enabling factors to following the menus identified in each FGD.

Factor	FGD 1	FGD 2	FGD 3	FGD 4
Availability	X			
"Eat it because it's 'healthy'"	X	X		X
Access to a shelter			X	X

Table 7: Barriers to following the menus identified in each FGD.

Barrier	FGD 1	FGD 2	FGD 3	FGD 4
Poor taste	X	X	X	X
Lack of food prep skills	X		X	
Lactose intolerance	X	X	X	
Food preference	X	X	X	X
Small portion sizes	X	X		X
Lack of availability		X	X	X
Lack of transportation		X		
Cost		X	X	
Food spoilage			X	X
Unstable environment			X	X
Convenience			X	
Lack of a kitchen			X	X
Hot weather				X

Focus Group Discussion 1 – Pilot Test

Predisposing factors. Knowledge of MyPyramid was a predisposing factor to consuming a diet that reflects the food recommendations of the DGA. Seven/eight (87.5%) participants had seen the MyPyramid before. When asked "where?", they responded: from an LSU AgCenter nutrition educator, Connections for Life, and a WIC unit. Seven/eight (87.5%) participants knew that MyPyramid gives recommendations for healthy eating, but they did not know the recommendations of MyPyramid for each food group. One participant thought she knew the recommendations for each food group, but she did not.

Good taste was another predisposing factor. Six/eight (75%) participants reported that they liked vegetables, and stated that they met the recommendations for vegetables daily; two of

the six said that their dinner was not complete without vegetables; one of the six reported liking "every vegetable." Three/eight (37.5%) participants said they loved fruit. The fruit that the group reported liking included bananas (n=3), oranges (n=1), strawberries (n=3), kiwi (n=2), watermelon (n=2), and apples (n=1). Some participants listed more than one fruit they liked, and others did not respond. Four/eight (50%) participants reported they liked the taste of milk, two (25%) of the participants said they liked yogurt, and three (37.5%) of the participants said they liked cheese. Three/eight (37.5%) participants said they liked ready-to-eat cereal such as Raisin Bran and Smart Start. Two/eight (25%) participants said that they preferred oatmeal to grits.

Family background and that they no longer were dependent on drugs were other predisposing factors to following the menus. Four/eight (50%) participants were raised to eat "healthy" foods, and four/eight (50%) wanted to eat healthier either because they felt they were getting older or because they were not addicts anymore and wanted to take care of their bodies.

Enabling factors and barriers to consuming 2.5 cups of vegetables a day. When they were asked what allowed them to eat vegetables the responses were "it's there" and "nothing would stop me unless they stopped growing them." The group was asked if they purchased the vegetables, and they said that the organization that sponsors their group home paid for their groceries. When the group was asked if they ate a variety of vegetables, one participant said that they ate every kind of vegetable. Lack of knowledge of how to cook was a barrier for one/eight (12.5%).

Enabling factors and barriers to consuming 2 cups of fruit a day. All participants said they could consume 1.5 cups of fruit a day and then amended the statement to say that they could eat it when it was in their house. Availability of fruit was an enabling factor for eating it; the participants stated that they purchased: strawberries, cantaloupe, honeydew melon, bananas,

apples, and grapes. Two/eight (25%) participants said that they did not like fruit, but they would eat it if it were cut up with the skin removed and with a cream or caramel sauce. Fruit that three (37.5%) participants reported not liking included raisins (n=1), cantaloupe (n=1), and apples (n=1). Food allergy was a barrier for one/eight (12.5%) participants who reported that strawberries gave her hives.

Enabling factors and barriers to consuming 3 cups of milk a day. When asked what allowed them to drink milk, one participant said availability. Three/eight (37.5%) participants stated that they believed they were lactose intolerant. Two of the three said that they still tried to drink milk because they loved the taste even though it made them sick.

Enabling factors and barriers to consuming 6 oz of grains with half as whole grains. Three/eight (37.5%) participants did not know what grains were until it was explained that this was the food group that included rice, bread, and pasta. Three/eight (37.5%) participants reported that they ate whole grains because they were available, and one/eight (12.5%) participants reported that she ate whole grains for health reasons. One/eight (12.5%) participants said that she knew whole wheat bread was better than white bread but that she was still going to choose white bread over wheat bread because of the better taste of white bread.

Acceptability of the menus and recipes. Half did not think that the Ham and Black-Eyed Pea Soup with Collard Greens menu/recipe item was acceptable. Two/eight (25%) participants had never heard of creamed spinach, but one thought she might like it. One participant did not like beans and thought any recipe with beans was unacceptable. Another participant thought the Chili and Rice menu/recipe item was unacceptable and did not think that chili and rice should be eaten together. Three/eight (37.5%) participants said that they could follow the menus. The

main complaint about the menus was that the portion sizes were too small, and three participants were upset that the amounts recommended for women were less than that for men.

Focus Group Discussion 2

Predisposing factors. None of the participants knew about MyPyramid. Most participants gave blank stares or mumbled when asked if they were familiar with it. One participant said "food groups" when the group was asked if they knew anything about the old Food Guide Pyramid.

Good taste was another predisposing factor. Vegetables liked by the group included Brussels sprouts (n=2), greens (n=3), spinach (n=2), salad (n=2), green beans (n=1), corn (n=4), peas (n=1), cabbage (n=1), and broccoli (n=1). Some participants stated more than one vegetable, and others did not answer. Fruit liked by the participants included grapes (n=2), apples (n=4), strawberries (n=2), bananas (n=2), watermelon (n=3), cantaloupe (n=1), mango (n=1), oranges (n=5), cherries (n=1), peaches (n=1), and plums (n=1). Five/twelve (41.7%) participants reported that they liked the taste of milk. Three/twelve (25%) participants liked wheat or whole wheat bread instead of white bread; one/twelve (8.3%) participants liked brown rice instead of white rice; and one/twelve (8.3%) participants liked oatmeal.

Family Food Lore was a predisposing factor. One/twelve (8.3%) participants did not want to eat the ham and black-eyed pea soup with collard greens because she was afraid of black-eyed peas. When she was younger, her brothers told her that the black part of black-eyed peas ate the food in people's stomach.

Enabling factors and barriers to consuming 2.5 cups of vegetables a day. Two/twelve (16.7%) participants said that the unpleasant taste of vegetables was a barrier for them and one of the two reported she only ate broccoli. Two/twelve (16.7%) of the participants said that the lack

of availability of vegetables was a barrier for them. Cost was a barrier for one/twelve (8.3%) participants.

Enabling factors and barriers to consuming 2 cups of fruit a day. One/twelve (8.3%) participants said that availability of fruit was not a problem for her, but she did not say whether she ate 2 cups of fruit a day. The lack of availability of fruit was a barrier for one/twelve (8.3%) participants who said she only got fruit when she went to her grandmother's house. Two/twelve (16.7%) participants said that they did not purchase fruit weekly, and lack of transportation to the store was the reason. The poor taste of fruit was a barrier for three/twelve (25%) participants.

Enabling factors and barriers to consuming 3 cups of milk a day. Two/twelve (16.7%) participants said that lactose intolerance was the reason they did not drink milk, and two other participants said poor taste was their reason for not drinking milk.

Enabling factors and barriers to consuming 6 oz of grains with half as whole grains. Poor taste was a barrier for eating wheat or whole wheat bread for six/twelve (50%) participants; for eating any kind of bread for one/twelve (8.3%) participants; for eating brown rice for one/twelve (8.3%) participants; and for eating oatmeal for five/twelve (41.7%) participants. Access to whole grains was not a problem for this group nor was the ability to fix oatmeal/grits/rice a problem. One/twelve (8.3%) participants said that she limited the amount of bread she ate since she was diabetic.

Acceptability of the menus and recipes. Four/twelve (33.3%) participants said the pot roast was unacceptable because of the poor taste. Five/twelve (41.7%) participants said the ham and black-eyed pea soup with collard greens was unacceptable because the ham, black-eyed peas, and collard greens were mixed in a soup together and not eaten separately. Eleven/twelve (91.7%) participants said that the Chili and Rice was unacceptable because the idea of eating

chili with rice disgusted them. Two/twelve (16.7%) participants only liked one recipe/menu item; one liked the broccoli, cheese, and rice casserole and the other only liked the Cajun jambalaya.

One/twelve (8.3%) participants said that she would not change anything about the menus or the recipes. One/twelve (8.3%) participants said the only thing she would change was the chili and rice, and that the other menus were similar to what she ate daily. Eleven of the 12 participants said that the menus were not typical of what they normally ate. One of the eleven said that the portion sizes were too large, but ten (83.3%) participants said that the portion sizes on the menus were too small.

Focus Group Discussion 3

Predisposing factors. None of the participants were familiar with MyPyramid. One/thirteen (7.7%) participants knew that the pyramid changed a few years ago, and he tried to guess what the recommendations were but was unsure of the actual recommendations. Seven/thirteen (53.8%) participants reported that they had seen the old food guide pyramid. When asked if they knew the food groups, they responded: bread, milk, cereal, and fish. When the group was asked where they had seen the old food guide pyramid, the participants responded: on loaves of bread, on milk cartons, in school, and the Veterans Administration hospital.

The participants' attitudes of what they considered a healthy meal were predisposing factors. Jail and hospital meals were what three/thirteen (23.1%) participants thought was healthy food. Five/thirteen (38.5%) thought that what they were served at the shelter was healthy. One/thirteen (7.7%) participants thought that having a full plate was healthy.

Taste was a predisposing factor. Vegetables the group reported liking included corn (n=3), carrots (n=2), cabbage (n=1), greens (n=1), asparagus (n=1), spinach (n=1), Brussels

sprouts (n=2), and celery (n=1). Some participants listed more than one vegetable, and others did not respond. Five/thirteen (38.5%) participants liked fruit. Fruit that the group reported liking included apples (n=2), oranges/ mandarin oranges (n=3), pears (n=1), bananas (n=2), and grapefruit (n=2). Eleven/thirteen (84.6%) participants liked the taste of milk. Six/thirteen (46.2%) participants liked wheat bread, and three/thirteen (23.1%) participants liked oatmeal.

Enabling factors and barriers to consuming 2.5 cups of vegetables a day. Poor taste was a barrier for three/thirteen (21.3%) participants; vegetables that the participants did not like included spinach (n=1), beets (n=1), corn (n=1), and carrots (n=1). Eight/thirteen (61.5%) participants assumed that when they had access to a shelter, enough vegetables were provided to meet the recommendations for vegetables. Three/thirteen (23.1%) participants said they took vitamins to get the nutrients provided by vegetables (and fruit). Lack of availability was a barrier for two/thirteen (15.4%) participants. Cost was a barrier for two/thirteen (15.4%) participants. One/thirteen (7.7%) participants avoided carrots and corn in an attempt to control his blood sugar. One/thirteen (7.7%) participants stated that lack of a place to cook vegetables and a lack of knowledge of how to prepare them were barriers for him, and time was a barrier for another participant; preference for energy dense foods was also a barrier for both of these participants.

Enabling factors and barriers to consuming 2 cups of fruit a day. Three/thirteen (23.1%) said they ate more fruit than vegetables because they liked the taste of fruit better than vegetables. One/thirteen (7.7%) participants said that fruit was provided to them at the shelter, and availability enabled two/thirteen (15.4%) participants to meet the recommendations for fruit. Fruit that the participants said they did not like included apples (n=2), grapefruit (n=1), and oranges (n=1). The poor taste of fruit and preference for energy dense foods were barriers for

eating fruit for four/thirteen (30.8%). One of the four, who was diabetic, said that he would rather consume carbohydrates from energy-dense foods than fruit. Cost and spoilage were barriers for three/thirteen (23.1%) participants who stated that fruit was expensive because it spoils.

Enabling factors and barriers to consuming 3 cups of milk a day. Lack of availability and lack of refrigeration were barriers for all (100%) participants. Cost was a barrier for two/thirteen (15.4%) participants. Lack of knowledge of good dairy foods to consume was a barrier for one/thirteen (7.7%) participants who said that he met the dairy requirement by consuming ice cream. Poor taste was a barrier for one/thirteen (7.7%) participants. Actual/perceived lactose intolerance was a barrier for two/thirteen (15.4%) participants.

Enabling factors and barriers to consuming 6 oz of grains with half as whole grains. One/thirteen (7.7%) participants said that he chose whole grains instead of refined because he felt better after eating whole grains. Poor taste was a barrier for three/thirteen (23.1%) who stated that they would rather eat white bread. The lack of availability was a barrier for eating whole grains for four/thirteen (30.8%) participants who reported not eating whole wheat bread in years. Knowledge was a barrier for two/thirteen (15.4%) participants who did not know types of whole grains, and thought that white bread had fewer calories and more nutrients than wheat bread. One/thirteen (7.7%) participants thought that wheat bread was better than white bread because it had less yeast and was therefore better for diabetics.

Acceptability of the menus and recipes. One/thirteen (7.7%) participants liked the chicken Alfredo with vegetables because he thought it would be a "good way to fool [himself] into eating more vegetables." Three/thirteen (23.1%) participants said that the tuna salad was acceptable, but two wanted the celery removed from the recipe and one wanted the eggs removed

from the recipe. Seven/thirteen (53.8%) participants said that the portion sizes on the menus were too small, and one/thirteen (7.7%) participants said that there was not enough meat on the menus and that the whole wheat bread should be replaced with white bread. One/thirteen (7.7%) participants thought that the pot roast should be replaced with a roast chicken.

Focus Group Discussion 4

Predisposing factors. All of the participants had seen the old food guide pyramid but not MyPyramid. When the participants were asked what they knew about the food guide pyramid they listed the food groups: fruit (n=2), meat/protein/poultry/fish (n=3), bread/oats (n=3), milk/dairy (n=2), vegetables (n=2). One/seven (14.3%) participants reported that he recently had a class on the food guide pyramid at Louisiana Health and Rehabilitation Options, but he could not remember the actual recommendations. One/seven (14.3%) participants thought he knew the recommendations but did not.

Good taste was a predisposing factor. Vegetables liked by the participants included mustard greens (n=1), spinach (n=1), collard greens (n=2), corn (n=1), green beans (n=2), broccoli (n=1), and cauliflower (n=1). Four/seven (57.1%) participants liked fruit; fruit they liked included bananas (n=2), oranges/mandarin oranges (n=2), green apples (n=1), and watermelon (n=1). One/seven (14.3%) participants liked the taste of milk.

Enabling factors and barriers to consuming 2.5 cups of vegetables a day. Being homeless was a barrier for at least three/seven (42.9%) participants. Vegetables not liked by the group included peas (n=2), corn (n=1), mustard greens (n=1), squash (n=1), and eggplant (n=2).

Enabling factors and barriers to consuming 2 cups of fruit a day. Availability of fruit at the homeless shelter enabled one/seven (14.3%) participants to meet the fruit recommendation daily. Eating for good health enabled one/seven (14.3%) participants to eat fruit. Lack of access

was a barrier for one/seven (14.3%) participants. Preference for energy dense foods was a barrier for three/seven (42.9%) participants. That fruit spoils was a barrier for one/seven (14.3%) participants.

Enabling factors and barriers to consuming 3 cups of milk a day. Lack of refrigeration was a barrier for two/seven (28.6%) participants; one of the two ate cheese instead of drinking milk. Lack of knowledge of the milk food group was a barrier for two/seven (28.6%) participants. One of the two included eggs in the milk food group and thought milk was a good source of vitamins C and K, and another participant said that he met the milk requirement through ice cream. Poor taste was a barrier for one/seven (14.3%) participants. That being out in the sun after drinking milk made them feel sick was a barrier for two/seven (28.6%) participants.

Enabling factors and barriers to consuming 6 oz of grains with half as whole grains. The health benefits of eating whole grains would have enabled two/seven (28.6%) participants to eat wheat bread, but lack of availability was a barrier for them. One replied: "you eat what you can." Two/seven (28.6%) participants stated they ate crackers/bread and water during the day when they got hungry.

Acceptability of the menus and recipes. One/seven (14.3%) participants said that he really liked the recipes. Two/seven (28.6%) participants said that they liked the menus, and one of the two said that he would follow the menus if he had enough money to buy the food. The most unacceptable menu/recipe item to this group was the Ham and Black-Eyed Pea Soup with Collard Greens; one/seven (14.3%) said that bacon should be added, and two of seven said that the black-eyed peas should be replaced with butter beans. Two/seven (28.6%) participants said that chicken breasts should have been used in the recipes instead of chicken legs because breasts

have fewer calories and fat than legs. Two/seven (28.6%) participants said that the portion sizes were too small on the menus, and one/seven (14.3%) wanted white bread to replace wheat bread on the menus.

Overall Acceptability of the Menu/Recipe Items

The menu/recipe items that the participants reported as being acceptable are in Table 8. Twenty-one of the menu/recipe items were considered acceptable by one or more of the participants from FGD 1, five menu/recipe items were considered acceptable by one or more of the participants from FGD 2, 15 of the menu/recipe items were considered acceptable by one or more participants of FGD 3, and nine of the menu/recipe items were considered acceptable by one or more participants of FGD 4.

The menu/recipe items that the participants reported as being unacceptable are in Table 9. Five of the menu/recipe items were considered unacceptable by one or more of the participants from FGD 1, 27 menu/recipe items were reported as unacceptable by one or more participants from FGD 2, eight of the menu/recipe items were considered unacceptable by one or more participants from FGD 3, and five menu/recipe items were considered unacceptable by one or more participants from FGD 4.

Table 8: Menu/recipe items by number of participants in each FGD who reported them as acceptable.

Acceptable Menu/Recipe	All FGD	FGD 1	FGD 2	FGD 3	FGD 4
Cajun Spiced Chicken	4	2		2	
Green Bean Casserole	2	1		1	
Garden Coleslaw	1				1
Tuna Salad	4	1		3	
Chicken and Vegetable Stir Fry	3	2			1
Peach Crisp	2			2	
Chicken Alfredo with Vegetables	3	1		1	1
Pot Roast	1	1			
Chili and Rice	1	1			
Mama's Meat Loaf	2	1		1	
Creamed Spinach	3	3			
Oatmeal Raisin Cookies	2		1	1	
Banana Pancakes	3	2			1
Family Style Red Beans and Rice	2	1		1	
Apple and Carrot Salad	2	1	1		
Mardi Gras Chicken	3	2			1
Black Bean and Corn Soup	1	1			
Chicken Quesadillas	3	3			
Ham and Black Eyed Pea Soup with Collard Greens	1				1
Apple Cake	1	1			
Cajun Jambalaya	6	1	3	1	1
French Toast	1	1			
Oven Fried Pork Chops	7	3	2	1	1
Smothered Cabbage	2			2	
Broccoli, Cheese, and Rice Casserole	4	2	2		
Peanut Butter and Raisin Sandwich	1				1
Oatmeal with Raisins	2	1		1	
Scrambled Eggs/Omelet	1			1	
Turkey Ham	1			1	

Table 9: Menu/recipe items by number of participants in each FGD who reported them as unacceptable.

Unacceptable Menu/Recipe	All FGD	FGD 1	FGD 2	FGD 3	FGD 4
Green Bean Casserole	1		1		
Garden Coleslaw	5		2	2	1
Tuna Salad	1		1		
Chicken and Vegetable Stir Fry	1		1		
Peach Crisp	1		1		
Chicken Alfredo with Vegetables	2		2		
Pot Roast	5		4	1	
Sautéed Yellow Squash	3		2	1	
Chili and Rice	13	2	11		
Creamed Spinach	2		2		
Oatmeal Raisin Cookies	1		1		
Banana Pancakes	2		1		1
Vegetable Medley	1		1		
Family Style Red Beans and Rice	1	1			
Apple and Carrot Salad	3	1	2		
Mardi Gras Chicken	1		1		
Garden Stuffed Baked Potatoes	1		1		
Black Bean and Corn Soup	4	1	3		
Vegetable Pasta Casserole	1		1		
Ham and Black Eyed Pea Soup with Collard Greens	8		5		3
Sautéed Zucchini	1		1		
Vegetable Beef Soup	2	1	1		
Smothered Cabbage	2		2		
Potato Salad	4		3	1	
Peanut Butter and Raisin Sandwich	1				1
1% Milk	3			2	1
Brown Rice	1			1	
Raisins	1		1		
Canned Peaches	1		1		
Scrambled Eggs/Omelet	1		1		
Orange Juice	1		1		

CHAPTER 5
DISCUSSION

Focus Group Discussion and Study Participant Characteristics

Even thought the attitudes, genders, and living conditions of the participants were the same in the individual FGD, they differed from FGD to FGD, contributing to the variability of responses. It was difficult to recruit for this study, thus, study participants were not as homogenous as is desirable for FGD[58]. We used volunteers from Saint Vincent de Paul homeless shelters in East Baton Rouge Parish in FGD 3 and 4 which was a different population than that in the first two groups; it was probable that the participants of FGD 3 and 4 had different barriers to following the menus, especially since they did not have access to cooking or storage facilities or the money to purchase the foods on the menus.

The homeless shelters used food that was donated to them to provide meals for the participants. The participants of FGD 3 and 4 said they had to eat what they could get including fast food, bread/crackers and water, a multivitamin supplement, or digging through dumpsters if they could not get to a shelter. The participants assumed that they met the MyPyramid recommendations if they were able to eat their meals at the shelters. A limitation of FGD 3 and 4 was that we asked about the participants' opinions related to when they were able to get to a shelter and before they were homeless. The information that was given to us about how the participants got food when they could not get to a shelter was given freely by the participants before or after the key questions of the FGD were asked.

Participants of FGD 1 and 2 had access to a nutrition educator from the LSU AgCenter, but only the participants of FGD 1 had any nutrition education when the FGD was done. The participants of FGD 1 attributed their nutrition knowledge to their educator. Nutrition educators of the Expanded Food and Nutrition Education Program or the Food Stamp Nutrition Education

Program teach nutrition to low socioeconomic status (SES) individuals using tools such as MyPyramid[66]. They also teach methods of food management and how to prepare food[67]. Nutrition educators are from the same demographic of the population they serve in order to promote trust among the low SES individuals[67]. Nutrition education was successful for the participants of FGD 1 as they were familiar with MyPyramid and were the most willing of all the participants to follow the menus because they wanted to consume a "healthy diet." In New York State it has been found that from an economic standpoint, successful nutrition education was cost-effective, and it was speculated that nutrition education would improve the health of the individuals that were served and that health care costs would be decreased[68].

The participants of FGD 1 were living in a substance abuse half-way house sponsored by the Louisiana Health and Rehabilitation Center (LHRC) at the time of the FGD. The LHRC is a private, non-profit organization that provides group housing and community-based programs for women recovering from addictive disorders[69]. The participants stated that they were abusing their bodies when they were doing drugs, but since they started rehabilitation they wanted to take care of their bodies. Money was provided for the group to buy groceries, and the participants stated that they took turns cooking meals for the group. They wanted to "eat healthy" and put into practice what the nutrition educator taught them. The fact that the participants were living in a home where money for groceries was provided for them and that they were living in a home with a supportive environment could have resulted in the participants of FGD 1 having fewer barriers than the participants of FGD 2, 3, and 4.

The participants of FGD 2 were in a General Education Development class. Most stated that they lived with a parent or other relatives and that their parents or relatives paid for their groceries. None of the participants stated that they met the MyPyramid recommendations, and

most did not want to. Almost all did not want to follow the menus either. Recurrent comments were that the foods on the menus and small portion sizes were unacceptable. The two participants who did want to follow the MyPyramid recommendations and who did like the menus were older than the rest of the group, and both reported having dyslipidemia, HTN, and type 2 DM.

If used in qualitative research, usually three to five FGD are done, each containing different participants from the same demographic[58]. If the discussions generate similar responses, then the FGD are terminated at three; however, if the responses vary among the groups and more information is uncovered, additional FGD are needed to be conducted to draw conclusions[58]. In this study, the responses among the groups differed in reference to predisposing factors, enabling factors, barriers, and acceptability of the menus. More FGD should have been completed since more information was uncovered at each FGD. However, because of the time limits more FGD could not be completed.

Other problems during the FGD were that the wording of the probes for some of the questions could have been improved; for example two questions were asked simultaneously such as, "Was what stopped you cost? Was it lack of availability?" This was a problem because the participants may not have known which question to answer, but it also may have influenced the participants to give an answer that was not accurate. In addition, acceptability of the menus was difficult to determine since some participants stated that they liked the menus, but also stated that the portion sizes and some foods were unacceptable.

PRECEED/PROCEDE Model

The PRECEED segment of the PRECEED/PROCEDE model was used in this study because it helped identify predisposing factors, as well as barriers and enabling factors to

following these menus. The predisposing factors identified were the lack of knowledge of MyPyramid, the lack of nutrition knowledge, and the good taste of fruit, vegetables, low-fat dairy and whole grains. The identified enabling factors to following the menus included eating for good health, and the availability of fruit, vegetables, whole grains, and low-fat dairy. The identified barriers to following the menus included preference for energy-dense foods, the poor taste of fruit, vegetables, and whole grains, the cost of fruit and vegetables, the lack of knowledge of how to prepare food, and the lack of a place to prepare and store food.

MyPyramid recommendations

MyPyramid provides recommendations for an eating pattern that is based on the DGA[6]. MyPyramid recommendations for the 2000 kilocalorie level were used in the FGD questions. The recommendations are that 6 oz of grains with half of them as whole grains should be consumed daily[70]. In addition, 2 cups of fruit, 2.5 cups of vegetables, 3 cups of low-fat dairy, 5.5 ounces of meat or beans, and 6 teaspoons of oil should be consumed daily[70]. There is also a recommendation that a variety of vegetables be consumed weekly: 3 cups of dark green vegetables, 2 cups of orange vegetables, 3 cups of legumes, 3 cups of starchy vegetables, and 6.5 cups of other vegetables, such as tomatoes[70]. A diet rich in fruit, vegetables, low-fat dairy, and whole grains is recommended because a diet rich in these foods leads to a decreased risk of developing some types of cancer, type 2 DM, HTN, and CVD[5].

As with the individuals in this study, most Americans do not meet the MyPyramid recommendations. Although the recommendations are that individuals should consume 50% of their grains as whole grains, one study showed that individuals only consumed 9.5% of their grains as whole grains[37]. Barriers to consuming whole grains that have been mentioned in the past included the lack of knowledge of what whole grains were and the health benefits of whole

grains, poor taste, cost, and the lack of availability of whole grains in grocery stores[34]. Some of the same barriers were found in this study and included poor taste, cost, and the lack of availability of whole grains in grocery stores.

Americans were not meeting recommendations for dairy either; Americans were consuming 0.71-1.67 cups of dairy a day and African Americans (AA) consumed the smallest amount of dairy[71]. Possible reasons why dairy consumption was low among AA included actual/perceived lactose intolerance, the substitution of milk with carbonated beverages, eating away from home where dairy products were not available, the belief that milk was for children, the lack of role models who encouraged the consumption of milk, and lack of refrigeration[13]. Actual/perceived lactose intolerance and lack of refrigeration were barriers in this study as well.

Americans were not meeting recommendations for fruit and vegetables. A Behavioral Risk Factor Surveillance System survey found that only 29.5% of adults ages 25-34 years and 27.9% of adults ages 35-44 years said they ate fruit twice daily[72]. Further, not only were individuals not meeting the 2.5 cup per day recommendation for vegetables, they were also not meeting the recommendations for variety[37]. People were consuming fewer dark green vegetables, orange vegetables, and legumes than recommended and more starchy vegetables than recommended[37]. Reasons for not consuming enough fruit and vegetables found in one study included cost, lack of knowledge of how to prepare them, lack of social support, lack of availability, time, and preferences for other foods[73]. Some of the same barriers were found in this study and included cost, lack of knowledge of how to prepare produce, lack of availability, and preference for other foods.

Predisposing Factors to Following the Menus

Knowledge of MyPyramid and Nutrition Knowledge. Objective 1 of this study was to determine the predisposing factors to following menus that meet the DGA. Knowledge of MyPyramid and nutrition knowledge were considered predisposing factors to following the menus. Lack of MyPyramid and nutrition knowledge was evident among the focus groups. Only the participants of FGD 1 were familiar with MyPyramid, and a few participants from FGD1 and FGD 4 were the only participants who were able to list the food groups.

Some participants from every FGD said that healthy food included fruit, vegetables, a starch, and grilled white meat. However, few participants mentioned that low-fat dairy should be included in a healthy meal showing a lack of nutrition knowledge. In addition, in each FGD there was a lack of knowledge of what was considered to be a good dairy food to consume. One participant thought that eggs were part of the dairy food group and that milk was a good source of vitamins C and K. However, milk is a poor source of both vitamins C and K[74]. In all of the FGD there were participants who thought ice cream was a good a dairy source, and some participants reported that the dairy they did eat was ice cream. Ice cream, however, is not a good choice when considering the calcium, potassium, and fat content of both ice cream and 1% milk. One 0.5 cup serving, of ice cream has less calcium, less potassium, and more fat than one serving, 1 cup, of 1% milk[74].

Participants were unaware of the MyPyramid recommendations that a variety of vegetables should be consumed. Overall variety preferred and variety consumed was poor. Some participants stated they only ate one kind of vegetable, such as broccoli or corn. Participants of FGD 3 and 4 assumed that if they ate their meals at the shelters, they met the recommendations for vegetables. However, they most likely did not meet the variety

recommendations since they only reported eating green beans and salad at the shelter. Thus, even if these participants were consuming 2.5 cups of vegetables each day, none of them were meeting the recommendations for variety[70].

In order to increase the variety of vegetables consumed in the participants who stated that they only liked one vegetable, taste testing could be done using vegetables from each subcategory (dark green vegetables, orange vegetables, starchy vegetables, legumes, and other vegetables) cooked in a variety of different ways (broiled, grilled, steamed, mixed into casseroles or soups, or cooked in sauces). To improve the variety of vegetables served and to increase the amount of fruit, low-fat dairy, and whole grains available to the homeless, additional public and private funds, greater than what is already given, should be raised. To ensure that the homeless are provided enough vegetables, fruit, low-fat dairy, and whole grains to meet the MyPyramid recommendations, the managers of the shelters should be taught by nutrition educators how to plan meals that would meet the MyPyramid recommendations.

Some participants from FGD 3 said that they took a multivitamin daily since they were not always able to eat fruit and vegetables. By not consuming fruit and vegetables, the participants were also not consuming the fiber or phytochemicals found in these foods. It was found that when phytochemicals were consumed via fruit, vegetables, and whole grains, they had a protective effect against cancer and cardiovascular disease[33]. However, when the phytochemicals were consumed in supplement form the protective effect was not found[33].

The good taste of fruit, vegetables, low-fat dairy, and whole grains. The good taste of fruit, vegetables, low-fat dairy, and whole grains was another predisposing factor to following the menus. Good taste alone did not enable the participants to consume fruit, vegetables, whole grains, and low-fat dairy. If these nutrient-dense foods were not available, the participants were

unable to eat them. Also, taste alone would not have prevented the participants from eating energy dense foods instead of fruit, vegetables, low-fat dairy, and whole grains because, they could have preferred the taste of foods containing refined grains, added sugar, and added fat[39]. In addition, cost and convenience have been shown to affect food choices[10]. Both low cost and convenience have been associated with the consumption of energy dense foods[8].

Enabling Factors to Following the Menus

Objective 2 of this study was to determine the enabling factors and barriers to following menus that meet the DGA. The desire to eat for good health was an enabling factor for some participants; some wanted to "eat healthy" since they were no longer using drugs, and others wanted to "eat healthy" since they had dyslipidemia, HTN, and DM. The desire for health has been found to be an enabling factor for individuals improving their diet in other studies[61,62,73]. When low income mothers were asked what they thought the benefits of increasing their fruit and vegetable intake were, the participants responded: "health benefits[73]." They stated that fruit and vegetable intake made them feel healthy, helped them lose weight, and prevented constipation[73]. Further, concerns about health were what enabled the low income individuals in the lower Mississippi Delta[61] and mothers participating in WIC[62] to improve the quality of their diets.

Availability of the foods on the menus was an enabling factor for the participants of FGD 1 who reported that money for groceries was provided for the group by the LHRC. The participants of FGD 1 reported that they shopped for groceries together, and when they shopped, they bought groceries for the group, not necessarily for themselves. However, simply because the group had access to the foods on the menus did not mean that they would follow them or similar meal plans. In order to ensure that the participants consumed the nutrient-dense foods

that were available to the participants of FGD 1, a nutrition educator could teach the benefits of a diet high in fruit, vegetables, low-fat dairy and whole grains. Thus the group's desire for health would be reinforced, and they would be influenced to consume nutrient-dense foods.

Barriers to Following the Menus

Nearly half of the participants stated that they preferred refined grains, sweets, and meat to fruit, vegetables, low-fat dairy, or whole grains. Approximately one-third of those who preferred energy-dense foods said that they did not purchase fruit and vegetables because energy-dense snacks and foods were more convenient and tasted better than fruit and vegetables. The participants who thought fruit was inconvenient said that if they did eat fruit, they only liked it if it were cut up into a fruit salad which took time to make. Approximately 30% of the participants reported that they did not like the taste of fruit, whereas only 12.5% participants reported that they did not like the taste of vegetables. Some of the participants who said that they did not like fruit, reported that they would eat fruit salad with sweet sauces such as a cream or caramel sauce.

As seen with the participants in this study, taste and convenience affected food choices[8], and convenience has been shown to be a motivator for eating energy-dense foods[10]. Foods that contained added sugar and fat tended to be more palatable[9,39], more likely to be the foods that were craved[39], and provided more enjoyment than fruit and vegetables[39,48]. This could explain why the participants in this study preferred energy-dense foods to fruit and vegetables.

In order to address the participants' preference for energy-dense foods, nutrition educators should emphasize that fruit can be convenient and taste good. The nutrition educator could suggest fruit cocktail in light syrup or canned in 100% fruit juice. Applesauce or canned fruit with tops that do not require can openers are convenient, require no preparation, and have a

long shelf-life. Low-sodium canned vegetables are also convenient, and the variety recommendations could still be met by purchasing canned spinach, canned carrots, canned lima beans, canned corn, and canned green beans[6].

Some participants believed that fruit and vegetables were expensive because they spoiled quickly. Low SES individuals shopped for food that was low cost, provided the most energy, and had the longest shelf-life[31]. The foods with the longest shelf-life, however, were foods with added sugar, salt, fat, and refined grains[31]. In addition to having a long shelf-life, cost analysis and community nutrition studies have shown that for the energy a food provided, foods containing refined grains, sugar, and fat were less expensive than fresh fruit and vegetables and whole grains[5,9,39,47]. To prevent the spoilage of fruit and vegetables and to prevent wasting money, dried fruit, fruit canned in 100% fruit juice, and low-sodium canned vegetables could be purchased. Frozen fruit and vegetables could also be purchased for the participants who had freezers.

A quarter of the participants wanted the wheat bread on the menus to be replaced with white bread. Poor taste was a barrier to whole wheat bread consumption in the past[34] and in this study. The participants in this study preferred refined grains such as white bread and garlic bread because they preferred the taste of refined grains. It has been suggested that if whole grains were sweeter, people would find them more acceptable[34]. Taste testing could be one way to have the participants try toasted wheat bread with jelly or honey and see if they then found wheat bread to be acceptable. The food industry could also aid in improving the taste of whole grains. With current technology, the food industry could make whole grain breads softer and moister[34]. Further, hard white wheat could be used to make whole grain bread, and breads made from hard white wheat were considered to have better taste than other whole grain breads[34].

Actual/perceived lactose intolerance was a barrier for following the menus for approximately 20% of the participants. Almost all of the participants who reported being lactose intolerant were AA, but some of those reporting lactose intolerance reported that they periodically drank milk and ate yogurt and cheese. It has been estimated that up to 80% of AA were lactose intolerant[75]. However, many AA who believed they were lactose intolerant may not have been completely intolerant to lactose[71]. For many people who were lactose intolerant, eight ounces of milk could be consumed without experiencing the symptoms of lactose intolerance as long as the milk was consumed with a meal[76]. Also, those who were lactose intolerant could consume yogurt, hard cheese, a lactase supplement, or milk with added lactase without experiencing the symptoms of lactose intolerance[76].

In this study, most of the milk on the menus was to be consumed with breakfast or lunch, which is suggested for individuals with lactose intolerance[76]. The milk on the menus to be consumed at the evening snack could be changed to yogurt or low/reduced fat hard cheese. Consuming yogurt and hard, low/reduced fat cheeses would be a good solution for the participants of this study. Although taking lactase supplements or consuming milk with added lactase seems like a good solution, these may not be appropriate for the participants of this study because of cost.

Lack of knowledge of how to prepare food was a barrier for following the menus for a few of the participants. In another study of a low-income, low literacy population, nutrition educators asked their participants what stopped them from improving their diet[77]. One barrier they found was lack of knowledge of how to cook, but the participants also said that if the nutrition educators provided hands-on instruction to the participants, they would like to learn

how to cook[77]. Hands-on instruction of how to cook provided by nutrition educators could be a solution for the participants in the current study as well.

In addition to the cost of food on the menus, lack of refrigeration or a place to store food and the lack of a place to prepare food were barriers of the participants in FGD 3 and 4 to following the menus. The participants of both FGD 3 and 4 were living in homeless shelters at the time of the FGD and stated that they had to eat what they could get in or out of the shelters. However, when they could not get to a shelter, they relied on fast food, bread/crackers and water, multivitamins, and what they could find in dumpsters. Even though the meals the participants received at the shelters may not have met the MyPyramid recommendations, their alternatives to eating at the shelters were more nutritionally inadequate; fast food consumption would result in the intake of too much saturated fat and cholesterol[78], and by only consuming bread, the participants were not consuming the necessary nutrients that are found in fruit, vegetables, low-fat dairy, and meat[6]. Also, rummaging through dumpsters provides food that is nutritionally inadequate, increases the risk of food borne illness, and is generally unsafe. A study of the homeless in Minnesota[79] also found that the participants rummaged through dumpsters to obtain food.

A solution to the problem of the homeless obtaining food from dumpsters or eating bread and crackers could be to instate a public policy to increase the number of places available that offer free meals so that these people could eat if they could not get to a shelter. Currently, there are only four places in Baton Rouge, Louisiana where the low income and homeless can go to receive free meals, and only one is open seven days a week[80]. Also, the shelters only serve food for one to two hours[79]. Extended hours of operation would also be needed because if the homeless cannot come during those hours, then they have to resort to fast food, what they can

find in dumpsters, and crackers. The shelters could provide a bagged lunch that would not spoil if not refrigerated such as a peanut butter sandwich on wheat bread, a piece of fruit, and some packaged processed cheese for those individuals who would not be able to come back to the shelter for lunch.

The participants of FGD 3 and 4 reported that they liked the food at the shelters, they thought the food was healthy, and they said they were given an ample amount. Unlike these individuals, the homeless in Minnesota reported that shelters did not provide enough food and that the food was unvaried and undercooked[79]. In both the current study and the study in Minnesota, participants relied heavily on the shelters to provide them food since they did not have access to a kitchen to cook and store their own food.

Acceptability of the Menus and Recipes

Objective 3 of this study was to determine whether previously planned menus and recipes were acceptable to a low-SES population in South Louisiana. The previously planned menus[18] were based on market baskets that were low cost and provided foods that met the DGA. There was an attempt to culturally tailor the menus to be appealing to residents of South Louisiana. Thus, the menus contained foods like jambalaya, red beans and rice, and bread pudding[81]. Also, the menus contained items with names such as "Cajun" because the word is familiar to Louisiana residents and usually implies that the food will be well seasoned and will taste good[82].

The menu items that were acceptable were so because they were familiar to the participants. It is possible that more of the foods on the menus were acceptable and that the participants were most vocal about the menu items they thought they would not like. This should have been determined by additional probing. For example, there were no comments about the

acceptability or unacceptability of the breaded chicken. However, some participants stated that they liked to eat fried chicken when asked what they usually eat.

The biggest complaint on the menus as a whole was that the portion sizes of the foods were too small. Portion sizes of what people are eating, not the portion sizes recommended by nutrition guidelines, have increased since the 1970s[83]. The greatest increases in portion size have occurred in energy-dense convenience foods[84] and in restaurant foods and fast foods[85]. Almost half of the participants stated that they would prefer convenience foods and fast food, and the fact that they normally consumed the foods that have had the greatest increase in portion sizes could be one reason that the participants wanted the portion sizes on the menus to be larger.

The increase in portion sizes has occurred concurrently with the obesity epidemic[83], and the increase in portion sizes has led to an increase in energy intake among individuals which could explain, in part, the obesity epidemic[84]. In the United States in 2005-2006, the prevalence of obesity was 33% among adults[86]. Because of the high prevalence of obesity in the United States, the DGA suggested that individuals consume less energy and increase physical activity[1]. The amount of food recommended to be eaten from each food group was determined so that individuals could consume adequate nutrients without exceeding energy needs[1]. In addition, the serving sizes on the menus in this study reflected the serving sizes of the food recommendations in MyPyramid so that individuals would not consume too much energy[6]. Thus, it would be inappropriate to increase the serving sizes of meat, refined grains, juice, and salad dressing as the participants requested because in order to keep the menus within energy needs, fruit, vegetables, and low-fat dairy menu items would have to be removed.

Menu Changes

The original menus were made in accordance with the MyPyramid food recommendations, and changes to them could be made while still meeting the recommendations. Several participants thought that chicken breasts should be used instead of chicken legs in the recipes including chicken. Chicken breasts would be an appropriate substitution in the recipes for chicken legs; however, chicken leg quarters were originally used in the recipes because of their low cost.

Poor taste was the main reason that that specific menu items were deemed unacceptable. The participants who did not like the ham and black-eyed pea soup with collard greens suggested that the ingredients in the soup be eaten separately instead of together in a soup. This would be an acceptable change because all of the recommendations would still be met. One participant also suggested that lima beans replace black-eyed peas. This would also be an appropriate change because both lima beans and black-eyed peas are legumes and either would meet the recommendations for consumption[6]. It was suggested that the collard greens be replaced with cabbage. The reason why the collard greens were originally chosen instead of cabbage was that they are a dark green vegetable and their consumption would aid in meeting the variety recommendations for vegetables. Replacing the collard greens with cabbage would be appropriate as long as a dark green vegetable replaced a vegetable from the "other vegetable" category in another meal during the same week so that the dark green vegetable recommendation could be met.

The participants who did not like the chili and rice suggested that crackers be used instead of brown rice. Brown rice was included in the menu because it is a whole grain; however, whole grain crackers would be an appropriate substitution. One participant also

suggested that the chili be put over a hot dog instead of rice. This change to the menus would be appropriate if the chili was placed over a low-fat hot dog with a wheat bun.

Some participants found the pot roast to be unacceptable. One of the participants suggested that instead of using beef in the pot roast, chicken should be used instead. This would be an appropriate change since the MyPyramid meat recommendations could still be met.

Participants of FGD 2 were the most dissatisfied of any of the groups with the menus. They suggested that we add fish sticks, fried chicken, macaroni, pizza, garlic bread, spaghetti, dirty rice, chef's salad, etouffee, crawfish, eggrolls, tilapia, "yukameat" (a cultural food containing ramen noodles or rice and ground meat), pea soup, salmon, shrimp Alfredo instead of chicken Alfredo, and chocolate chip cookies instead of oatmeal cookies. Also, one participant in FGD 3 said that bacon and more pork should have been added to the menus.

The foods that the participants suggested could be modified and added to the menus. The menus already contained breaded chicken in lieu of fried chicken. If whole wheat pasta and low-fat cheese were used, macaroni and spaghetti could be added to the menus. If whole wheat bread with garlic powder and lite margarine spread were acceptable to the participants, it could be added to the menus in lieu of garlic bread. Dirty rice prepared from scratch instead of a package to avoid consuming excess sodium could be included as long as brown rice and reduced fat meat are used. Yukameat could also be added as long as brown rice or whole wheat pasta is used in the place of white rice or ramen noodles. Chef's salad could be added if low/reduced fat meats, cheese, and salad dressing are used. Chocolate chip cookies could be modified by replacing half of the flour with either whole wheat or hard white wheat flour. Eggrolls, pea soup, and more pork also could be added to the menus.

The pizza suggestion could be incorporated into the menus, but in order to meet the whole grain recommendations, the pizza dough could be made from scratch using whole wheat flour although this might require more preparation time than the participants would be willing to give. Miniature pizzas could be made using whole wheat bagels or English muffins as the pizza crust, thus decreasing preparation time.

The suggestions that the participants had including tilapia, salmon, shrimp and crawfish would be appropriate from the standpoint of the MyPyramid recommendations. Further, increasing the cost of the market baskets by too much could be avoided if these items are purchased frozen and not fresh. Moreover, modified fish sticks could be added to the menus by lightly breading and baking fish.

The menus were designed to be flexible, and they were designed to teach a method of how to meet the MyPyramid recommendations. For example, in any of the meals on the menu containing beans, whatever type of dry bean or pea the recipe called for could be replaced with another[6]. If an individual did not like kidney beans in the red beans and rice recipe, he could replace the kidney beans with white beans. Any of the vegetables could be replaced with a vegetable from another subcategory as long the variety recommendations for the week were met[6]. Thus corn could replace carrots in one meal, as long as carrots or another orange vegetable replaced a starchy vegetable before the end of the week. In addition, chicken, beef, pork, or fish could be substituted for each other on the menus[6]. One fruit could substitute another fruit[6]; for example, canned pears could be eaten instead of grapes. Also, one low-fat dairy product could replace another[6]; for example, low-fat yogurt could replace low-fat milk.

Additional studies should be done to make the suggested changes to the menus while still meeting the recommendations of MyPyramid and ensuring that the menus are low cost and to

conduct taste tests to ensure that the foods on the menus are acceptable. Taste testing would be a more efficient method of finding the acceptability of the menus than FGD because by using FGD to collect the data in this study, the participants could only speculate whether they actually liked the recipes.

Limitations

The current study had several limitations in addition to the limitations already discussed above. The moderator was not a member of the target population which could have made the participants, especially of FGD 2, uncomfortable; it could have also resulted in the moderator misinterpreting what the participants of any of the FGD were saying. Also, it was unclear if the participants gave an answer that was their actual opinion or if it was what they thought the moderator and assistant moderator wanted to hear. However, the participants were attentive during the FGD, interested in the topic at hand, and most were eager to participate in the discussions. The small sample size of participants (n=40) was not representative of the entire low SES population of South Louisiana.

Conclusions and Future Directions

Predisposing factors included lack of knowledge of MyPyramid, lack of nutrition knowledge, and the good taste of fruit, vegetables, and whole grains. None of the participants knew the MyPyramid recommendations for each food group, even though some did know of MyPyramid and knew of the food groups. The enabling factors to following the menus included health and availability. The barriers to following the menus included preference for energy dense foods, poor taste, food spoilage, cost, lack of knowledge of how to prepare the foods on the menus, and lack of refrigeration or a place to store and prepare food. The menu items that

were acceptable were familiar to the participants. However, the menus as a whole were unacceptable.

Future studies could be done using PRECEED portion of the model on a more homogenous group of low SES individuals to confirm what was found in this study. Future studies could be done using the PROCEDE portion of the model to reinforce the enabling factors and to address the barriers found in this study. Once acceptable menus are made they could be given to nutrition educators as teaching tools. Thus, in addition to teaching low SES participants MyPyramid, the nutrition educators could explain to the participants and other low SES individuals why the foods that were on the menus were chosen, such as variety and nutrient density. The educator could also explain how consuming fruit and vegetables could be convenient and how to consume low-fat dairy even with lactose intolerance. Nutrition educators could also teach the basic benefits of the micronutrients in the foods on the menu since the main enabling factor in this study was eating for good health. The nutrition educators could teach the participants how to prepare the meals, how to measure the foods so that each individual will eat the appropriate amount, and how to modify the menus to prevent the participants from getting tired of the menus. The nutrition educator could also teach the people who head the homeless shelters how to prepare meals that would meet MyPyramid recommendations.

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APPENDIX A: CONSENT FORM

Informed Consent

TITLE OF RESEARCH PROJECT: Use of Focus Group Discussions (FGD) to Assess your current diet knowledge, attitudes, and beliefs about healthy eating.

The purpose of this study conducted by the Louisiana State University (LSU) Agricultural Center investigators is to determine, through the use of focus group discussions, what your current diet is and your knowledge, attitudes, and beliefs about healthy eating. We will also ask you to evaluate some healthy menus that we have prepared to see if these would be appealing to you. This information will be used to understand more about the kinds of food you like and what may prevent you from eating a healthy diet, if anything. You will be asked to answer written demographic questions, including age, race, and education level, and to participate in a FGD with other participants. There are no obvious risks associated with this study. You will receive a $15 gift certificate from WalMart for participating and may learn more about your diet. Society as a whole will benefit by understanding more about what people like to eat and their eating habits.

In order for the results of the FGD to be summarized more accurately, the FGD may be audio- or videotaped. Only LSU researchers involved in this study will have access to these tapes or to the transcriptions. Results of this study, including any publications, will not identify individuals by name. Data will be presented either in summary form or stripped of individual identifiers. You may choose not to respond to a specific question(s), either in the FGD or the demographic survey. You may withdraw from this study at any time without prejudice.

The study has been discussed with me and all questions have been answered to my satisfaction. I may direct additional questions regarding this study to Dr. Carol O'Neil, School of Human Ecology, at 225-578-1631. If I have questions about subjects' rights or other concerns, I can contact Dr. David Morrison at 225-578-8236.

With full knowledge of the above information, I voluntarily consent to take part in this study.

Name of participant (please print):_____
Signature of participant:_____Date:_____
Mailing address:_____
(Street) (City) (Zip)
Phone:_____
Witness (please print):_____
Signature of witness:_____Date:_____

APPENDIX B: HOUSEHOLD SURVEY

Name:_____ Date: _____

1. **Education level:**(*Check all that apply*.)

a.____ High school diploma b. ____ GED c. ____ Some college
d. ____ College degree (record highest degree) e. ____ Trade or technical college
f. ____ FIND Work / STEP g. ____ Project Independence h.____ Nutrition classes (i.e. EFNEP, FNP) (list): _____ i. ____ Other training programs:_____

2. Are you currently attending any school or training programs? ____ Yes ____ No

2a. What? _____ 2b. How many hours? _____

3. Are you currently working? ____ Yes ____ No
3a. Where/ What type of job? _____
3b. How many hours per week? _____
3c. What is your hourly wage? Or weekly salary? _____
3d. What benefits are available at your job? _____
_____

4. **Marital status**:
a. ____ Married b. ____ Single, living with parents/ relatives _____
c. ____ Single, living alone d. ____ Single, living with man
e. ____ Divorced, living alone f. ____ Divorced, living with man g. ____Widowed

5. **How many children do you have?** _____
a. Ages of children: _____

6. **Persons living in the household**: (how many)
a. ____ own children b. ____ other children c. ____ Mother
d. ____ Father e. ____ siblings f. ____ Other relative(s)
g. ____ Female friend h. ____ Male friend i. ____ Other

Medical Insurance and Care:

7. Do you have medical insurance? ___ Yes ____ No
a. Government provided: Medicaid? ___ Yes ____ No Medicare?___Yes ___No
b. Is medical insurance available through your employer? ____ Yes ____ No
c. Does your employer pay all, a portion of, or none of your medical insurance?
d. How much do you pay for medical coverage? _____

Age:_____ Race/ethnicity: Black
White
Hispanic
Asian
Other

8. Do your children have medical insurance? ___ Yes ___ No
   a. Government provided: LaChip ____ Yes ____ No
   b. Is medical insurance available through your employer for your children? __ Yes __ No
   c. Does your employer pay all, a portion of, or none of your children's health insurance?

9. Are you able to get the medical care that you need? ___ Yes ___ No
   a. If not, why not? _____

10. Are your children able to get the medical care they need? ___ Yes ____ No
   a. If not, why not? _____

11. Compared with other people your age, how would you rate your overall physical health at the present (circle one)

poor	fair	good	excellent	don't know
(1)	(2)	(3)	(4)	(5)

12. Compared with other people your age, how would you rate your overall physical health over the past five years (circle one)

poor	fair	good	excellent	don't know
(1)	(2)	(3)	(4)	(5)

13. Compared with other people your age, how would you rate your overall mental health atthe present (circle one)

poor	fair	good	excellent	don't know
(1)	(2)	(3)	(4)	(5)

14. Compared with other people your age, how would you rate your overall mental healthover the past five years (circle one)

poor	fair	good	excellent	don't know
(1)	(2)	(3)	(4)	(5)

15. When was the last time you visited a physician? _____
   a. Did you go to the physician's office or to the emergency room? _____

16. When was the last time you visited a dentist? _____
   a. Was it a routine visit or did you go in on an emergency basis? _____

17. Have you ever had a PAP smear? _____ a. Do you have them regularly? _____ b. When was yourlast PAP smear? _____ c. Results? _____ d. How did you pay for the PAP smear? _____

18. Have you ever had a mammogram? _____ a. Do you have them regularly? _____b. When was your last mammogram? _____ c. Results? _____ d. How did you pay forthe mammogram? _____

19. Has a doctor ever told you that you have:

a) Heart disease _____
b) High cholesterol _____
c) High blood pressure _____
d) Diabetes _____
e) Fluid Retention _____
f) A problem weighing too much _____
g) Anemia _____
h) Cancer _____
i) Arthritis _____
j) Osteoporosis _____
k) Depression _____

20) Are you taking any kind of medicines?

List: _____

21. **Sources of Income**: (*record amount and frequency)*

a. Wages and salaries (self) _____
b. Wages and salaries (other household members) _____
c. Tips, commission, overtime _____
d. Odd jobs (doing nails, hair, babysitting, transportation, etc.) _____
e. Social Security _____
f. SSI _____
g. Child support _____
h. Unemployment Compensation _____
i. Workmen's Compensation _____
j. Veteran's benefits _____
k. Regular gifts from family or friends to assist with bills or expenses _____
l. Other income sources _____

22. **Government Benefits as Sources of Income**

a. TANF _____
b. EITC (Earned Income Tax Credit) _____
c. Child care assistance _____
d. Housing assistance _____
e. Energy/Fuel Assistance _____
f. Transportation Assistance _____
g. Educational grants or loans _____
h. Other _____

23. **Expenses**

a. Rent or house payment _____
b. Electric/ Gas _____
c. Sewer/ Water/ Trash collection _____
d. Cable _____

e. Telephone _____
f. Cell phone/ pager _____
g. Credit card payments _____
h. Loan payments _____
i. Rent-to-own payments _____
j. Life or burial insurance _____

24. Does anyone help you pay your monthly expenses? _____ Yes _____ No
a. Who helps? _____
b. How often? _____
c. How much? _____
d. What do they help pay for? _____

25. To what extent is your income sufficient to live on?
_____
_____

26. If you do not have enough money to pay your bills, what are some things that you will do without? _____ What do you do to stretch your money? _____
_____

27. **Transportation**:
a. Do you have a valid driver's license? ____ Yes ____ No
b. Do you own a car? ____ Yes ____ No
c. If not, do you have reliable transportation? ____ Yes ____ No

28. **Feelings about Employment:** (If applicable)
a. Are you satisfied with your current job? ____ Yes ____ No

b. What do you like most about your job? _____

_____

_____

c. Is there a job that you would rather be doing? What? _____

_____

_____

d. Is there something that makes it difficult for you to keep your job? If so, what? _____

_____

_____

APPENDIX C: FOCUS GROUP DISCUSSION QUESTIONS

1. What does the word "healthy" mean to you?

2. What do you think the relationship is between what you eat and your health?

3. What would you consider to be a healthy meal? Why?

4. Do you know what the recommendations for a healthy diet are? Are you familiar with MyPyramid?

5. MyPyramid recommends that men/women of your age eat 2 ½ cups of vegetables a day and an assortment of types of vegetables (e.g. dark green, orange, starchy, and other) each week. Are you able to eat this amount of vegetables? What allows you to eat them (probe: good taste, availability)? What stops you from eating them (probe: time, cost, poor taste, don't know how to prepare)?

6. MyPyramid recommends that men/women of your age eat 2 cups of fruit a day. Are you able to eat this amount of fruit? What allows you to eat this amount of fruit (probe: good taste, availability)? What stops you from eating this amount of fruit (probe: time, cost, poor taste, spoilage, don't know how to prepare)?

7. MyPyramid recommends that men/women of your age drink 3 cups of milk or other types of dairy products a day. Are you able to drink/eat this amount of milk or other dairy products? What allows you to drink this amount of milk (probe: good taste, availability)? What stops you from drinking this amount (probe: time, cost, poor taste, lactose intolerance)?

8. MyPyramid recommends that women of your age eat 6 servings of grains, 3 of which are whole grains a day. Are you able to eat this number of servings of grain? What allows you to eat these grains (probe: good taste, availability)? What stops you from eating them (probe: time cost, poor taste, children's tastes, don't know how to prepare, don't know what one is)?

9. We have some menus and recipes here that we've worked out that are low cost and meet the requirements for a healthy diet. Would you mind looking at them and telling us whether you think you would like the meals? Do you think you would be able to prepare them in your home for your family?

10. Is there anything else you would like to talk about regarding diet and health?

APPENDIX D: TWO-WEEK MENUS

Monday 1	**Man**	**Woman**	**Children**	**Total**
Oatmeal	1 cup	.5 cup	1 cup	2 cups
Raisins	2T	2T	2T	6T
Lite margarine spread	1T	2t	4t	4T
Whole Wheat Toast	2 slices	1 slice	2 slices	5 slices
Orange Juice	6 oz	6 oz	12 oz	24 oz
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Sandwich				
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Tuna Salad	1 serving	.5 serving	1 serving	2.5 servings
Potato Salad	1.5 serving	.5 serving	1 serving	3 servings
Carrot sticks	1 cup	1 cup	2 cups	4 cups
Ranch dressing	1T	1T	2T	4T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Cajun Spiced Chicken	1 serving	1 serving	2 servings	4 servings
Green Bean Casserole	1.5 servings	.5 serving	1 serving	3 servings
Sauteed Canned Chickpeas with Onion	1 cup	1 cup	1.5 cup	3.5 cups
Dinner Roll	2	1	2	4
Lite margarine spread	1t	1t	2t	4t
Banana Orange Salad	1 serving	1 serving	1 serving	3 serving
Graham Crackers	4	2	4	10
1% Reduced Fat Milk	8 oz	8 oz	8 oz	24 oz
Tuesday 1	**Man**	**Woman**	**Children**	**Total**
Bagel	1	1	1	3
Cream Cheese, reduced fat	1 oz	1 oz	1 oz	3 oz
Banana	1	1	2	4
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Whole Wheat Bread	3 slices	2 slices	4 slices	9 slices
Turkey Ham	2 oz	1 oz	3 oz	6 oz
Mayo, light	2 t	1t	2t	5t
Baked Beans	1 cup	.5 cup	1 cup	2 cups
Chicken and Vegetable Stir Fry	1 serving	1 serving	1 serving	3 servings
Steamed Brown Rice	1 cup	.5 cup	1 cup	2.5 cups
Cooked Green Beans	.5 cup	.5 cup	1 cup	2 cups
Lite margarine spread	1t	1t	2t	4t
Dinner Roll	2	1	2	5
Easy Peach Crisp	1 serving	1 serving	2 servings	4 servings

1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Tuna Salad	.5 serving			.5 serving
Cheese	1 oz	1 oz	2 oz	3 oz
Crackers	10	5	10	25
Wednesday 1	**Man**	**Woman**	**Children**	**Total**
Whole Grain Cereal	1 cup	1 cup	2 cups	4 cups
Banana	1	1	2	4
Orange Juice	6 oz	6 oz	12 oz	24 oz
Whole Wheat Toast	2 slices	1 slice	2 slices	5 slices
Jam	1T	1T	2T	4T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Sandwich				
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Ham	3 oz	2 oz	4 oz	9 oz
Processed cheese, sliced	1 oz	1 oz	2 oz	4 oz
Mayo, light	2t	1t	2t	5t
Romaine Lettuce	1 leaf	1 leaf	2 leaves	4 leaves
Peach Crisp (leftover)	1 serving	1 serving	2 servings	4 servings
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Chicken Alfredo with Vegetables	2 servings	1.5 servings	2 servings	4.5 servings
Cooked Carrots	.5 cup	.5 cup	1 cup	2 cups
Dinner Roll	2	1	2	5
Lite margarine spread	1t	1t	2t	4t
Yogurt	1 cup	1 cup	2 cups	4 cups
Thursday 1	**Man**	**Woman**	**Children**	**Total**
Whole Grain Cereal	1 cup	1 cup	2 cups	4 cups
Whole Wheat Toast	2 slices	1 slice	2 slices	4 slices
Lite margarine spread	2t	1t	2t	5t
Jam	1T	1T	2T	4T
Orange Juice	6 oz	6 oz	12 oz	24 oz
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Peanut butter and Raisin Sandwich				
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Peanut butter	4T	2T	4T	10T
Raisins	2T	1T	2T	5T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Apple	1	1	2	4

Beef Pot Roast with Vegetables	1 serving	1 serving	1 serving	3 servings
Brown Rice	1 cup	.5 cup	1 cup	2.5 cups
Green Peas	1 cup	.5 cup	1 cup	2.5 cups
Dinner Roll	2	1	2	5
Lite margarine spread	1t	1t	2t	4t
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Banana	1	1	2	4
Oatmeal Raisin Cookies	3	2	4	9
Friday 1	**Man**	**Woman**	**Children**	**Total**
Omelet				
Eggs	2	2	2	6
Onion	1t	1t	1t	3t
Processed cheese	1 oz	1 oz	1 oz	3 oz
Whole Wheat Toast	2 slices	1 slice	2 slices	5 slices
Lite margarine spread	1T	1t	2t	2T
Orange Juice	6 oz	6 oz	12 oz	24 oz
1% Reduced Fat Milk	4 oz	4 oz	8 oz	16 oz
Black Bean and Corn Burritos				
Black Beans	1 cup	1 cup	1.5 cups	3.5 cups
Corn	1.625 cups	.5 cup	2 cups	4.125 cups
Whole Wheat Tortillas	2	1	2	5
Romaine Salad				
Romaine Lettuce	2 cups	2 cups	2 cups	6 cups
Carrots	.25 cups	.25 cups	.5 cups	1 cup
Fat-free Italian Dressing	1T	1T	2T	4T
Chili & Rice	1 serving	.75 serving	1 serving	2.75 servings
Saltine Crackers	10	5	5	20
Sauteed Frozen Spinach with garlic and lemon	1 cup	1 cup	1 cup	3 cups
Yogurt	1 cup	1 cup	2 cups	4 cups
Peanut Butter	2T	2T	4T	8T
Celery	.5 cups	.5 cups	1 cup	2 cups
1% Reduced Fat Milk	8 oz	8 oz	16 oz	24 oz
Saturday 1	**Man**	**Woman**	**Children**	**Total**
Whole Grain Cereal	1.5 cups	1 cup	2 cups	4.5 cups
Whole Wheat Toast	2 slices	1 slice	2 slices	5 slices
Lite margarine spread	2t	1t	2t	5t
Jam	1T	1T	2T	4T
Pineapple, canned	.5 cup	.5 cup	.75 cup	1.75 cups

1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Chili and Rice (leftover)	1 serving	.5 serving	1 serving	2.5 servings
Saltine Crackers	10	5	5	20
Romaine Salad				
Romaine Lettuce	1 cups	1 cups	2 cups	4 cups
Carrots	.25 cup	.25 cup	.5 cup	1 cup
Fat-free Ranch Dressing	1T	1T	2T	4T
Grapes	1 cup	1 cup	1 cup	3 cups
Mama's Meatloaf	1 serving	1 serving	1 serving	3 servings
Mashed Potatoes	1 cup	1 cup	1 cup	3 cups
Broccoli	1 cup	1 cup	1 cup	3 cups
Cheese, Processed (melted)	2 oz	2 oz	4 oz	8 oz
Dinner Roll	2	1	2	5
Lite margarine spread	1T	1t	2t	6t
Yogurt, low fat	1 cup	1 cup	1 cup	3 cups
Sunday 1	**Man**	**Woman**	**Children**	**Total**
Oatmeal	1 cup	1 cup	1 cup	3 cups
Raisins	2T	2T	2T	6T
Whole Wheat Toast	2 slices	1 slice	2 slices	5 slices
Lite margarine spread	2t	1t	2t	5t
Banana	1	1	2	4
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Mama's Meatloaf Sandwich	1 serving	1 serving	1 serving	3 servings
Whole Wheat Bread	2 slices	2 slices	4 slices	8 slices
Apple and Carrot Salad	2 servings	1.5 serving	2 servings	5.5 servings
1% Reduced Fat milk	8 oz	8 oz	16 oz	32 oz
Red Beans	1.75 servings	1 serving	2 servings	4.75 servings
Cornbread	2 servings	2 servings	2 servings	6 servings
Romaine Salad				
Romaine Lettuce	2 cups	2 cups	2 cups	6 cups
Carrots	.25 cups	.25 cups	.25 cups	.75 cups
Fat-free Italian Dressing	1T	1T	2T	4T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Grapes	1 cup	1 cup	1 cup	3 cups
Monday 2	**Man**	**Woman**	**Children**	**Total**
Banana Pancakes	4 servings	3 servings	5 servings	12 servings
Light Syrup	2T	2T	2T	6T

Orange Juice	6 oz	6 oz	12 oz	24 oz
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Sandwich				
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Turkey Ham	3 oz	2 oz	6 oz	11 oz
Processed cheese, sliced	1 oz		2 oz	3 oz
Mayo, light	1t	1t	2t	4t
Vegetable Medley	2 serving	1 serving	2 servings	4 servings
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Mardi Gras Chicken	2 servings	1 serving	2 servings	5 servings
Garden Stuffed Potatoes	1 serving	1 serving	1 serving	3 servings
Green Peas	.5 cup	.5 cup	1 cup	2 cups
Dinner Roll	1	1	2	4
Lite margarine spread	2t	1t	2t	5t
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Popcorn	1.5 cups	1.5 cups	3 cups	6 cups
Tuesday 2	**Man**	**Woman**	**Children**	**Total**
Grits	1 cup	1 cup	2 cups	4 cups
Whole Wheat Toast	2 slices	2 slices	4 slices	8 slices
Lite margarine spread	1T	2t	4t	7t
Orange Juice	6 oz	6 oz	12 oz	24 oz
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Tuna Salad	1.5 servings	1 serving	1 serving	3.5 serving
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Romaine Salad				
Romaine Lettuce	2 cups	2 cups	2 cups	6 cups
Carrots	.25 cup	.25 cup	.5 cup	1 cup
Fat-free Ranch Dressing	1T	1T	2T	4T
Yogurt	1 cup	1 cup	2 cups	4 cups
Black Bean and Corn Soup	1 serving	1 serving	1 serving	3 servings
Chicken Quesadillas	2 servings	1 serving	2 servings	5 servings
Apple	1	1	2	4
Oatmeal Raisin Cookies	3	1	2	5
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Wednesday 2	**Man**	**Woman**	**Children**	**Total**
Bagel	1	1	1	3
Cream Cheese, Reduced Fat	1 oz	1 oz	1 oz	3 oz

Orange Juice	6 oz	6 oz	12 oz	24 oz
Grapes	1 cup	1 cup	1 cup	3 cups
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Whole Wheat Bread	2 slices			2 slices
Turkey Ham	3 oz			3 oz
Processed Cheese, sliced	1 oz			1 oz
Black Bean and Corn Soup (leftover)	1 serving	1.5 servings	2.5 servings	5 servings
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Breaded Chicken	1 serving	1 serving	1 serving	3 servings
Vegetable Pasta Casserole	1 serving	.5 serving	1 serving	2.5 servings
Green Peas, frozen	1 cup	.5 cup	1 cup	2.5 cups
Bread Pudding	1 serving	.5 serving	1 serving	2.5 servings
Canned Peaches	.5 cup	.5 cup	.5 cup	1.5 cups
Yogurt, low-fat	1 cup	1 cup	1 cup	3 cups
Thursday 2	**Man**	**Woman**	**Children**	**Total**
Scrambled Eggs	2	1	2	5
Toast, Whole Wheat	2 slices	2 slices	4 slices	8 slices
Lite margarine spread	2t	1t	2t	5t
Jelly	2T	1T	2T	5T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Vegetable Pasta Casserole (leftover)	1 serving	1 serving	1.5 servings	3.5 servings
Carrot sticks	.5 cup	.5 cup	1 cup	2 cups
Fat-Free Ranch Dressing	1T	1T	2T	4T
Grapes	1 cup	1 cup	1 cup	3 cups
Ham and Black-eyed Pea Soup with Collard Greens	1 serving	1 serving	1.5 servings	3.5 servings
Cornbread (2x2 in square)	2	2	2	6
Lite margarine spread	2t	1t	2t	5t
Apple Cake	1 serving	.5 serving	1 serving	2.5 servings
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Oatmeal Raisin Cookies	3	1	4	8
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Friday 2	**Man**	**Woman**	**Children**	**Total**
Raisin Bran	1 cup	1 cup	2 cups	4 cups
Whole Wheat Toast	2 slices	2 slices	2 slices	6 slices
Lite margarine spread	2t	1t	2t	5t
Orange Juice	6 oz	6 oz	12 oz	24 oz

1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Peanut butter and Raisin Sandwich				
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Peanut butter	4T	2T	4T	10T
Raisin	2T	2T	4T	8T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Apple Cake (leftover)	1 serving	.5 serving	1 serving	2.5 servings
Cajun Jambalaya	2 servings	1 serving	1 serving	4 servings
Corn	1 cup	.5 cup	2 cups	3.5 cups
Dinner roll	1	1	2	4
Lite margarine spread	1t	1t	2t	4t
Fruit Cocktail, canned	1 cup	1 cup	1.5 cups	3.5 cups
1% Reduced Fat Milk	8 oz	4 oz	8 oz	20 oz
Saturday 2	**Man**	**Woman**	**Children**	**Total**
Raisin Bran	1 cup	1 cup	2 cups	4 cups
Toast, Whole Wheat	1 slice	1 slice	2 slices	4 slices
Lite margarine spread	1t	1t	2t	4t
Orange Juice	6 oz	6 oz	12 oz	24 oz
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Tuna salad	1 serving	1 serving	1.5 serving	3.5 servings
Whole Wheat Bread	4 slices	2 slices	4 slices	10 slices
Garden Coleslaw	1 serving	1 serving	1 serving	3 servings
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Kidney Bean Salad	.5 cup	.5 cup	1.5 cups	2.5 cups
Vegetable Beef Soup	2 servings	1.5 servings	2 servings	5.5 servings
Cornbread	2 servings	2 servings	2 servings	6 servings
Creamed Spinach	1 serving	1 serving	1 serving	3 servings
Grapes	.5 cup	.5 cup	1 cup	2 cups
Apple	1	1	2	4
Peanut butter	2T	2T	4T	8T
Saltine Crackers	10	5	5	20
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Sunday 2	**Man**	**Woman**	**Children**	**Total**
French toast	4 servings	3 servings	6 servings	13 servings
Syrup	2T	1T	2T	6T
Orange Juice	6 oz	6 oz	12 oz	24 oz
Pears, canned	.5 cup	.5 cup	1 cup	2 cups

1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Vegetable Beef Soup (leftover)	2 servings	1.5 servings	2 servings	5.5 servings
Saltine Crackers	10	5	5	20
Romaine Salad				
Romaine Lettuce	2 cups	2 cups	2 cups	6 cups
Carrots	.25 cup	.25 cup	.5 cup	1 cup
Garbanzo beans	.5 cup	.5 cup	1 cup	2 cups
Fat-free Ranch Dressing	1T	1T	2T	4T
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Oven Fried Pork Chops	1 serving	1 serving	2 servings	4 servings
Broccoli, Rice, and Cheese Casserole	2 servings	1 serving	1 serving	4 servings
Smothered Cabbage	1 serving	1 serving	1 serving	3 servings
Dinner Roll	1	1	2	4
Lite margarine spread	1t	1t	2t	4t
1% Reduced Fat Milk	8 oz	8 oz	16 oz	32 oz
Apple Cake (leftover)	1 serving		1 serving	2 servings

APPENDIX E: RECIPES

Cajun Spiced Chicken
Makes 4 servings
Modified from Allrecipes.com

1/2 cup all-purpose flour
1 Tablespoon salt
1/8 teaspoon cayenne pepper
1 cup 1% milk
4 chicken leg quarters

1 Preheat oven to 350°F.
2 In a shallow plate or bowl, mix together the flour, salt and cayenne pepper. Pour milk for into a separate bowl.
3 Remove skin and cut fat from the chicken. Dip the chicken into the milk. Dredge the chicken through the flour mixture, coating evenly on both sides and around the edges.
4 Place the chicken in a lightly greased 9x13 inch baking dish and bake in the preheated oven for 35 minutes.

Green Bean Casserole
Makes 3 servings
Modified from Cookinglight.com
---
1 15.5oz cans green beans, drained and Rinsed
1/3 cup 1% milk
1/2 (10.75 ounce) can reduced fat cream of mushroom soup
¾ cup bread crumbs
1 t lite margarine spread, melted
1 egg, lightly beaten
salt and pepper to taste

1 Preheat oven to 350°F.
2 In a medium casserole dish mix together green beans, milk, and cream of mushroom soup.
3 Combine bread crumbs, lite margarine spread, and egg white in a bowl; stir well, and sprinkle over green bean mixture.
4 Bake for 30 minutes in the preheated oven, until heated through and bubbly. Season with salt and pepper to taste.

Garden Coleslaw
Makes 6 servings
Modified from Cookinglight.com

½ cup Italian dressing
1 tablespoon sugar
1/2 teaspoon salt
juice of 1 lemon
4 cups shredded cabbage
1 cup shredded carrots
1/3 cup chopped green bell pepper
1/3 cup chopped green onions
salt and pepper to taste

1 In a mixing bowl, combine first 4 ingredients. Stir until blended.
2 Add cabbage, carrots, bell pepper, and green onion.
3 Season with salt and pepper.
4 Toss, cover, and refrigerate.

Tuna Salad
Makes 4 servings
Modified from Allrecipes.com

---

3 eggs
2 (6 ounce) cans tuna, drained and flaked
3 tablespoons reduced fat mayonnaise
2 stalks of celery chopped
2 tablespoons sweet pickle relish
1 pinch ground black pepper

1 Place eggs in a saucepan and cover with cold water. Bring water to a boil and immediately remove from heat. Cover and let eggs stand in hot water for 10 to 12 minutes. Remove from hot water, cool, peel and chop.
2 In a medium bowl, mix together tuna and mayonnaise. Mix in egg, celery, relish, and black pepper.

Chicken and Vegetable Stir-Fry
Makes 3 servings
Modified from Mealtime.org

1/3 cup water
2 teaspoon cornstarch
2 tbsp reduced-sodium soy sauce
2 tablespoons canola oil
1 small onion, sliced
2 celery stalks, sliced
1 carrot, sliced
1 green bell pepper, sliced
3 chicken leg quarters, skinned, cooked, chopped
2 green onions, roots trimmed, sliced

1 Combine the water, cornstarch and soy sauce in a bowl; set aside.
2 Place a large pan over a high heat. Add the oil and heat until smoking. Add the onions, mushrooms, celery, carrots and pepper. Stir-fry for 2 to 3 minutes or until the vegetables are barely tender. Add the chicken and stir-fry another minute to heat through.
3 Add the soy sauce mixture and stir until the sauce is simmering. Cover and cook for 30 seconds. Serve immediately; sprinkle each serving with green onion, if desired.

Peach Crisp
Makes 8 servings
Modified from Kidsacookin.ksu.edu

---

2 cans sliced peaches lite, drained
1/3 cup lite margarine spread
1/3 cup flour
1 cup uncooked oats, old fashioned
1/2 cup brown sugar
1/2 teaspoon salt
1 teaspoon cinnamon

1 Preheat the oven to 325°F.
2 Spray an 8-inch square glass baking dish with cooking spray and arrange peaches on bottom.
3 Melt lite margarine spread in a small glass dish in microwave for 45 seconds.
4 Mix flour, oats, brown sugar, salt, and cinnamon in a bowl. Add melted lite margarine spread and mix until crumbly. Sprinkle mixture over peaches.
5 Bake in preheated oven for 22 - 25 minutes, or until golden brown and bubbly.

Chicken Alfredo with Vegetables
Makes 5 servings
Modified from Recipestoday.com
---

12 ounces fettuccine
4 ounces reduced-fat cream cheese
2 tablespoons lite margarine spread
1/2 cup 1% milk
1/2 teaspoon garlic powder
Salt and pepper to taste
4 chicken leg quarters, skinned, cooked, and chopped
1 16 oz package frozen chopped broccoli, thawed, drained
2 small zucchini, cut into strips
½ cup chopped green bell pepper
16 oz frozen green peas

1 Cook fettuccine according to package directions. Do not overcook. Drain.
2 While the pasta cooks, melt the cream cheese and lite margarine spread in a skillet until smooth. Stir in the milk, garlic powder, salt, and pepper. Cook about 3 minutes or until slightly thickened, stirring constantly. Add the chicken, broccoli, zucchini, red pepper and mushrooms. Cook about 5 minutes, or until vegetables are crisptender.
3 To serve, pour sauce over fettuccine.

Pot Roast
Makes 4 servings—with leftover meat
Modified from Cookinglight.com
---

2 teaspoons canola oil
24 oz boneless chuck roast, trimmed
1 tablespoon salt
1 tablespoon black pepper
2 cups coarsely chopped onion
2 cups water
1/4 cup ketchup
1 14.5 oz can diced tomatoes, undrained
1 1/4 pounds small red potatoes
1 pound carrots, peeled and cut into 1-inch pieces

1 Preheat oven to 300°.
2 Heat oil in a large dutch oven over medium-high heat. Sprinkle roast with salt and pepper. Add roast to pan, browning on all sides (about 8 minutes). Remove from pan.
3 Add onion to pan; sauté 8 minutes or until browned. Return roast to pan. Combine water and ketchup; pour over roast. Add tomato; bring to a simmer.
4 Cover and bake at 300° for 2 1/2 hours or until tender. Add potatoes and carrots; cover and bake an additional 30 minutes or until vegetables are tender.

Sautéed Yellow Squash
Makes 4 servings
Modified from Cdc.gov
---

2 cups yellow squash, sliced
cooking spray
1 small onion, minced
¼ tsp salt
¼ tsp pepper

1 Spray sauté pan with cooking spray. Add onions and sauté until golden brown.
2 Add squash and cook until tender, about 10 minutes, stirring carefully to keep squash from sticking.
3 Season with salt and pepper and serve.

Chili and rice
Makes 6 servings
Modified from Cooks.com
---

1 lb ground beef
1 green pepper, chopped
1/2 onion, chopped
1 15.5oz can kidney beans, drained and Rinsed
1 15oz can tomato sauce
6 oz tomato paste
2 cloves of garlic, minced
salt and pepper to taste
chili powder to taste
2 cups brown rice, cooked

1 In a skillet over medium heat, brown beef with onions and peppers. Drain.
2 Add remaining ingredients (kidney beans through chili powder) and simmer for 10 minutes.

Mama's Meat Loaf
Makes 6 servings
Modified from Cookinglight.com
---

1 small onion, chopped
1 green bell pepper, chopped
1 teaspoon pepper
3/4 teaspoon salt
2 garlic cloves, minced
1 egg, lightly beaten
1 slice wheat bread, torn into small pieces
1 1/2 pounds ground beef
Cooking spray
1/3 ketchup

1 Preheat oven to 350°.
2 Combine first 7 ingredients in a large bowl, tossing to moisten bread. Crumble meat over onion mixture, and stir just until blended. Pack mixture into a 9 x 5-inch loaf pan coated with cooking spray. Spread ketchup over top of loaf.
3 Bake at 350° for 1 hour. Let loaf stand in pan 10 minutes.
4 Remove meat loaf from pan; cut loaf into 6 slices.

Creamed Spinach
Makes 6 servings
Modified from Kraftfoods.com

---

4 oz reduced fat cream cheese, softened
1/4 cup 1% milk
½ teaspoon salt
1/2 teaspoon black pepper
1 16 oz canned spinach

1 Preheat oven to 350°F.
2 Mix first 4 ingredients in large bowl. Stir in spinach. Spoon into greased 1-quart baking dish.
3 Bake in preheated oven for 25 to 30 minutes or until heated through.

Oatmeal Raisin Cookies
Makes 48 cookies
Modified from Allrecipes.com

3/4 cup lite margarine spread, softened
3/4 cup white sugar
3/4 cup packed light brown sugar
2 eggs
1 teaspoon vanilla extract
1 1/4 cups all-purpose flour
1 teaspoon baking soda
¾ teaspoon ground cinnamon
½ teaspoon salt
2 ¾ cups rolled oats
1 cup raisins

1 Preheat oven to 375°F.
2 In large bowl, cream together lite margarine spread, sugar, and brown sugar until smooth. Beat in the eggs and vanilla until fluffy. Stir together flour, baking soda, cinnamon, and salt. Gradually beat into lite margarine spread mixture. Stir in oats and raisins. Drop by teaspoonfuls onto ungreased cookie sheets.
3 Bake 8 to 10 minutes in the preheated oven, or until golden brown. Cool slightly, remove from sheet to wire rack. Cool completely.

Banana Pancakes
Makes 12 pancakes
Modified from Allrecipes.com

---

1 cup all-purpose flour
1 tablespoon white sugar
2 teaspoons baking powder
1/4 teaspoon salt
1 egg beaten
1 cup 1% milk
2 tablespoons canola oil
2 ripe bananas, mashed

1 Combine flour, sugar, baking powder and salt. In a separate bowl, mix together egg, milk, oil and bananas.
2 Stir flour mixture into banana mixture; batter will be slightly lumpy.
3 Heat a griddle or frying pan sprayed with cooking spray over medium high heat. Pour or scoop the batter onto the griddle, using approximately 1/4 cup for each

pancake. Cook until pancakes are golden brown on both sides; serve hot.

Breaded Chicken
Makes 3 servings
Modified from Recipestoday.com
---
3 chicken leg quarters
salt and pepper
2T lite margarine spread, melted
1 cup breadcrumbs

1 Preheat oven to 350°F.
2 Combine the melted lite margarine spread and breadcrumbs. Set aside.
3 Remove skin from the chicken. Salt and pepper the chicken and place in a 13x9-inch baking dish. Spread the breadcrumb mixture over the top.
4 Bake in preheated oven for about 30 minutes.

Vegetable Medley
Makes 4 servings
Modified from Kraftfoods.com

1/2 cup fat-free Italian dressing, divided
1-1/2 cups thinly sliced carrots
1 16 oz package frozen chopped broccoli
1 head of cauliflower, chopped
1/2 cup processed cheese, chopped

1 Bring 1/4 cup of the dressing and carrots to boil in medium saucepan. Reduce heat to low; cover and simmer 4 minutes
2 Stir in broccoli and cauliflower; cover and continue to simmer 4 minutes or until crisp-tender.
3 Add remaining dressing and cheese with hot vegetables in saucepan.

Family Style Red Beans and Rice
Makes 5 servings
Modified from Delmonte.com
---
2 cans (14.5 oz each) stewed tomatoes, undrained
2 cans (14.5 oz each) kidney beans, drained and rinsed
2 cups brown rice, uncooked
3 ½ cups water
2 tbsp chili powder

1 Stir all ingredients together in 2 qt. heavy bottomed saucepan; bring to boil.
2 Cover and reduce heat; simmer 15 minutes.
3 Let stand, covered, 5 minutes; uncover and stir before serving.

Apple and Carrot Salad
Makes 6 servings
Modified from Cdc.gov

---

1 cup shredded carrot
4 apples, cored and diced
1 tablespoon lemon juice
1/2 cup raisins
1/3 cup low-fat mayonnaise

1 Combine all ingredients. Chill thoroughly.

Mardi Gras Chicken
Makes 5 servings
Modified from Recipestoday.com

---

5 chicken leg quarters
2 cups fat-free Italian dressing
3 tablespoons salt
1 green bell pepper, cut into strips
1 yellow bell pepper, cut into strips
1 red onion, sliced into rings
2 tablespoons lite margarine spread

1 Remove skin from chicken. Put the chicken in a baking pan.
2 Mix the dressing and salt together and pour over chicken. Marinate in the refrigerator at least 4 hours, or overnight.
3 Preheat oven to 350°F.
4 Remove the chicken from the marinade. Discard the marinade. Place the chicken in a 13x9-inch baking dish. Bake in preheated oven for about 30 minutes.
5 While they are cooking, sauté the peppers and onion in the 2 tablespoons lite margarine spread until crisp-tender. Pour over chicken and serve immediately.

Garden Stuffed Baked Potatoes
Makes 3 servings
Modified from Allrecipes.com

---

3 large potatoes
2 tablespoons lite margarine spread
1 small onion, chopped
1/2 cup fat-free ranch salad dressing
1 16 oz package chopped frozen broccoli, thawed drained
1 tablespoon canola oil
salt and pepper to taste

1 Preheat oven to 425°F.
2 Pierce the skin of the potatoes with a fork. Microwave pierced potatoes on HIGH for 12 minutes. Place partially baked potatoes in the preheated oven and bake for 15 minutes.
3 Slice off potato tops, scoop out the bulk of the interior of the potato being careful to leave the potato skins intact. In a medium bowl, mash the removed potato interior.
4 Heat a small skillet over medium heat, stir in lite margarine spread. Sauté onions in the skillet until tender, about 5 minutes.
5 Combine onions, ranch dressing, and broccoli with the mashed potato. Brush the

outside of the potato skins with oil. Spoon potato mixture into the skins. Arrange stuffed potatoes on a cookie sheet.

6 Bake potatoes for 15 minutes in the preheated oven, or until heated through. Season with salt and pepper.

Black Bean and Corn Soup
Makes 8 servings
Modified from Cdc.gov

---

1 14.5oz can black beans, drained and Rinsed
1 14.5oz can stewed tomatoes, Undrained
1 14.5oz can diced tomatoes, undrained
1 15oz can whole kernel corn, drained and rinsed
4 green onions, sliced
1 small green pepper, sliced
4 ribs celery diced
3 tablespoons chili powder
1 teaspoon ground cumin
1 garlic clove, minced

1 Combine all ingredients in slow cooker. Cover and cook on HIGH for 5-6 hours.

Chicken Quesadillas
Makes 5 servings
Modified from Allrecipes.com

---

5 (12 inch) flour tortilla
2 cup processed cheese, chopped
1 15oz can whole kernel corn, drained rinsed
1 diced tomato
3 chopped green onions
2 chicken leg quarters, skinned, cooked, chopped

1 Place a large skillet over medium heat. Spray with cooking spray. Place the tortilla in the skillet allow it to heat for 1 minute.

2 Beginning at the center of the tortilla, evenly spread the cheese until half tortilla's surface is covered. Top the cheese with corn, tomatoes, green onion and chicken. Fold the tortilla in half. When the cheese is completely melted, carefully slide the tortilla from the pan onto a cutting board. Slice into 4 wedges and serve warm.

Vegetable Pasta Casserole
Makes 8 servings
Modified from Allrecipes.com

---

1 tablespoon lite margarine spread
1 onion, chopped
1 clove garlic, minced
1/4 cup all-purpose flour
4 cups 1% milk
1/2 cup mozzarella cheese, grated
16 ounces whole wheat pasta, cooked
1 16 oz package frozen chopped broccoli, thawed, drained
salt and pepper to taste
1/3 cup bread crumbs
2 tablespoons cheese, grated
cooking spray

1 Preheat oven to 350°F.
2 Melt lite margarine spread in a medium saucepan over medium-high heat. Sauté onions and garlic for 1 to 2 minutes. Stir in flour and milk; cook 5 minutes, or until mixture coats the back of a spoon. Remove from heat and stir in 1/2 cup cheese, salt and pepper.
3 In a 9x13 inch baking dish combine pasta, vegetables, milk mixture. Sprinkle with bread crumbs, and 2 tablespoons cheese. Coat with cooking spray.
4 Bake in preheated oven for 30 minutes, or until golden brown.

Bread Pudding
Makes 6 servings
Modified from Lowcountryfoodbank.org
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2 eggs, beaten
2 cup 1% milk
1/2 cup sugar
1 teaspoon cinnamon
1 cup raisins
3 cups of whole wheat bread cubes

1 Preheat oven to 350°F.
2 Add the milk, sugar, cinnamon and raisins to the beaten eggs. Gently stir in bread cubes. Pour into an 8-inch square baking dish that has been sprayed with non-stick cooking spray.
3 Bake 30 minutes or until golden.

Ham and Black-eyed Pea Soup with Collard Greens
Makes 4 servings
Modified from Epicurious.com
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1 medium onion
1 garlic clove
4 ounces cooked ham
2 tablespoons canola oil
1/2 pound collard greens
4 cups water
1 can black-eyed peas, drained, rinsed

1 Chop onion and garlic and cut ham into 1/4-inch dice. In a 3-quart saucepan cook onion, garlic, and ham in oil over moderate heat, stirring occasionally, until onion is pale golden.
2 While onion mixture is cooking, discard stems and center ribs from collards and finely chop leaves. Add collards and water to onion mixture and simmer until collards are tender, about 20 minutes.
3 In a bowl mash half of peas with a fork. Stir mashed and whole peas into soup and simmer 5 minutes. Season soup with salt and pepper.

Apple Cake
Makes 8 servings
Modified from Cookinglight.com

1.5 cups all-purpose flour
1/2 teaspoon salt
1/2 teaspoon baking soda
1/2 teaspoon ground cinnamon
2 cups diced apples
1 cup granulated sugar
1/2 cup applesauce
1/2 teaspoon vanilla extract
2 large eggs
cooking spray

1 Preheat oven to 325°.
2 Lightly spoon flour into dry measuring cups; level with a knife. Combine flour and next 3 ingredients (flour through cinnamon) in a large bowl; stir with a whisk. Add apple; toss gently to combine. Make a well in center of mixture. Combine granulated sugar, applesauce, 1 teaspoon vanilla, and eggs in a bowl; beat with a mixer at medium speed until well-blended. Add to flour mixture. Stir just until moist. Spoon batter into a 13 x 9-inch baking pan coated with cooking spray. Bake at 325° for 55 minutes or until a wooden pick inserted in center comes out clean. Cool completely on a wire rack.

Cajun Jambalaya
Makes 4 servings
Modified from Allrecipes.com
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2 teaspoons canola oil
8 ounces turkey sausage, diced
2 chicken leg quarters, skinned, deboned, and chopped
1 onion, diced
1 green bell pepper, diced
1/2 cup diced celery
2 tablespoons chopped garlic
1/4 teaspoon cayenne pepper
1/2 teaspoon onion powder
salt and ground black pepper to taste
2 cups uncooked brown rice
4 cups water

1 Heat oil in a large pot over medium high heat. Sauté chicken and sausage until lightly browned, about 5 minutes.
2 Stir in onion, bell pepper, celery and garlic. Season with cayenne, onion powder, salt and pepper. Cook 5 minutes, or until onion is tender and translucent.
3 Add rice and stir in water. Bring to a boil, then reduce heat, cover, and simmer 20 minutes, or until rice is tender.

Sautéed Zucchini
Makes 4 servings
Modified from Cdc.gov

Cooking spray
1 chopped cup onion
4 small (6-in/15cm) zucchini, thinly sliced
salt and pepper to taste

1 Heat a large nonstick skillet over medium heat; coat with cooking spray and add onions; cook, stirring until softened.
2 Add zucchini and cook for 5 to 7 minutes or until zucchini is tender-crisp. Season to taste with salt and pepper.

French Toast
Makes 6 servings
Modified from Cookinglight.com
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1 cup 1% milk
2 eggs
2 tablespoons sugar
1/2 teaspoon ground cinnamon
1/2 teaspoon vanilla extract
2 large egg whites
6 slices whole-grain bread
cooking spray
1 teaspoon lite margarine spread, divided

1 Combine milk and next 5 ingredients (through egg whites) in a medium bowl, stirring well with a whisk. Pour milk mixture into shallow dish.
2 Working with 1 bread slice at a time, place bread slice into milk mixture, turning to coat both sides. Let bread stand in milk mixture 2 to 3 minutes. Remove bread slice from milk mixture. Repeat with remaining slices.
3 Heat a large nonstick skillet over medium heat. Coat pan with cooking spray. Melt 1/2 teaspoon lite margarine spread in pan; swirl to coat bottom of pan. Add 3 soaked bread slices; cook 2 minutes on each side or until lightly browned. Repeat procedure with cooking spray, remaining lite margarine spread, and remaining coated bread slices.

Vegetable Beef Soup
Makes 12 servings
Modified from Betterbudgeting.com
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2 pounds cubed beef stew meat
1 can of corn, drained and rinsed
1 can of green beans, drained, rinsed
1 can kidney beans, drained, rinsed
1 can diced tomatoes, undrained
salt and pepper

1 Fill a large 4-5 qt pot half way with water. Add stew meat. Bring to a boil. Reduce heat to low, cover and cook for 2 hours.
2 Add drained and rinsed corn, green beans, and kidney beans. Add entire can of tomatoes. Cook until everything is heated through, about 30 minutes. Season with salt and pepper.

Oven Fried Pork Chops
Makes 4 servings
Modified from Allrecipes.com
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4 thick cut pork chops, fat trimmed
2 tbsp lite margarine spread, melted
2 tablespoons 1% milk
1/4 teaspoon black pepper

1 egg, beaten
1 cup bread crumbs

1 Preheat oven to 425°F.
2 Pour lite margarine spread into a 9x13 inch baking pan.
3 Stir together egg, milk and pepper. Dip pork chops in egg mixture, coat with bread crumbs and place in pan.
4 Bake in preheated oven for 10 minutes. Turn chops and bake for another 10 minutes, or until no pink remains in the meat and juices run clear.

Smothered Cabbage
Makes 4 servings
Modified from 5aday.gov
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1 onion, sliced
1 teaspoon canola oil
1 pound sliced cabbage
1/4 teaspoon salt
1/4 teaspoon black pepper

1 In large sauté pan, heat oil over medium heat. Sauté onion until light brown, about 5-6 minutes. Add sliced cabbage, salt, and black pepper. Stir and cook for 30 minutes.

Potato Salad
Makes 4 servings
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1 medium potatoes
4T Fat Free Italian Dressing
1/4 cup celery, chopped
1/4 cup onions chopped

1 Boil Potatoes, then cut up
2 Combine all ingredients in a large bowl and mix thoroughly

Broccoli, Cheese, and Rice Casserole
Makes 8 servings (1/2 cup each)
Modified from Cookinglight.com
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1 cup cooked brown rice
1/2 cup chopped onion
1/4 cup 1% milk
4 ounces processed cheese, cubed (such as Velveeta Light)
2 tablespoons lite margarine spread, softened
1 16 oz package frozen chopped broccoli, thawed, drained
1 can condensed reduced-fat, reduced sodium cream of mushroom soup

4 Preheat oven to 350°F.
5 Combine all ingredients in a large bowl, and spoon into a 2-quart casserole. Bake at 350° for 45 minutes.