

Evaluation of a printed newsletter tailored to grandparent caregivers in Kansas

by

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Abstract

Millions of U.S. grandparents are responsible for providing parental care, in the absence of the biological parent, for at least one grandchild under the age of 18 years. These caregivers may base their wellness and nutrition practices with their grandchildren on outdated advice. In 2010, Kansas State University Human Nutrition Cooperative Extension Service faculty launched a theory-based newsletter, entitled *Nourishing the Next Generation*, that was mailed six times per year to low-income grandparent caregivers, and posted on a public website (at <http://www.k-state.edu/humannutrition/newsletters/nourishing-the-next-generation/index.html>). Each issue disseminated small amounts of practical, specific, “how-to” nutrition- and wellness-related information that addressed topics identified as being of concern to this population and that used recommended word choice, format, and design principles. After five years of *Nourishing the Next Generation* being in circulation, we surveyed readers who had received it from one to five years in order to assess the impact it had and to highlight its strengths.

This study combined qualitative and quantitative approaches by using written surveys with both open- and closed-ended questions. Two different types of participants who had received the newsletter, grandparent caregivers and community educators, received surveys. A total of 54 valid surveys were returned from the 492 that were sent to grandparent caregivers, while 30 out of 175 community educators completed surveys.

The newsletter was perceived by responding grandparent caregivers to be very effective in improving their awareness, knowledge, motivation, and confidence to follow recommendations about healthy eating and physical activity. Also, reading it led to many self-reported positive changes in various nutrition, physical activity, and other wellness practices among 91 percent of the responding grandparent caregivers and their families. In addition, 70

percent of responding community educators used its contents extensively to disseminate information to wider audiences.

In conclusion, including grandparent caregivers in wellness-related educational programs could be a good approach to target healthy lifestyle practices of both older and younger generations. An appropriately designed newsletter can effectively improve the health of a large number of people, yet has limited costs, and thus, is an excellent public health method.

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Chapter 1 - Introduction

Millions of U.S. grandparents are responsible for providing parental care in the absence of the biological parent for at least one grandchild under the age of 18 years. There are many reasons why. These caregivers may base their wellness and nutrition practices with their grandchildren on outdated advice. Grandparent caregivers struggle not only to balance their emotions, but also to locate community resources that may help with their new role. Many custodial grandparents are financially impoverished and food insecure. Community resources may help grandparents in reducing stress and in coping with their everyday tasks.

Nutrition and wellness education tailored to grandparent caregivers may help families and individuals adopt a more healthful lifestyle and develop stronger family connections. Nutrition and wellness education that motivates the participant to take action towards a healthier lifestyle, with themes that relate to their everyday challenges, and that provides easy to understand information with new ideas to implement, has been shown to be the best avenue for behavior change.

Statement of Purpose

In 2010, Kansas State University Human Nutrition Cooperative Extension Service faculty launched a two-sided, one-page nutrition and wellness newsletter for grandparent caregivers that was based on adult learning theory, the Health Belief Model, and Social Cognitive Theory. Entitled *Nourishing the Next Generation*, it had three articles per newsletter that, over time, addressed nutrition- and wellness-related topics identified as being of concern to this population per Higgins & Murray (2010), including: feeding “picky eaters”, sports nutrition, choosing more healthful packaged and fast foods, increasing physical activity and limiting sedentary time, benefits of family meals, food safety, tips for intergenerational cooking and gardening, quick yet

healthful and inexpensive meal and snack recipes, and nutrition advice for infants, children, and adolescents. With funds from the United States Department of Agriculture's (USDA) Supplemental Nutrition Assistance Program Nutrition Education (SNAP-Ed), a new issue of the full-color printed newsletter was mailed six times a year to all Kansan grandparent-headed households receiving SNAP benefits. Additionally, an electronic version of this nutrition and wellness educational resource was emailed to Kansas State University Cooperative Extension Service Family and Consumer Science district and county agents, to those Cooperative Extension Service educators in other states who expressed interest in receiving it, and to all other community educators who expressed interest in receiving it. It was also posted on a public website (at <http://www.k-state.edu/humannutrition/newsletters/nourishing-the-next-generation/index.html>).

In 2015, after five years of *Nourishing the Next Generation* being in circulation, we evaluated it in order to know the impact it had and to highlight its strengths. Findings from this study will help measure effectiveness of a printed newsletter in promoting wellness (especially nutrition and physical activity) behaviors among grandparent caregivers. Additionally, findings may highlight ways to improve future health education resources tailored to this population.

Research Questions

What were outcomes of receiving a printed newsletter that was tailored to low-income grandparent caregivers about nutrition, physical activity and other wellness-related topics?

How did community educators, especially those working in the Cooperative Extension Service, view the newsletter?

Objectives

1. Evaluate how helpful the printed newsletter was perceived to be by low-income grandparents raising grandchildren and by community educators.
2. Evaluate if the newsletter improved grandparent caregivers' nutrition and physical activity awareness, knowledge, motivation, and confidence to follow wellness recommendations.
3. Demonstrate effectiveness of the newsletter in promoting wellness behaviors (especially more healthful nutrition and physical activity) by low-income grandparents raising their dependent grandchildren.
4. Explore improvements for the newsletter.

Chapter 2 - Literature Review

Grandparents may be classified as caregivers because they offer “day care” to their grandchild(ren), their grandchild(ren) live in the same house, or a court determined that they have custody of their grandchild(ren) (Rubin, 2013). Others have informal, rather than legal, responsibility for their dependent child relative(s).

In the United States, 7.2 million grandparents had grandchildren under 18 years old living with them in 2015, with 2.7 million grandparents being responsible for the basic needs of at least one grandchild (that is, they were grandparent caregivers). Most (1.7 million) grandparent caregivers were women (U.S. Census Bureau, 2015a). Of these grandparent caregivers, more than half a million (21 percent) were living under the poverty level line (U.S. Census Bureau, 2015a).

In Kansas, 47,481 grandparents were living with at least one grandchild under 18 years of age in 2015 and 21,754 (45.8 percent) were responsible for their grandchildren. Of the grandparents responsible for their grandchildren, 7,931 (36.5 percent) had spent five or more years caring for their grandchildren; 3,466 (15.9 percent) had spent three or four years; 5,146 (23.7 percent) had spent one or two years; 2,344 (10.8 percent) had spent between six and eleven months; and 2,867 (13.2 percent) had spent less than six months (U.S. Census Bureau, 2015b).

Reasons that grandparents may be responsible for their grandchild(ren) include parental incarceration, substance abuse, child neglect or abandonment, physical or emotional maltreatment of the child, psychological problems, financial situations, youth, or death; or to prevent adoption by non-family members (Bundy-Fazioli, Fruhauf, & Miller, 2013; Rubin, 2013).

Grandparents who are responsible for their grandchildren face multiple challenges. These may include setting boundaries with their adult children, maintaining/restoring their own and their grandchild(ren)'s emotional well-being, and having mixed emotions about their new role and/or about their adult child (Bundy-Fazioli, Fruhauf, & Miller, 2013). While grandparent caregivers need help with many things, including clothes, school supplies, homework, food, education about alcohol, sex, and drugs, child care, counseling, medications, and transportation, their number one challenge is with finances, as most of them have a low income level and sometimes find it difficult to get public assistance (Rubin, 2013). Many times, the role of a grandparent caregiver is unplanned, stressful, and requires a great amount of time, as reported by Harnett, Dawe, & Russell (2014). In comparing foster caregivers to grandparent caregivers, this team discovered that in their sample of 114 participants, grandparent caregivers had higher scores on the Parenting Stress Inventory and reported less practical and emotional support than they thought was ideal.

The health of the caregiver is crucial in the caring of the grandchild, but Kelley, Whitley, & Campos (2010) found that many grandmothers look for health assistance for their young ones instead of for themselves. Their low-income African American group of women expressed that they had little time to practice preventive health care and that their caregiver grandmothering role sometimes was very stressful and was detrimental to their health. Some postponed retirement because they needed more income to care for their grandchildren and they thought they did not qualify for public assistance.

Knowledge of and access to government programs and community support for grandparent caregivers may help in reducing stress and coping with everyday tasks and, in the long-term, may help with their overall health status (Kelley, Whitley, & Campos, 2010).

Grandparent caregivers often look for community resources such as family, friends, other social support, faith-related activities, counseling, and enjoyable activities to help them, according to Bundy-Fazioli, Fruhauf, & Miller (2013).

Grandparent caregivers may not approach government agencies for support, so as to avoid having them get involved in their family affairs (Harnett, Dawe, & Russell, 2014). Alternatively, eligible grandparent caregivers may not be familiar with many of the monetary and food assistance programs that can assist low-income “grandfamily” households, such as medical assistance, emergency food providers, free and reduced-price school meal programs, the Women, Infants, and Children program, and the Supplemental Nutrition Assistance Program (Schulzinger, 2002). Other reasons why grandparent caregivers may not look for government support are because they may not qualify for it, there are not enough community resources available, or they feel stigma if they are associated with such services, according to Fruhauf, Pevney, & Bundy-Fazioli (2015). These researchers reported that grandparents also find barriers when utilizing support services, such as lack of education about services tailored to grandparent caregiving, lack of sustainable funds, and lack of program flexibility.

Parents and other family members, including grandparents, can serve as the primary role model for children’s eating patterns (Swanson, Studts, Bardach, Bersamin, & Schoenberg, 2011) and grandparents can serve as promoters of healthful eating habits or, when they provide little social support, can influence unhealthful eating (Lindberg et al., 2015). Children learn eating practices through social interactions with their family, peers, and at school, according to a study of children’s environment and socialization contexts by Hemar-Nicolas, Ezan, Gollety, Guichard, & Leroy (2013). This team suggested that when children feel overwhelmed by all of the food and nutrition information they are exposed to (such as through television, school, and

peers), their parents and grandparents are a strong source of credibility, and their role in the children's lives is crucial to shaping their eating patterns. The family relationship can help discourage unhealthful eating desires and discredit food advertisements, although adults' discourse may not always be effective and children may still follow unhealthful eating patterns (Hemar-Nicolas, Ezan, Gollety, Guichard, & Leroy, 2013). Families can also influence their (grand)children's peers, because as a child talks about his or her family's eating pattern with friends at school, he or she can influence the desire of the peers to eat or not eat a specific food item (Hemar-Nicolas, Ezan, Gollety, Guichard, & Leroy, 2013). These authors recommended that policymakers and stakeholders target the family as the core environment of the child because it is where eating skills, routines, and preferences are built, and they noted that grandparents play a significant role in eating patterns and can contribute to healthful food practices for their grandchild.

Grandparents may influence adiposity in their grandchildren. A positive association between a higher body weight in young children and having a grandmother who had ever lived in the home by the time the child was three years old was found by McKinney (2015), whose study participants (n=3,648) were chosen from the U.S. Fragile Families and Child Wellbeing Study. The grandmothers had resided with the mothers and children in half of the cases, with the average length of co-residence being almost one year, but who was the primary caregiver was not measured. Most (84 percent) of the families with a grandmother ever residing with them were black or Hispanic, and for 60 percent, the child's father did not reside with the family when the child was 3 years of age. At the time of their first child's birth, the mothers were, on average, 20 years old, had not completed high school, lived in poverty, and received Women, Infants, and Children nutrition benefits during the baby's first year. The families were studied from 1998 to

2010. After adjustment for multiple covariates, the author found that children at age three years and at age five years who had ever lived in multigenerational homes by age three years had higher obesity and overweight rates compared to those who had not. This association continued in children up to age nine years, when the relationship was diminished. The timing of a co-residence with a grandmother was an important feature of the association, since co-residence of the grandmother during the first year of the child's life was linked to increased odds of becoming overweight or obese at age three years, compared to co-residence at other ages. Also, every additional year of grandmother co-residence up to age three years was associated with increased odds of overweight and obesity when the child was three years old. However, no evidence of unhealthy body weight at age nine years was seen among children who lived with their grandmothers at nine years old, regardless of the length of co-residence. Why the higher body weights for the young children? McKinney (2015) speculated that perhaps overfeeding the young child resulted from desires to bond with the baby through food or, alternatively, from conflict and miscommunication between the generations that triggered disagreements in feeding methods. Other proposed suggestions were that maybe grandmothers indulged their grandchildren's preferences for unhealthful food, or introduced solids and unhealthful foods to babies sooner than currently recommended, or thought that heavier babies are healthier, or were inactive due to health ailments and thus their grandchildren were less physically active, too. Why the grandmothers' influence on their grandchildren's weight status faded over time is also open for speculation. McKinney (2015) concluded that strategies to prevent childhood obesity should address helpful practices that co-resident grandmothers could offer. In another multigenerational study of adiposity in grandchildren, families with overweight children were found to have greater differences in the eating patterns between generations (grandchildren and grandparents) (Kime,

2012). Grandparents of both normal weight and overweight grandchildren in this study were interviewed, but did not necessarily live with their children or grandchildren. Both groups of grandparents had structured patterns, where eating typically occurred at the same times of day with the same types of meals. In contrast, their grandchildren typically had much more unstructured eating patterns and sometimes ate while watching television or in front of the computer, and also ate at more varied times of day. Normal weight grandchildren lived in households with some sort of routine, organization, or structured eating patterns, while the obese grandchildren lived in households with much less structured eating patterns.

Practices and behaviors of grandparents responsible for their grandchildren's nutrition, and how this had changed since their first parenting experience, were reported in a qualitative research study by Higgins & Murray (2010). Grandparents were more conscious about food safety and nutrition in their second parenting experience than in their first, although their knowledge did not always translate into better food selections. Participants with an "on-the-go" lifestyle reported allowing an increased consumption of packaged and "junk" food by their grandchildren. Use of electronics was a concern among grandparents and this too affected their food purchases, stemming from the predisposition of their grandchildren to ask for what they saw advertised on television. Having to feed "picky eaters" now was another challenge. Some grandparents were more relaxed and indulgent with their grandchildren's food preferences and allowed more "junk food" than they had with their own children, while others offered more healthful food choices to their grandchildren than they had the first time they parented.

Providing grandparent caregivers with current and comprehensive nutrition education would be expected to lead them to be healthier older adults and more effective second-time-around parents, and at the same time, help to ensure a healthier future for the children being

cared for by this group, according to Higgins & Murray (2010). Why? The authors suggested that cooking and eating inexpensive yet healthful meals as a family, along with being physically active, such as gardening together, would offer skipped-generation(s) household members daily opportunities to benefit in some areas where they may be experiencing difficulties. They cited research that eating and gardening with children, for example, are associated with frequent and uncontrived chances for relaxed communication and emotional connections with each other; a boost in decision-making skills, confidence and self-esteem; improved math, science, and language skills and general academic achievement of children; decreased likelihood of risky behaviors by the younger generation; and overall more positive familial and other social relationships. Grandparent caregivers in this study reported obtaining their nutrition information about child feeding from outdated sources, primarily from advice passed from the previous generation to them, particularly by their mothers. In addition, they used tradition and doctors' advice from when their first children were born. When asked if they had sought additional sources of nutritional advice for parenting the second time, most described relying primarily on their past parenting experiences, with a few also reporting government programs as their source. Participants in this study reported a preference for printed or video materials that came from trustworthy organizations. Based on their results, and current wellness recommendations, Higgins & Murray (2010) described multiple educational topics that this population would benefit from knowing more about.

Wellness and Nutrition Education

The overall goal of wellness education is to help groups or individuals to make informed decisions regarding their health behaviors by providing information about health-related topics, according to literature reviewed by Rizzoli, Abraham, & Brandi (2014). These authors favor

promoting health behavior changes by providing information, motivation, and skills that match participants' everyday contexts. Educational strategies, such as increasing knowledge, having positive expectations, improving self-efficacy, and prompting people to establish the new behaviors as habitual routines, can help participants change an unhealthy behavior. Behavior change interventions that were the most effective targeted eating behaviors, physical activity, women, and older adults (Rizzoli, Abraham, & Brandi, 2014).

Contento (2011) defines nutrition education as “any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food- and nutrition-related behaviors conducive to health and well-being and delivered through multiple venues” (p. 14).

Providing nutrition education to older adults can present challenges, as discussed by Higgins & Barkley (2004a). Many times, health professionals have misperceptions of the older population due to a lack of understanding of theories of human development and the nature of aging and behavior change in older adults, and of the normal process of aging. To develop a nutrition education program that is effective for older adult learners, possible changes in their ways of processing information, hearing, and mental status have to be taken into account. Health professionals should plan for an open exchange of communication with senior adults, with empathy and respect, treating them as “regular adult people” so as to make educational programs satisfying for them. These authors also reported that professionals need to ascertain—and not just assume that they know—what their older adult clients' perceived learning needs are in order to address relevant nutrition concerns. Furthermore, in nutrition education, older adults may respond better when messages focus on foods and behaviors to include, rather than on foods to exclude from their diets and behaviors to avoid.

Nutrition education programs for older adults that are oriented to solving problems are a way to help participants make a behavior change by using new information, previous knowledge, and their experiences (Higgins & Barkley, 2003a). Behavior changes can be facilitated by guiding participants in how to apply information they already know to solve their everyday challenges. A program should help to expand older adult participants' capabilities, help them set new goals, and influence their lifestyle choices, according to Higgins & Barkley (2003a).

Effective nutrition education programs focus on the assessed desires and needs of the participants, and use intervention strategies tailored to meet them, as discussed by Higgins & Barkley (2003b). For example, the authors recommended that nutrition educators segment their program's population on the basis of similar educational needs or interests, emphasize cultural relevance, and make individualized adaptations in order to meet the real needs of the participants. Knowing their participants' food patterns, nutritional challenges, and interest in nutrition-related topics may enhance helping them make positive behavior changes. Elements including personalized approaches, discussions to solve mutual problems, preparing food, modifying recipes, reinforcing skills learned, and small group discussions increase the effectiveness of nutrition education programs (Higgins & Barkley, 2003b).

Written materials tailored to health professionals

Printed educational materials are an accessible, inexpensive, and common way to translate research findings, according to Giguère et al. (2012). This research team systematically reviewed printed clinical care educational materials written for health care professionals and found modest (13 percent, on average) improvements in healthcare practices. The authors concluded that using cost-effective printed educational materials to disseminate and translate

information about new research, treatments, and outcomes did have a measurable beneficial effect on outcomes.

Brief, interesting, and accurate newsletters were an effective way to provide information easily to readers, as reported in a study of newsletters that were mailed to pharmacists (Mercieca, Serracino-Inglott, & Azzopardi, 2013).

Newsletters promoted behavior change by increasing awareness, suggesting improvement strategies, prompting evaluation of current practices, and engaging readers, as reported by Ibrahim, Ehsani, & McInnes (2010). This team examined an electronic newsletter sent quarterly for more than one year to healthcare staff about their patient care behaviors. Half of the respondents reported making a change in their overall practice, stating that the newsletter influenced them to make changes, and 20 percent reported that the changes would not have occurred if it wasn't for the newsletter they received (Ibrahim, Ehsani, & McInnes, 2010).

Written materials tailored to the public

Passive interventions such as newsletters, tip cards, and posters may have benefits, such as decreasing dropout rates, compared to active interventions that require intensive participation, as reported by Duvinage et al. (2014). For example, these authors noted that to promote physical activity, some researchers have created outdoor activities and camps to involve parents/caregivers in exercising with their children, but there was an increase in the rate of dropouts because parent/caregivers viewed the intervention as very time-consuming.

In order for written educational materials to fulfill their purpose of helping to refresh readers' memories about health-related concepts, maximize adherence to recommendations, and improve knowledge by providing answers to questions readers already have about health, they need to be noticed, read, understood, believed, and remembered (Hoffmann & Worrall, 2004).

Written nutrition education materials are widely used and are effective at increasing readers' knowledge and awareness, as discussed by Higgins & Barkley (2004b). This team reported that older adults prefer frequent exposure to printed educational materials containing: pictures, a small amount of information at a time organized with cues such as bold headings, and practical specific "how-to" information, such as about meal planning. When tailoring materials for older adults, attractive designs, concrete graphics, large letter fonts, and an interactive format (such as quizzes, self-assessments, and questions-and-answers sections) may increase a reader's attention and retention of the information (Higgins & Barkley, 2004b).

In addition to the format, certain word choice and design principles should be followed to make written educational materials effective, based on published literature. They should have a clear purpose and behavior-focused information; be up-to-date, culturally appropriate, and non-judgmental; and avoid patronizing language, according to Hoffmann & Worrall (2004), McKenna & Scott (2007), and Clayton (2010). These authors report that educational materials should be written simply and at the lowest reading level possible that conveys the information accurately, and use sentences no longer than 15 words, with short paragraphs, common words, a conversational style, and an active voice. In addition, written health materials should include subheadings, have the most important information near the beginning of the pamphlet, state benefits readers can expect if they follow the advice given, follow specific typography rules, incorporate questions or tasks for readers to do, provide understandable and relevant examples, and use illustrations that will help increase readers' understanding of the information or be focused on actions the readers can do (Hoffmann & Worrall, 2004; McKenna & Scott, 2007; Clayton, 2010). If the information is motivating and addresses specific actions in doable terms, readers will likely incorporate them into their everyday lives and will be able to recall the

information later (Clayton, 2010). Taking into account culture when developing educational written materials may help the reader to feel engaged and to identify with the information. For example, specific populations, such as African Americans or Hispanics, may not consider the information relevant if none of the pictures or examples relate to their daily lives or culture, according to a review of literature conducted by Clayton (2010).

In a small research study focused on older adult (mean age, 74 years) readers, written educational materials that used simple language, an active voice, a 5th to 6th grade reading level, illustrations to enhance understanding, a 12-point font size or larger, bulleted main points, and questions and answers format were preferred by 96 percent of participants (McKenna & Scott, 2007). Participants in this study who read information from written materials that did not follow recommended format, word choice, and design features understood and retained 55 percent less information compared to those who read written materials that used the recommended format, word choice, and design principles.

Written materials that use short words, short sentences, and repeat key words, ideas, or phrases may increase older adult readers' comprehension of health information, according to Liu, Kemper, & Bovaird (2009). However, this team reported that in some situations, texts using short words and sentences could reduce comprehension, because inferences have to be made and because they may lead to the omission of key information, such as causal and temporal connections among ideas since the sentences have no subordinate clauses or phrases. Thus, the authors stated that always using this technique should be done with caution, in order to avoid making health texts more difficult to understand for older readers.

Newsletters are minimal labor cost interventions that can deliver information to a wide proportion of society, and thus, this type of program has excellent potential for public health

yield (Bahl & Francis, 2016; Doerksen & Estabrooks, 2007). Various Cooperative Extension Service program newsletters have been shown to be effective in increasing knowledge and improving self-reported lifestyle and parenting techniques (Bahl & Francis, 2016; Garton et al., 2003). Another Cooperative Extension Service newsletter resulted in improved fruit and vegetable consumption, as described by Doerksen & Estabrooks (2007). Their nine weekly newsletters included 500-word messages based on Social Cognitive Theory designed to promote self-efficacy and outcome expectations, and promoted fruits and vegetables preparation techniques as well as their protective health effects. In a similar project reported by Lutz et al. (1999) but not involving the Cooperative Extension Service, adults who received one of three types of nutrition newsletters monthly for just four months, compared to a control group that did not receive a newsletter, also improved fruit and vegetable consumption. This research team found that action-oriented nontailored newsletters were as effective as computer-tailored (based on participants' baseline survey responses using constructs of the Social Cognitive Theory, the Transtheoretical Model of Change, and the Health Belief Model) newsletters in improving daily fruit and vegetable consumption.

When newsletters also function as a discussion topic among readers with their friends and family members, this helps promote behavior change, according to Walker & Riley (2001). Mothers in this study who shared and discussed the parenting newsletter information self-reported making more behavior changes, and overall, the sharing opportunity helped the readers to integrate socially, stimulated them cognitively, and encouraged them to provide child-rearing information to someone in need of it.

Theories of Behavior Change

Health promotion efforts that are based on an appropriate behavior change theory (or theories) can improve healthful practices and well-being in communities, families, and individuals (National Cancer Institute, 2005). Behavior change theories serve as tools to design appropriate health interventions, and provide a road map to evaluate an intervention's outcomes (National Cancer Institute, 2005).

Three main factors affect the likelihood that a person will change a health behavior, according to Social Cognitive Theory (National Cancer Institute, 2005). These are self-efficacy, goals, and outcome expectancies. Acquiring skills is part of human competency. An individual who believes that he or she can use those skills effectively to produce a determined behavior has perceived self-efficacy, while outcome expectancies are an individual's beliefs about the consequences of his or her action. Self-efficacy can determine whether people will consider changing behaviors, their motivation and perseverance in making changes, and how well they maintain any behavior changes (Bandura, 2001).

Communication media, such as newsletters, can promote behavior changes by informing individuals about new practices and their likely benefits, and also by enabling and guiding participants, according to research findings of the Social Cognitive Theory of mass communication summarized by Bandura (2001). Health knowledge can be translated into the adoption of healthful habits primarily by enhancing perceived self-efficacy, and health communication media can enhance perceived self-efficacy. Media can originate and reinforce social influences, and can motivate people to take action. In addition, research shows that empowering people with the tools and self-beliefs for exercising personal control over their

health habits is a better approach to promoting health practices than elevating fear (Bandura, 2001).

Another behavior change theory that includes self-efficacy as one of its constructs is the Health Belief Model (Skinner, Tiro, & Champion, 2015). This model asserts that people are ready to take action to prevent or control a health condition if they: believe they are susceptible to the condition (perceived susceptibility), believe there are serious consequences to the condition (perceived severity), believe that taking action would reduce the severity of the condition or their susceptibility (perceived benefits), believe the benefits outweigh the costs of taking action (perceived barriers), are exposed to elements that prompt them to take action (cues to action), and are confident in their skills and abilities to succeed in performing an action (self-efficacy) (National Cancer Institute, 2005). When applying the Health Belief Model, planners of a health intervention program need to understand whether their audience thinks they are susceptible to the health problem, thinks it is a serious problem, and thinks taking action comes at an acceptable cost (National Cancer Institute, 2005).

Chapter 3 - Methodology

This study used a mix of qualitative and quantitative approaches through a written survey with both open- and closed-ended questions of readers about the nutrition and wellness advice addressed in the newsletter, *Nourishing the Next Generation*.

Participants

This study engaged two different types of participants who received the newsletter, grandparent caregivers and community educators. Both types of participants' surveys had a brief explanation of the purpose of the survey and stated that participation was confidential and voluntary. All study participants were considered to have given informed consent if they returned the survey. The Kansas State University Institutional Review Board approved both surveys before they were sent.

The first group of participants received the printed mailed newsletter, *Nourishing the Next Generation*, and were grandparents living in Kansas and caring for at least one grandchild or other child relative under the age of 18 years old and receiving nutrition assistance. Six times a year, the Kansas Supplemental Nutrition Assistance Program Nutrition Education (SNAP-Ed) provided the names and home addresses of all SNAP-enrolled grandparent-headed households caring for at least one grandchild or child relative, and the funds for printing and mailing the newsletter. The second group consisted of community educators, primarily Cooperative Extension Service agents who had responsibility for providing local healthful eating programs. They received the electronic newsletter by email and distributed it locally, in various ways, to those populations who they thought could benefit from the nutrition and wellness advice that the newsletter provided. This group was a convenience sample of approximately 175 people, comprised of community educators who were in contact with faculty at the state nutrition

Cooperative Extension Service office at Kansas State University and were not grandparent caregivers themselves.

Surveys were sent to grandparent caregivers according to the following criteria. The newsletter had been in circulation for five years and had reached different grandparent caregivers for different lengths of time, depending on how long they had been enrolled in SNAP. During those years, each of six issues per year was mailed to more than 2,000 grandparent-headed households. Of these, most households received the newsletter for less than one year and/or had self-identified that their preferred written language was not English (the other preferences were Arabic, Cantonese/Chinese, German, Hmong, Korean, Laotian, Mandarin/Chinese, Mon-Khmer, None, Spanish, Somali, Thai, Vietnamese, and Other/Undeclared). We determined that neither of these types of households were eligible to be surveyed.

We mailed the survey to 495 of the remaining 868 households, anticipating a response rate of 18 percent so that we could have 10 percent margin of error and a 95 percent confidence level that our results would accurately reflect the newsletter's population of readers. Ninety-nine people in each of five categories were sent a survey: recipients of the newsletter continuously for at least the past year, continuously for at least the past two years, continuously for at least the past three years, continuously for at least the past four years, and for all five years. The printed surveys were marked to indicate these five time periods. After listing the households in each category by their house number, a random sample of 99 addresses from each of the five categories was selected to receive a survey.

Newsletter

Nourishing the Next Generation's two main intervention strategies were education (to increase readers' awareness and knowledge) and persuasion (to affect readers' attitudes,

motivation, and confidence by inducing positive/negative feelings, and to stimulate action towards more healthful behaviors), delivered by a respected agency (namely, Kansas State University Cooperative Extension Service).

The nutrition and wellness information in the newsletter focused on those topics that our team had previously identified to be of concern to this population of grandparent caregivers, that is, what their learning needs were (Higgins and Murray, 2010). Specifically, the topics included in the issues over the years were: quick yet healthful and inexpensive meal and snack recipes (a new one was in every other issue), nutrition advice for infants, children, and adolescents, benefits of eating meals together as a family, feeding “picky eaters”, sports nutrition, choosing more healthful packaged and fast foods, increasing physical activity, limiting screen and other sedentary time, food safety, and tips for intergenerational cooking and gardening.

Three theoretical frameworks were used in developing the content of the three short articles of each issue of the newsletter, and the corresponding components that were incorporated into it because of these theories are discussed below. Primary concepts of the Adult Learning theory, specifically Andragogy, that were used were: addressing real-life nutrition- and wellness-related problems that many grandparent caregivers face; immediacy, or providing information that was of immediate usefulness to grandparent caregivers, with messages that focused on what the readers could do today with the information presented, that is, the “So what?”; explaining reasons for giving any advice; and suggesting practical specific behaviors the readers could do to promote healthful behaviors in their families (TEAL Center staff, 2011). A “small steps at a time” approach to eliciting behavior changes (for example, specific advice on how to serve more healthful meals and snacks to readers’ grandchildren) was used across multiple newsletter issues. Two theoretical behavior change models were also used in developing content. Constructs from

both the Health Belief Model (Skinner, Tiro, & Champion, 2015) and the Social Cognitive Theory (Bandura, 2001) of behavior change guided newsletter content, including: messages aimed at increasing readers' knowledge, motivation to increase various wellness behaviors, positive intentions to adopt more healthful practices, and their ability to problem solve; "outcome expectation" messages regarding benefits, or their positive expectations, of taking action; "cues to action" messages to encourage readers to make personal behavior changes that would improve their own and their families' well-being and reduce their health risks; and messages aimed at providing readers with clear step-by-step instructions or guidance in how to perform various desired behaviors as one method of increasing their self-efficacy, that is, their perceptions of being competent in successfully performing a behavior, and increasing their behavioral capabilities, that is, their skills to perform various health behaviors.

The name of the newsletter was chosen from among several possibilities presented to a convenience sample of grandparent caregivers. The newsletter's subtitle, printed on each issue, was "Practical advice for caring for your young ones with food, fun and love".

All recipes printed in the newsletter were tested multiple times in a home kitchen; called for low-cost ingredients and simple culinary techniques and equipment; were "kid-friendly", quick to make, tasty, and healthful; yielded 2 to 4 servings unless leftovers could be frozen or were not perishable; and included safe food handling tips in the directions.

Format, word choice, and design principles of effective printed educational materials (Hoffmann & Worrall, 2004; Higgins & Barkley, 2004b; McKenna & Scott, 2007; Liu, Kemper, & Bovaird, 2009; Clayton, 2010) were used. The newsletter's information was research-based but was written in an active conversational voice and used jargon-free plain language and common words. Each article had a focused message that was presented in positive terms and

used motivating principles to encourage positive behavior changes. It described benefits for grandfamilies. For example, the text in one issue explained that “meal planning, grocery shopping, cooking, and cleaning up with your teens and school-aged youngsters increases relaxed conversations, teaches them lifelong skills, helps them feel confident and successful, and encourages them to try new foods and eat more healthfully”. Behavioral strategies for improving nutrition and wellness were offered in the form of realistic tips of what to do and how to do it, addressing specific actions that readers could take using “doable” terms. For example, to encourage cross-generational cooking and family meals, the simple phrase “making meals and memories together” was placed above the recipes, and the text in one issue read, in part, “Strive to make meals pleasant experiences for everyone, usually allowing plenty of time to talk and eat. Since electronic devices are not part of a family, don't bring them to your family's meals. Teaching children and teens that mealtimes are family times for sharing food, fun and love will help them thrive”.

The newsletter format and layout were designed to be attractive to older readers. Each issue had several pictures that were either relevant to the article topics or were of grandparent caregivers of varying ethnicities/races, with each photograph being in full color. The articles in each issue were printed on one of two colored backgrounds (Granny Smith apple green, RGB 204,222,146; alternated with Dijon mustard gold, RGB 216,194,103) surrounded by a small amount of white space. Black ink, single spacing, no hyphenated words at the end of sentences, both upper- and lowercase letters in 12-point Verdana font, and bolded titles in 18-point Verdana font were used. Sources used for the articles' information were shown in a small font size at the end of each article, and all were both reliable and current. The newsletter was a single page and professionally printed on both sides, folded into thirds, and mailed.

The return address and the logo of Kansas State University printed on each issue also lent credibility to the newsletter, and no advertisements were included. Each issue had about 475 to 700 words and was written at a Flesch-Kincaid reading level between seventh to tenth grade. The design and layout of the newsletter were carried out using Microsoft Office Publisher.

Two issues of the newsletter *Nourishing the Next Generation* are shown as examples in Appendix A.

Instrument

The written survey (see Appendix B) consisted of 25 questions printed on two sides of one piece of paper. Questions for the survey asked about grandparent caregivers' opinions on the topical nutrition and wellness information the newsletter had provided over the years, recipes, and recommendations about nutrition and physical activity that the newsletter provided. Questions also asked about respondents' preferences, opinions about content and helpfulness of the newsletter, and characteristics, as well as details of any self-perceived changes in their practices. Eleven questions provided an option to make additional comments or suggestions. No identifying data were collected. One of the closed-ended questions was multiple choice with the possibility to mark more than one answer. The remaining closed-ended questions were multiple choice (a single choice from several options), categorical (male or female and ethnicity), dichotomous (yes or no), and Likert-type, with the latter using 3-point rating scales ranging from 1 (no) to 3 (yes, very much).

The first section of the survey asked about what they did with the newsletters. A question about if they would recommend the newsletter to other grandparent caregivers was also asked. Questions about the attractiveness of the newsletter, readability of information and helpfulness of

the information (including recipes), and whether they shared information with others or put into practice the information were included.

Other sections of the written survey asked questions about whether reading the newsletter had led to changes in their awareness of wellness recommendations, and in their wellness (especially nutrition and physical activity) behaviors, knowledge, motivation, and confidence to follow recommendations. Regarding behavior change questions, participants were asked if they ate more meals together, offered more healthful foods, spent more time in the kitchen together, improved food safety practices, limited 'screen' time, and increased their grandchild's physical activity.

A variety of other questions completed the survey. Open-ended questions were asked to give respondents the opportunity to write something that wasn't addressed in the survey. Furthermore, questions about eating attitudes and practices of the grandparents raising grandchildren were included, for example, "I/We prepare most meals at home, except for school lunch", and "I encourage my grandchild/ grandchildren to eat healthfully". Finally, demographic questions about age, gender, and ethnicity were incorporated.

For the group of community educators, primarily Cooperative Extension Service agents who had responsibility for providing local healthful eating programs, an online survey (see Appendix C) was created. This survey consisted of 39 questions to collect information about respondent preferences, opinions about content and helpfulness of the newsletter, and characteristics, as well as details of any use of the information in their practice settings. Six open-ended questions provided an option to make additional comments or suggestions. No identifying data were collected. One of the closed-ended questions was multiple choice with the possibility to mark more than one answer. The remaining closed-ended questions were

categorical (male or female, education level, and ethnicity), multiple choice (a single choice from several options), dichotomous (yes or no), and Likert-type, with the latter using 5-point rating scales ranging from 1 (strongly disagree) to 5 (strongly agree).

The online survey for community educators had questions similar to the written survey for grandparent caregivers, but from an educator's point of view, for example, "Is the information important to the population you work with", and "Please think about the community you work with and answer the following questions". In addition, the online survey asked about the usefulness of the newsletter and about the newsletter as a teaching tool, for example, "The newsletter focuses on behaviors to include rather than those to exclude", and "The newsletter incorporates experiences that grandparent caregivers can relate to".

Data Collection

Surveys were mailed to grandparent caregivers. A short article in the newsletter issue that was mailed just prior to the mailing of the survey alerted readers to the survey and the possibility that a survey might be mailed to their home soon. To the 495 grandparent caregivers selected, as previously described, a two-sided one-page survey was mailed along with a stamped/postage-paid self-addressed return envelope and a form to enter a drawing for one of four \$25 gift cards at a grocery store of their choice. No follow-up reminders were sent. Returning the drawing form was optional, and was intended to be an incentive to participate in the survey. To ensure response anonymity of participants, returned surveys were immediately separated from the drawing forms (which had participant names on them) before the authors started data entry. After the four winners were chosen, these forms were destroyed.

A link to the online survey was emailed to the approximately 175 community educators who received the newsletter by email. A follow-up email reminder was sent.

Data Analysis

Descriptive statistics were used to summarize the data, including percentages, frequencies, and means, which were calculated using Microsoft Excel 2010, as appropriate. Average responses were calculated for questions answered along a 3-point or 5-point Likert scale. For the open-ended questions, a summary of the responses was included.

Chapter 4 - Results

The findings from this study, which asked open- and closed-ended questions about impacts on readers of the *Nourishing the Next Generation* newsletter, have been grouped into two sections. The first describes responses of the low-income grandparent caregivers who received the mailed newsletter over the years, and the second describes outcomes from the community educators who received the electronic newsletter as a resource for the populations they worked with. Each section encompasses opinions about the newsletter regarding its nutrition and wellness advice, and self-reported descriptions of healthy lifestyle behavior changes and demographics of participants.

Grandparent Caregivers

Surveys were mailed to 495 households headed by grandparent caregivers who had received the newsletter, *Nourishing the Next Generation*, for one to five years. Three surveys were returned undelivered because the recipient had moved with no forwarding address. A total of 57 surveys were returned to us from the remaining 492 that were sent. Thus, the response rate for this study was 12 percent. Among these, three had to be excluded because either no or all responses were marked. It was determined from the 55 drawing forms that were returned that the respondents lived in 27 different Kansas counties. Since the printed surveys were marked to indicate the different time periods that participants had received the newsletter, we know that of the 54 valid surveys received, eight had received the newsletter continuously for at least the past year (i.e., they had been sent at least six issues), nine continuously for at least the past two years, 11 continuously for at least the past three years, 12 continuously for at least the past four years, and 14 had received it continuously for five years (30 issues). Because of the overall low response rate, we did not analyze results by length of receipt of the newsletter.

The number of dependent grandchildren being cared for per respondent ranged from one to five, and their ages varied from a few months old up to 17 years. All respondents were low-income grandparent-headed households enrolled in SNAP in Kansas. Demographics of respondents are shown in Table 1. Most (n=31, 58 percent) of the participants were between the ages of 50 to 59 years old, with the next most-frequent age group (n=15, 28 percent) being 60 years of age or more. Fifty-two participants were female, most (n=40, 75 percent) were white and 30 (61 percent) reported being the only adult in their household. Furthermore, 21 (41 percent) participants had cared for a grandchild for five years or less, while 15 (29 percent) had cared for a grandchild for six to ten years and another 15 (29 percent) had been grandparent caregivers for more than ten years. One family had taken care of their grandchildren for the past 22 years.

Table 1. Demographics of Responding Grandparent Caregivers.

Age (years)	Total	Household	Total
40-49	7	The only adult in my household	30
50-59	31	One of the adults in my household	19
60-69	14	Total	49
70 or older	1		
Total	53	Number of years respondent has been a grandparent caregiver	Total
		5 years or less	21
Gender	Total	6 to 10 years	15
Female	52	11 years or more	15
Male	1	Total	51
Total	53		

Table 1. Demographics of Responding Grandparent Caregivers (Continued).

Ethnicity	Total
Non-Hispanic/ Non-Latino	33
Hispanic/Latino	3
Total	36
Race	Total
White	40
Black	8
Asian	1
Other	1
Total	50

Participants were asked what they did with the newsletter they got in the mail every other month and if they would recommend it to others. The majority (n=35, 65 percent) of participants responded that they read them completely while 13 (24 percent) responded that they usually quickly glance through them (see Table 2). Only three (5 percent) respondents reported that they did not usually read them. This is a very positive finding, especially considering that the survey participants had not asked to receive the newsletter. Eighteen reported that they keep them and refer back to them sometimes, while five reported giving them to somebody else, such as friends or family, to read. Most (n=37, 69 percent) of the 54 respondents said that they would “very much recommend the newsletter to other grandparents raising a grandchild or another child relative”, while 17 (31 percent) said that they would recommend it “somewhat”. No one reported that they would not recommend the newsletter. Participants wrote that the newsletter was “helpful, interesting, and fun to read” and had “good information”.

Table 2. What do Recipients do with the Newsletters Mailed to Them.

What do you do with the newsletter mailed to you every other month?	Total*
I do not usually read them	3
About half the time I glance through or read them, and half the time I do not	2
I usually quickly glance through them	13
I usually read them completely	35
I keep them and refer back to them sometimes	18
I keep them but I have not looked at them again	0
I give them to somebody else to read	5
I throw them away or recycle them	8

*Participants could mark more than one option.

The survey asked for opinions about the newsletter’s format and content. Most (n=48, 96 percent) participants thought that the newsletter was visually appealing, with the average response being 2.5 out of 3, and all (n=50, 100 percent) respondents thought that the information was understandable, with the average response being 2.9 out of 3 (see Table 3). Almost all (n=45, 96 percent) of the grandparent respondents reported that the information was helpful or provided new ideas for them to use, and 27 (61 percent) had talked about the newsletter information with somebody else. All respondents who reported talking about information in the newsletter with somebody else also reported that they had made some behavior changes as a result of reading the newsletter. With regard to opinions about the newsletter recipes, the majority (n=37 of 52 respondents, 71 percent; data not shown in table) thought the recipes were “very much” helpful, 14 (27 percent) thought they were “somewhat” helpful, and only one person (2 percent) thought the recipes were “not at all” helpful, with the average response being 2.7 out of 3.

Table 3. Recipient’s Opinions about Information in *Nourishing the Next Generation* Newsletters (n=50).

Opinion about the information in <i>Nourishing the Next Generation</i> newsletters	Yes, very much	Yes, somewhat	No	Average response	Total
It is visually appealing	28	20	2	2.5	50
I understand the information	43	7	0	2.9	50
	Yes	No	Total		
The information is helpful or provides new ideas for me to use	45	2	47		
I have talked about information in them with somebody else	27	17	44		

*Three-point Likert scale: 3 = Yes, very much; to 1 = No.

The newsletter “very much” led to more awareness about recommendations for healthy eating and physical activity for 32 (60 percent) and 26 (54 percent) participants, respectively, and “somewhat” increased awareness for 19 (36 percent) and 18 (38 percent) respondents, respectively (see Table 4). Responses for more awareness of healthy eating recommendations averaged 2.6 out of 3, and 2.5 out of 3 for physical activity recommendations. Sixteen (30 percent) participants described how reading the newsletter led them to have more awareness about the recommendations, including: “gives me good ideas”, “it helps me to stay informed”, “walk, run, and play”, “not watch TV or video games”, “walking and/or playing and leaving the TV/games/internet off”, “to keep moving”, “help them eat healthy, play better”, “new things my grandson can eat, also things for him to do”, “made me watch how I eat my food and try to do more physical things”, “more fruits, vegetables, and grains; and more exercise”, “my child is not a ‘veg’ kid, but helping to prepare and try was easier”, “too much junk food is available for children. I enjoy the nutritious snacks and recipes [in the newsletter]”, “what foods are better for my grandkids”, “the kids are more from the ‘new generation’ so I am having to learn and re-learn family meals all over again”, and “they won't be eating so much junk food, pizza, chips”.

Table 4. Awareness, Knowledge, Motivation/Confidence about Healthful Eating, Physical Activity, and Healthful Playing.

	Yes, very much	Yes, somewhat	No	Average response	Total
Has reading <i>Nourishing the Next Generation</i> newsletters led you to have more awareness about recommendations for					
Healthy eating	32	19	2	2.6	53
Physical activity	26	18	4	2.5	48
Has reading <i>Nourishing the Next Generation</i> newsletters led you to learn something new, or to learn more about a topic, or to recognize anything that you could change to allow you and your family to eat or play more healthfully?	22	17	12	2.2	51
Has reading <i>Nourishing the Next Generation</i> newsletters led you to feel more motivated or confident to follow recommendations for healthy eating or physical activity?	22	16	11	2.2	49

*Three-point Likert scale: 3 = Yes, very much; to 1 = No.

When participants were asked if reading the newsletter had led them to learn something new about a topic or to recognize anything that they could change to allow them and their family to eat or play more healthfully, 22 (43 percent) responded “very much” and 17 (33 percent) answered “somewhat” (see Table 4). The average of responses for this question was 2.2 out of 3. Twenty-two (41 percent) respondents wrote descriptions of what they had learned or recognized as anything that they could change, including: “adding other food to eat, or less of this and that. It's so good to try new things for the family”, “healthy benefits of food and drink choices”, “recognize healthy food, use less salt, eat fresh foods and vegetables”, “new recipes”, “to eat more healthy”, “eating healthy”, “drink more water and eat more veggies”, “learning new ways to cook healthy”, “tips for recipes and snacks”, “different ways to do meals, and interest and

involve the children hands on. Let them measure, taste, make their choice of meals”, “we are eating and cooking more vegetables”, “respect more people’s feelings and do more reading”, “how to enjoy your child”, “it has brought us closer as a family”, “working together to get children more interested”, “by eating together and working out”, “we started going and doing stuff outside and we enjoy it”, “our outdoor activities”, “have exercise time in summer (ride bikes, skate)”, “the way to promote exercising for city kids”, and “sometimes they [the newsletters] just clue me in on little things I didn't know”.

Similar results were obtained when individuals were asked if reading the newsletter had led them to feel more motivated or confident to follow recommendations for healthy eating or physical activity: 22 (45 percent) responded “very much” and 16 (33 percent) answered “somewhat”, with the average of responses being 2.2 out of 3 (see Table 4). Grandparent caregivers’ written responses to this query included both what they felt more motivated or confident about, along with actions they had initiated: “it helps as a support system”, “new ideas”, “confirming what I have been doing for him is good for him”, “trying new things”, “need to do healthy things”, “workout 5 days per week”, “they feel less tired out and are full of energy”, “we are trying to exercise and walk more”, “getting out and just walking”, “we do things together and we eat together”, “I sometimes forget what kinds of healthy snacks there are. And it reminded me to keep them active instead of watching video games”, “motivated to change our eating habits”, “everyone has started watching what we eat”, and “makes me feel good when my family does eat healthy”.

Overall, 49 (91 percent) of the 54 respondents described putting into practice at least some of the information from the newsletter. Twenty-seven (61 percent) of the 44 people who responded to the question about preparing one or more of the recipes, one of which was included

in every other issue of the newsletter, answered affirmatively (see Table 5). Of this group, some grandparent caregivers specifically liked “the quick recipes”, “the recipes convenient for children”, the “fruit recipes”, the “main course recipes”, or the “food the kids can cook for us”. Another participant reported that her grandchildren “eat better when they cook”. One grandparent caregiver mentioned that “trying the recipe ideas are good on making memories with loved ones or friends”, while one now lets her “grandchildren choose snacks from a selection of healthy fruits and veggies” and another reported that “we use fresh foods more”. One reader who had not tried a recipe nevertheless wrote, “I try to do good meals”.

Table 5. Reported Behavior Changes from Reading the *Nourishing the Next Generation* Newsletter.

Has reading the newsletters led you to do any of these?	Yes	Considering it	No	Average response	Total
Offer low-cost meals and/or snacks that are more healthful to your grandchild	43	4	4	2.8	51
Eat more meals together as a family	40	4	5	2.7	49
Increase the physically-active time of your grandchild/grandchildren	40	5	5	2.7	50
Improve your food safety practices	37	7	5	2.7	49
Spend more time in the kitchen with your grandchild/grandchildren	36	8	6	2.6	50
Limit the ‘screen’ and sitting-down time of your grandchild/grandchildren	34	9	6	2.6	49
Prepare one or more of the recipes	27	N/A	17	N/A	44
Have the newsletters led you to do anything else differently with your grandchild/grandchildren, or to change anything about your family’s eating or physical activities	27	11	12	2.3	50

*Three-point Likert scale: 3 = Yes; to 1 = No.

Eighty-four percent (n=43) of 51 respondents self-reported making one or more wellness-related behavior change beyond simply preparing one of the healthful recipes from the newsletter, while an additional eight percent were considering doing so (see Table 5). Most of the grandparent caregivers reported that reading the newsletter had led them to make a variety of behavior changes, including: offering more healthful low-cost meals and/or snacks to their grandchildren (n=43, 84 percent), eating more meals together as family (n=40, 82 percent), increasing the physically-active time of their grandchildren (n=40, 80 percent), improving food safety practices (n=37, 75 percent), spending more time in the kitchen with their grandchildren (n=36, 72 percent), and limiting ‘screen’ and sitting time of their grandchildren (n=34, 69 percent). The average of responses ranged from 2.6 to 2.8 out of 3. Two respondents wrote that spending more time in the kitchen with their grandchildren was “especially helpful”. One caregiver wrote that she was considering managing “her food money better”. One of those who reported no changes wrote that it was because she was “already doing these” listed items before reading the newsletter. Grandparent caregivers wrote many examples of additional healthy lifestyle changes that the newsletter had led them to make in their family’s eating practices and physical activities, including: “getting out to walk and swim together”, “go do things”, “we are doing a little more physical things”, “join the YMCA to have more [indoor] exercise with the heat so high”, “yes, we eat and talk, and everybody does more physical things (like play basketball and tag)”, “I have utilized a lot of the healthy snack ideas and some of the tips on helping children try new foods”, “we [my husband and I] are teaching awareness of eating habits to the children like [they were] classes”, “we like the new recipes and ideas”, “we are eating better choices of food”, “she [my granddaughter] eats better and we have lots of fun”, “sit down as a family, eat more healthy snacks”, “trying to eat together all the time”, “being able to talk

more”, “I am working on a weekly schedule for myself and the grandchildren with activities and meal planning”, “trying to change some ingredients”, “new things especially for a picky granddaughter”, and “eat more meatless healthy meals and went for walks and to the playground more”.

The survey asked these low-income grandparent caregivers about their at-home cooking practices and about their eating patterns. Almost everyone (n=52, 98 percent) reported preparing most meals at home except for school lunch (see Table 6). Responses to a similar question were comparable: regarding eating out, almost all (n=46, 94 percent) participants reported eating out from zero to one times per week (see Table 7). Almost everyone (n=50, 96 percent) reported having enough kitchen equipment at home to cook (see Table 6). Furthermore, 37 (73 percent) of 51 respondents reported preparing most meals from “scratch” while the other 14 (27 percent) prepared meals mostly from packaged food (see Table 7).

Table 6. Participants’ At-Home Cooking Practices.

	Yes	No	Total
I/We prepare most meals at home, except for school lunch	52	1	53
I/We have enough kitchen equipment at home to cook	50	2	52

Table 7. Participants’ Eating Patterns.

Most meals that I/we prepare at home are	Total	We eat out	Total
From “scratch”	37	0-1 times per week	46
Packaged food	14	2-3 times per week	3
Total	51	4 or more times per week	0
		Total	49

The eating attitudes of respondents were very homogenous. All (n=53, 100 percent) of the respondents thought it was important to them to try to eat healthfully (see Table 8) and almost all (n=51, 98 percent) encouraged their grandchildren to eat healthfully, too. Many (n=37, 73 percent) of these low-income grandparent caregivers who received SNAP benefits noted that they have a hard time buying healthy foods on their budgets. One respondent specifically mentioned that “vegetables and fruit are expensive.”

Table 8. Participants’ Eating Attitudes.

	Yes	No	Total
Trying to eat healthfully is important to me	53	0	53
I encourage my grandchild/ grandchildren to eat healthfully	51	1	52
I/We have a hard time buying healthy foods on our food budget	38	13	51

Very few respondents offered suggestions and comments to make the newsletter more meaningful to them for everyday grandparenting. They wrote requests for: “exercising”, “more daily or weekly menu ideas with basic food groups, so I gain confidence that they are getting all the nutrition needed”, “more recipes”, “more recipes for low-cost healthy meals (not snacks)”, and “more summer healthy recipes”. One thanked us “for the learning experience”.

Community Educators

A total of 30 community educators, which was a 17 percent response rate, completed the online survey about the electronic version of the newsletter *Nourishing the Next Generation* that they had received. Of the 22 respondents who indicated the type of agency that they worked for, most (n=14, 64 percent) were with the Cooperative Extension Service. Three worked with an area or state agency on aging, two were currently unemployed, and one each worked in a hospital, in education, and with an agency for children and families. Most (n=21, 70 percent) participants were from Kansas, while one was from Iowa and two were from North Carolina.

Most (n=22, 73 percent) participants received the newsletter because its author emailed it to them, while two reported having access to the newsletter by emails from another Cooperative Extension Service county agent or state specialist. Based on self-reports, two had received the newsletter for less than one year, three between one to two years, five between two to three years, seven between three to four years, and 11 had received it for all five years.

Most (n=16, 70 percent) of the survey participants were 50 to 69 years of age, four (17 percent) individuals were 40 to 49 years of age, two (9 percent) were 30 to 39 years and only one (4 percent) participant was still in her twenties (see Table 9). Of those who answered the question regarding gender, only one (4 percent) was male while 26 (96 percent) were female. All 27 (100 percent) had at least a college bachelor’s degree, and all but one were white.

Table 9. Demographics of Responding Educators.

Age (years)	Total	Education	Total
20-29	1	Bachelor degree	13
30-39	2	Master degree	13
40-49	4	Doctoral degree	1
50-59	11	Total	27
60-69	5		
Total	23		
Ethnicity	Total	Gender	Total
White	25	Female	26
Black	1	Male	1
Total	26	Total	27

Twenty-one (70 percent) of the 30 educators responded that they had used the information with the community they worked with (see Table 10). The four most common

descriptions of ways they had used the *Nourishing the Next Generation* newsletter in their communities were that they had distributed printed copies of the newsletter, had used some or all of the newsletter information in their own publications, had used it to teach in their group and individual educational sessions, and had forwarded electronic copies to others they knew. Thirteen printed them for others to read. Comments included: “Give copies to a health clinic that is free for those who are uninsured”, “Print copies for distribution at our local food pantry”, “Share with grandparents”, “We have 'Parent Corners' set up at our after-school sites and the newsletter is one of the many resources we provide to parents/guardians”, “I make it available on the publication shelf in our office”, and “I print it for the display table in the lobby of my building”. Comments regarding using the information in their own publications and educational sessions included: “In various news articles, newsletters, and presentations to my communities”, “For various different media efforts”, “In aging and caregiver publications”, “Included tidbits in my weekly newspaper article as well as in my monthly newsletter”, “I take pieces from the newsletter to use with a personalized senior nutrition newsletter that I send monthly”, “I have used the articles and the recipes in commodity newsletters”, “I have used the information and the recipes in handouts given to adult audiences and with senior adult food commodity distributions”, “I usually take an article or recipe and incorporate it into my own newsletter”, “With older adult meals program participants during noon meals”, “At different programs”, “I take articles out of each newsletter and use them for various projects and programs going on in our area”, “I provide it to program participants who may benefit from it. We also review pertinent pieces of information as a group when time allows, or schedule phone conferences if follow up is needed”, “I work in a hospital and have used it with my patients”, “I used the information with SNAP-Ed at our public schools, public library, food bank, and women's

shelter”, “On our SNAP-Ed table with an educational display”, “At our Extension/Health Department summer ‘Mommy and Me’ nutrition classes. It is common for grandparents to bring grandchildren to these weekly programs”. Only seven (27 percent) educators reported emailing it to others, including to the directors of senior centers, directors of Head Start programs, Area Agency on Aging staff, young mothers, grandparents, those in the “grandparent age bracket on my community programming listserv”, in response to community members with a specific question or concern who had access to electronic mail, and to friends who are grandparents. Regarding feedback from community members who had been given the newsletter, one participant shared that she “received thanks for giving them hints for picky eaters and for helping them try out different food items”. Another educator wrote that her audiences “enjoy the information and appreciate it”.

Table 10. Actions of Educators regarding *Nourishing the Next Generation* newsletters*

	Yes	No	Total
I have used the information with the community I work with	21	9	30
I print them for others to read	13	13	26
I email them to others	7	19	26
I usually read them completely	18	7	25
I usually quickly glance through them	10	14	24
About half the time I glance through or read them, and half the time I do not	4	18	22
I do not usually read them	3	22	25
I keep them and refer back to them sometimes	17	8	25
I delete them from my electronic files	5	21	26

*Participants could mark more than one option.

The community educators were asked about other actions they took with the emailed newsletter they got every other month, and also about their opinions of its importance to them in

their work (see Tables 10 and 11). Most (n=18, 72 percent) of the participants reported that they read each issue of the newsletter completely, while only three (12 percent) responded that they do not usually read them. Twenty-one (70 percent) educators reported keeping the electronic files, with 17 (68 percent) of these also referring back to them sometimes, while five (19 percent) deleted the newsletter issues from their files. When asked how important the newsletter information was to them as they did their community work, six (20 percent) said it was “very important” while 12 (40 percent) thought it was “important”, 10 (33 percent) educators thought the information was “somewhat important”, and only two (7 percent) said the information was “not important”. The average of responses for this question was 2.7 out of 4.

Table 11. Opinions of Educators about the Importance of Information in *Nourishing the Next Generation* for Doing their Community Work.

How important is the information in the newsletter <i>Nourishing the Next Generation</i> to you as you do your community work?	Total
Very important	6
Important	12
Somewhat important	10
Not important	2
Average response	2.7
Total	30

*Four-point Likert scale: 4 = Very important; to 1 = Not important.

The survey asked the community educators their opinions about the populations that they worked with. Most (n=26, 90 percent) of the community educators reported that the newsletter information was important to the population they worked with and 28 (93 percent) also noted that the information was helpful or provided new ideas for its readers (see Table 12). All (n=28, 100 percent) of the responding participants believed that trying to eat healthfully was important

for the communities they worked with, while almost all (n=25, 93 percent) were in accord that the communities they worked with encouraged their grandchildren to eat healthfully. In addition, all (n=27, 100 percent) reported that the communities they worked with had a hard time buying healthy foods on their food budgets.

Table 12. Opinions of Community Educators about the Populations They Work with.

Regarding the community you work with...	Yes	No	Total
The information in the newsletter <i>Nourishing the Next Generation</i> is important to the population I work with	26	3	29
The information in the newsletter <i>Nourishing the Next Generation</i> is helpful or provides new ideas for the readers	28	2	30
Trying to eat healthfully is important to them	28	0	28
They encourage their grandchild/ grandchildren to eat healthfully	25	2	27
They have a hard time buying healthy foods on their food budget	27	0	27

Overall, community educators who responded to the survey were satisfied with the nutrition and wellness educational aspects of the newsletter and its format, with the average of responses ranging from 3.9 to 4.3 out of 5 (see Table 13). Most (n=22, 81 percent) respondents “agreed” or “strongly agreed” that it was a good nutrition education method to reach grandparent caregivers. Most also believed that the newsletter content was appropriate for the population (n=22, 85 percent) and that the themes targeted the needs of grandparent caregivers (n=23, 85 percent). Additionally, all (n=29, 100 percent) participants stated that the newsletter was “very much” or “somewhat” visually appealing and most (n=26, 90 percent) thought it had information that was very easy to understand (data not shown in table). Furthermore, most of the educators “agreed” or “strongly agreed” that the recipes included in the newsletter were helpful (n=25, 93

percent) and easy to make (n=23, 92 percent) for the population, and that the ingredients used in the recipes were familiar to them (n=23, 85 percent) and easy for grandparents to access (n=21, 81 percent). One commented that “the recipes are excellent -- I would certainly keep sending those”. Most (n=22, 81 percent) of the respondents agreed that the newsletter focused on behaviors to include rather than on behaviors to exclude and that its information was practical for grandparent caregiver populations to use. Twenty-four (89 percent) agreed that the information was relevant for grandparent caregivers and that it incorporated experiences that the grandparents could relate to. One respondent wrote that the newsletter “is very informative and has great ideas on how one can provide adequate nutrition to children. Has helpful hints to continue eating healthy at lower cost”, while another commented, “The food safety and nutrition information is very helpful”. Another educator commented that the newsletter has “good information and highlights the important role grandparents having in shaping the health of grandchildren”.

Table 13. Opinions of Educators about the Newsletter as a Nutrition Education Method to Reach Grandparent Caregivers.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly disagree	Average response	Total
The newsletter is a good nutrition education method to reach grandparent caregivers	9	13	4	0	1	4.1	27
The content of the newsletter is appropriate for grandparents caring for their grandchildren	13	9	3	0	1	4.3	26
The themes in the newsletter target the needs of grandparent caregivers	9	14	3	0	1	4.1	27
The recipes in the newsletter are helpful for grandparent caregivers	8	17	1	0	1	4.2	27

Table 13. Opinions of Educators about the Newsletter as a Nutrition Education Method to Reach Grandparent Caregivers (Continued).

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly disagree	Average response	Total
The recipes in the newsletter are easy to make for grandparent caregivers	9	14	1	0	1	4.2	25
The ingredients used in recipes in the newsletter are familiar to grandparent caregivers	8	15	3	0	1	4.1	27
The ingredients used in recipes in the newsletter are of easy access to grandparent caregivers	7	14	4	0	1	4.0	26
The newsletter focuses on behaviors to include rather than those to exclude	3	19	4	0	1	3.9	27
The information in the newsletter is practical for grandparent caregivers to use	8	14	4	0	1	4.0	27
The information in the newsletter is relevant for grandparent caregivers	4	20	2	0	1	4.0	27
The newsletter incorporates experiences that grandparent caregivers can relate to	3	21	2	0	1	3.9	27
The newsletter motivates readers to make nutrition-related changes	4	19	3	0	1	4.0	27
The newsletter motivates readers to make physical activity-related changes	1	19	6	0	1	3.7	27
The newsletter motivates readers to make food safety-related changes	3	17	6	0	1	3.8	27

*Five-point Likert scale: 5 = Strongly agree; to 1 = Strongly disagree.

Regarding how well the newsletter motivated readers to make nutrition-related changes, 23 (85 percent) survey participants “agreed” or “strongly agreed” that it did, with the average of responses for this question being 4.0 out of 5. However, fewer (n=20, 74 percent; average

response, 3.7 to 3.8 out of 5) were of the opinion that it motivated readers to make changes in their physical activity or food safety practices (see Table 13). One participant commented that sometimes telling people about what their healthy options are or what healthful choices can do for them is not the most effective for behavior change because “they have to have internal motivation to change their habits. For example, all too often, it is not until they get a report back from their doctor that they are pre-diabetic or have unusually high cholesterol. Then they have a personal investment in needing to change”.

Educators expressed a desire to keep getting this newsletter because they thought that it was a valuable resource and that the information was helpful to people in their communities who often are unaware about how to be or stay healthy.

The community educator whose opinions about different aspects of the newsletter as a nutrition education method to reach grandparent caregivers were “strongly disagree” also expressed how useful the newsletter was for the community that she worked with, wrote comments about how she had used it with her clients, and wanted to keep receiving the newsletter. Because of the discrepancies in her survey responses, a new average not including this outlier survey was calculated. The average response for the opinions of the remaining educators about the newsletter as a nutrition education method to reach grandparent caregivers increased by 0.1 (see Table 14).

Table 14. Opinions of Educators about the Newsletter as a Nutrition Education Method to Reach Grandparent Caregivers, Corrected Table.

	Average response with outlier	Average response without outlier
The newsletter is a good nutrition education method to reach grandparent caregivers	4.1	4.2
The content of the newsletter is appropriate for grandparents caring for their grandchildren	4.3	4.4

Table 14. Opinions of Educators about the Newsletter as a Nutrition Education Method to Reach Grandparent Caregivers, Corrected Table (Continued).

	Average response with outlier	Average response without outlier
The themes in the newsletter target the needs of grandparent caregivers	4.1	4.2
The recipes in the newsletter are helpful for grandparent caregivers	4.2	4.3
The recipes in the newsletter are easy to make for grandparent caregivers	4.2	4.3
The ingredients used in recipes in the newsletter are familiar to grandparent caregivers	4.1	4.2
The ingredients used in recipes in the newsletter are of easy access to grandparent caregivers	4.0	4.1
The newsletter focuses on behaviors to include rather than those to exclude	3.9	4.0
The information in the newsletter is practical for grandparent caregivers to use	4.0	4.2
The information in the newsletter is relevant for grandparent caregivers	4.0	4.1
The newsletter incorporates experiences that grandparent caregivers can relate to	3.9	4.0
The newsletter motivates readers to make nutrition-related changes	4.0	4.0
The newsletter motivates readers to make physical activity-related changes	3.7	3.8
The newsletter motivates readers to make food safety-related changes	3.8	3.9

Chapter 5 - Discussion

The purpose of this study was to measure perceived helpfulness and effectiveness of a theory-based wellness (especially nutrition and physical activity) education newsletter tailored to low-income grandparent caregivers. Two groups were assessed using a survey: grandparent-headed households enrolled in SNAP who had received the mailed newsletter, and community educators who had received an electronic version with the purpose of diffusing the information to local grandparent caregivers. Participants had received *Nourishing the Next Generation* every other month for one to five years.

Grandparent respondents in this study had been responsible for their dependent grandchildren longer than the state's average. Forty percent of grandparent caregivers participating in this study had cared for their grandchildren for five years or less, which is a much lower rate than the 63.5 percent who had cared for their grandchildren for four or fewer years in Kansas, as reported by the U.S. Census Bureau (2015b). The remaining 60 percent of this study's participant grandparents had been caring for their grandchildren for six or more years, compared to just 36.5 percent who had cared for their grandchildren for five or more years in Kansas, as reported by the U.S. Census Bureau (2015b).

Eating attitudes of our low-income grandparent caregiver respondents were assessed via the survey. All reported that it was important to them to try to eat healthfully, and 98 percent reported encouraging their grandchildren to eat healthfully, too. Many (73 percent) of our participants, all of whom received SNAP benefits, responded that yes, they had a hard time buying healthy foods on their budgets, with one respondent specifically mentioning that "vegetables and fruit are expensive." Our community educator respondents also thought that grandparent caregivers had these eating attitudes. This finding is similar to that reported by

Higgins & Murray (2010), that a commonly-held food attitude among grandparent caregivers was that eating nutritiously is expensive, but worth it. These authors also found that while grandparent caregivers were more conscious about food safety and nutrition in their second parenting experience than in their first, their knowledge did not always translate into better food selections for their grandchildren.

The first objective of this study was to evaluate perceived helpfulness of the newsletter. Both groups (grandparents raising grandchildren and community educators) indicated that the newsletter communicated messages in a way that was easy to understand for the readers. Overall, the newsletter *Nourishing the Next Generation* was described as helpful by almost all (96 percent) of the responding grandparent caregivers. As Duvinage and colleagues (2014) found, newsletters require little time to read and this may not overwhelm the participant. Sixty-two percent of our grandparent caregiver respondents reported that they had put into practice specific information from the newsletter. Participants reported using the newsletter as a reference for learning new wellness-related ideas that they could use, and for learning new ways of doing their everyday tasks, including preparing new recipes. Higgins & Murray (2010) suggested that cooking together, eating meals as a family, and being physically active together offer grandparent caregivers and their dependents daily opportunities to benefit in some areas where they may be experiencing difficulties, and cited research that these activities are associated with frequent and uncontrived chances for relaxed communication and emotional connections with each other; a boost in decision-making skills, confidence and self-esteem; improved math, science, and language skills and general academic achievement of children; decreased likelihood of risky behaviors by the younger generation; and overall more positive familial and other social relationships. Our grandparent caregiver respondents reported that examples provided in the

newsletter helped them to stay informed and helped them enable their grandchildren to eat and play more healthfully.

For community educators, who primarily worked in the Cooperative Extension Service, *Nourishing the Next Generation* was helpful because they thought that its information was useful, that it provided new ideas, and that it encouraged readers to take action. Most (93 percent) also thought that the newsletter was important to them as they did their community work. Many (70 percent) shared its information widely with their community members, including the general public, seniors, low-income families, mothers, and caregivers in general. Reported actions they took with the newsletter included distributing printed copies, using some or all of the information in their own publications, using it to teach in their group and individual educational sessions, and forwarding electronic copies to others they knew. The extensive diffusion of the information by the community educators highlights the fact that a newsletter can be a good nutrition education tool that, when tailored to the target population, can enhance people's well-being and motivate behavior change. The different uses that community educators gave the newsletter may also point out the versatility that a newsletter can have and the possibilities of a well-designed nutrition education piece. Most of the community educators agreed that the newsletter was a good method to reach grandparent caregivers and that the themes included in it were relevant and appropriate to the population.

The second objective of the study was to evaluate if reading the newsletter led grandparent caregivers to have improvements in their awareness, knowledge, motivation, or confidence to follow recommendations about nutrition and physical activity. Overall, the low-income grandparent caregiver participants in this study reported that they were more aware and knowledgeable about wellness recommendations, and that they felt supported and confident in

their practices, after reading *Nourishing the Next Generation*. Reading the newsletter increased awareness of wellness (especially nutrition and physical activity) recommendations for 96 percent of respondents and increased self-reported knowledge for 76 percent of them. With regard to what participants had learned, 43 percent wrote a response to the survey's open-ended question, mentioning a wide range of topics. These findings confirm those of studies reviewed by Higgins & Barkley (2004b), that written nutrition education materials can be effective at increasing a reader's awareness and knowledge. Grandparent caregivers expressed that the newsletter helped them to improve their families' physical activity levels by increasing their awareness of the importance of being active, which supports the conclusion reported by Clayton (2010), that when readers of educational written materials are prompted to take action in doable terms, it helps them to incorporate the knowledge into their everyday lives. Also, most (78 percent) of the grandparent caregivers described feeling more motivated or confident to follow recommendations for healthy eating or physical activity, which flows back to the Social Cognitive Theory that focuses on enhancing self-efficacy so that individuals can make behavior changes. As discussed in literature reviewed by Bandura (2001), newsletters and other health communication media can enhance perceived self-efficacy, which is important since health knowledge can be translated into the adoption of healthful habits primarily by enhancing perceived self-efficacy.

The third objective of the study was to demonstrate effectiveness of *Nourishing the Next Generation* in promoting more healthful nutrition, physical activity, and other wellness behavior changes among grandparent caregivers. Our newsletter reportedly helped 91 percent of responding grandparent caregivers improve one or more wellness practice. Most participants wrote responses to the survey's open-ended questions describing how their various wellness

practices, especially regarding nutrition and physical activity, had improved as a result of reading the newsletter. More than two-thirds of responding grandparent caregivers identified the newsletter as a tool that led them eat more meals together with their family, spend more time in the kitchen together with their grandchildren preparing healthful meals and snacks, and improve their food safety practices. Furthermore, these grandparents stated that they now limited their grandchildren's "screen time" and sitting time, and increased their physically active time.

According to participants, these behavior changes were prompted by reading the newsletter that they had received every other month for one to five years. Our finding of high rates of self-reported behavior changes after reading *Nourishing the Next Generation* lend credence to the conclusion of Rizzoli, Abraham, & Brandi (2014), that interventions that were the most effective at leading to behavior change targeted: eating behaviors, physical activity, women, and older adults. Our results also agree with those reported in literature reviewed by Higgins & Barkley (2003a), that nutrition education programs for older adults that are oriented to solving problems are a way to help participants make behavior changes. Similarly, our findings are in accord with literature that Bandura (2001) discussed, showing that communication media, such as newsletters, can promote behavior changes by informing individuals about new practices and their likely benefits, and that media can originate and reinforce social influences and can motivate people to take action.

Many (61 percent) of our participants reported talking about the newsletter information with someone else, and a few (9 percent) participants reported sharing their mailed copy of the newsletter with somebody else. Their sharing is evidence that the information in *Nourishing the Next Generation* was relevant, applicable, and engaging to its readers. We found that all respondents who reported talking about information in the newsletter with somebody else also

reported that they had made some behavior changes as a result of reading the newsletter, which aligns with the findings of Walker & Riley (2001), who reported that this sharing experience promotes behavior change.

The self-reported at-home cooking practices and eating patterns in our study, together with our finding that many reported having a hard time buying healthy foods on their budgets, indicate that frugal was the norm for the responding grandparent caregiver households. Almost all of our participants, who had fewer financial resources than the national average, yet who valued good nutrition, reported preparing most meals at home except for school lunch and eating out from zero to one times per week. They had enough kitchen equipment at home to cook, and 73 percent reported preparing most meals from “scratch” rather than from packaged food. Given these responses, it is not surprising that many reported preparing one or more of the newsletter’s recipes, all of which used low-cost ingredients and simple culinary techniques and equipment; were “kid-friendly”, quick to make, tasty, and healthful; yielded 2 to 4 servings unless leftovers could be frozen or were not perishable; and included safe food handling tips in the directions. Our finding of positive remarks about the recipes are similar to those of Doerksen & Estabrooks (2007), who reported an increased consumption in fruits and vegetables using a newsletter intervention strategy based on Social Cognitive Theory that included produce preparation techniques.

Our newsletter used constructs of the Social Cognitive Theory and the Health Belief Model and was effective in promoting healthful behavior changes, which is similar to the impact of newsletters that Lutz et al. (1999) evaluated. These authors found that sending action-oriented newsletters that were either nontailored or computer-tailored (based on participants’ baseline survey responses) and that included constructs of the Social Cognitive Theory, the Health Belief

Model, and the Transtheoretical Model of Change, were effective in improving fruit and vegetable consumption, compared to a control group that did not receive a newsletter.

Readers of *Nourishing the Next Generation* reported increasing other healthful behaviors by putting into practice advice that the newsletter provided, for example, offering more healthful meals and/or snacks, limiting ‘screen’ and sitting-down time, increasing physically-active time of their grandchildren, and changing the family’s eating and physical activities. That the newsletter in this study had multiple self-reported beneficial effects is similar to outcomes reported for other written educational materials used with various populations (Giguère et al., 2012; Ibrahim, Ehsani, & McInnes, 2010; Bahl & Francis, 2016; Garton et al., 2003; Doerksen & Estabrooks, 2007; Lutz et al., 1999).

Several factors likely contributed to the overall success of the newsletter, *Nourishing the Next Generation*, in affecting positive wellness-related changes among at least some of its readers and virtually all of the survey respondents. One is that its topics addressed specific assessed information desires and needs of grandparent caregivers, and used one of their preferred methods of communication (Higgins and Murray, 2010), as was recommended in literature discussed by Higgins and Barkley (2003b). In addition, the newsletter’s articles incorporated constructs of adult learning theory and two behavior change theories, and health promotion efforts that are based on appropriate theory can improve healthful practices and well-being in families and individuals (National Cancer Institute, 2005). Furthermore, recipients of the survey were exposed to our educational/persuasive newsletter intervention for a long time, from one to five years, and older adults prefer frequent exposure to printed educational materials containing a small amount of information at a time (Higgins & Barkley, 2004b). Finally, the newsletter used format, word choice, and design principles that have been shown to make written educational

materials effective (Hoffmann & Worrall, 2004; Higgins & Barkley, 2004b; McKenna & Scott, 2007; Liu, Kemper, & Bovaird, 2009; Clayton, 2010).

The last objective of this study was to explore reader-recommended improvements that the newsletter used in this study could have. The most often-mentioned component of *Nourishing the Next Generation* was the healthful recipes that were included in every other issue, which both participant groups agreed were easy to make, and survey respondents asked for more recipes and the continuation of the newsletter. Among possible improvements for the newsletter, grandparent caregivers expressed wanting more information on exercising and more recipes (including healthful recipes to use in the summer, weekly menus, and more recipes for low-cost meals). Community educators expressed their desire to keep the newsletter in circulation because the information was important and was a valuable resource that they could adapt for the local populations they worked with, but they gave no recommendations for changes.

In conclusion, *Nourishing the Next Generation* was a theory-based newsletter, mailed from a respected agency six times per year for five years, that was tailored to low-income grandparent caregivers. Each issue disseminated small amounts of practical, specific, “how-to” nutrition- and wellness-related information that addressed topics identified as being of concern to this population and that used recommended word choice, format, and design principles. *Nourishing the Next Generation*’s two main intervention strategies were education (to increase readers’ awareness and knowledge) and persuasion (to affect readers’ attitudes, motivation, and confidence by inducing positive/negative feelings, and to stimulate action towards more healthful behaviors). Results show that the newsletter was perceived to be very effective in improving wellness-related awareness, knowledge, motivation, and confidence to follow recommendations for healthy eating and physical activity, and that reading it led to many self-reported positive

changes in various nutrition, physical activity, and other wellness practices among almost all (91 percent) of the small number of grandparent caregivers and their families who responded to the survey. In addition, its contents were used extensively to disseminate information to wider audiences by many (70 percent) of the small number of responding community educators who received the electronic version of the newsletter. Including grandparent caregivers in wellness-related educational programs could be a good approach to target healthy lifestyle practices of both older and younger generations. Intergenerational programs that include nutrition and wellness topics can lead families and individuals to healthier futures. Encouraging family members to cook together, eat together, and be more physically active can strengthen family connections and bring about a more healthful lifestyle. Targeting grandparent caregivers with nutrition and wellness education may help improve not only the lives of their grandchildren but also their own. This type of intervention could be useful for other populations who have limited amounts of time for education, yet who could benefit from targeted pieces of information that prompt them to take action and help them to focus on healthful behaviors to include rather than behaviors to exclude. We conclude that an appropriately designed newsletter can effectively improve the health of a large number of people, yet has limited costs, and thus, is an excellent public health method.

Theoretical Implications

Results of this study point to suggestions for future educational practices. This study helped identify effective aspects of written education materials, especially components that grandparent caregivers thought were valuable to their lives and to their grandchildren's. These findings could lead to changes in the view of traditional family nutrition education, because grandparent caregivers, and grandparents in general, often play an important role in children's

lives. Results of this study showed that people appreciate educational material that is adapted to their needs, is relevant to their lives, and helps them to learn and do new things. Our findings may help creators of other nutrition and wellness education programs design print materials that are effective in promoting healthy behaviors. They may also help classroom educators to develop students' skills on how to tailor wellness-related education (especially nutrition and physical activity) to be used in their future work positions.

Practical Implications

A newsletter format for a nutrition and wellness educational intervention can be a good resource for communities, especially if people do not have a lot of discretionary time available. The development of a well-designed newsletter that includes themes relevant to the target population, and that prompts readers to take action by motivating them to include positive behaviors rather than exclude negative behaviors, could help improve well-being of the community. Printed or electronic wellness educational materials could help those working in the Cooperative Extension Service and other community educators and health-related workers to diffuse the information to their clients/patients, or to use the information in their wellness sessions. A newsletter from a reputable source can help both the educators and health-related workers, and its general readers, to trust the information presented to be used. A newsletter tailored to grandparent caregivers may be a good way to improve children's overall well-being in the long term.

Limitations

This study had several limitations. One was that the design of the study lacked a control or comparison group. In addition, the majority of the respondents were women and results may be different for their male counterparts. Another limitation was its very low response rates. Thus,

response bias was likely, and results are not generalizable to a wider population. Very likely, most of the responding grandparent caregivers and community educators valued the newsletter more than those who received the newsletter but were not interested enough to respond to the survey, despite the incentive offered for returning the survey. Because of the small percentage of respondents, the statistical analysis was only descriptive and no causal inferences or statistical comparisons between groups based on length of receipt of the newsletter were done.

All data for this study were self-reported and there likely is response bias for this, as well. Self-report measures are susceptible to systematic bias, in particular to response set and social desirability biases. As with all self-reported data, respondents may have over- or under-estimated their knowledge or behavior changes, for example, and even though confidentiality was assured, respondents may have tended toward what they believed to be more socially-acceptable responses. A caveat to this limitation is that many of the self-reported positive behavior changes of the grandparent caregivers were responses that were handwritten in reply to the survey's open-ended questions.

Future Studies

Since a newsletter may seem impersonal to some people, a combination of printed educational materials and in-person 'live' sessions could be a way to help people clear their misconceptions about nutrition, learn more about wellness, and be included in hands-on activities. It could also keep themes in the newsletter updated as to what the participants are experiencing. Of course, this would require scheduled time/transportation/child care/mobility commitments, which many in the grandparent caregiver population are unable to meet.

Another area to explore could be using the newsletters with those non-skipped-generation parents who have little time to attend in-person sessions on wellness yet who may benefit from

receiving periodic written material that would help them to prepare healthful snacks for their children, for example, or increase their awareness of nutrition and physical activity recommendations.

Furthermore, since the responding community educators made such judicious use of the newsletter, an electronic newsletter could be tailored to them that includes themes relevant to their communities and that they can use in their own periodic articles and wellness sessions. This might alleviate the burden of each of them having to create research-based educational materials and might help the communities that they work with to improve their nutrition and physical activity awareness, knowledge, motivation, confidence, and practices.

Chapter 6 - Field Experience Report

Summary

This field experience objective was to provide public health experience outside academia in order to apply the skills and knowledge acquired during the public health courses as well as emphasis courses. Meadowlark Hills (MLH) Retirement Community, a not-for-profit organization located in Manhattan, Kansas, served as the agency to complete my field experience. MLH has an innovative senior living approach that embraces a person-centered philosophy.

The specific objectives of this field experience were to integrate public health nutrition knowledge in a practice setting; experience organizational structure, program administration, coordination, and community relationships; create nutrition education handouts for residents and staff of MLH; and demonstrate creativity and teamwork in the development of public health activities. This field experience consisted of nine weeks of rotations in the following departments: administration, home health, finance, social work, resident services (transportation), Parkinson's program, memory program, and dietetics. My main project at MLH was to develop educational materials for staff and residents about hydration, constipation, bone health, and possible dietary protein-drug interactions.

Subject keywords: public health nutrition, nutrition education, older adults.

Purpose

As a requirement to earn a Master in Public Health degree, a field experience is required. The objective of this field experience is to provide public health experience outside academia and allow the student to apply the skills and knowledge acquired during the public health courses as well as emphasis courses.

Agency

Meadowlark Hills (MLH) Retirement Community served as the agency to complete my field experience. MLH is a not-for-profit organization located in Manhattan, Kansas, and was founded in 1980 as a better living option for elders. MLH is recognized worldwide for its innovative senior living approach that embraces a person-centered philosophy (Meadowlark Hills, 2016). This agency offers to seniors: independent living, assisted living, 24 hours per day skilled nursing care, post-acute recovery nursing care, support with memory and dementia issues, and home health care services. It also offers several amenities, for example, exercise classes, Thai chi, yoga, chair exercise classes, religious opportunities, and support groups, to name a few.

MLH supports approximately 400 nurses and other employees, 130 residents in healthcare households, 40 residents in assisted living and 200 residents in independent living. This agency is committed to enhancing the life of senior citizens by nurturing individuality, values, independence, and community.

The Parkinson's Program Leader & Memory Program Leader served as the preceptor for my field experience. She began working for MLH in 2005 and is in charge of community-based and MLH education and outreach programs.

Objectives for My Field Experience

- Integrate public health nutrition knowledge in a practice setting.

- Experience organizational structure, program administration and coordination, and community relationships.
- Complete nutrition education handouts for residents, staff of Meadowlark Hills, and the Parkinson's program.
- Demonstrate creativity and teamwork in the development of public health activities.

Scope of Work

I rotated through the following departments inside MLH: administration, home health and therapy, finance, social work, resident services (transportation), Parkinson's and memory program, and dietetics. My main project at MLH was to develop educational materials for staff and residents about hydration, constipation, bone health, and possible dietary protein-drug interactions.

Summary of Weeks

Week 1- Parkinson's Program & Dietetics

Along with the Registered Dietitian (RD) and the Parkinson's Program Leader, this week was used to define the topics and objectives for the nutrition education handouts for staff and residents. Since MLH has post-acute recovery nursing care, there was a need for educational materials that staff could use or give to residents once their stay at MLH ended. The main objective of these handouts was to provide the readers with simple information that could be applicable once they were in their homes. I also helped to update some social media for the Parkinson's program and helped prepare educational materials for speech/swallowing consultations.

Week 2- Parkinson's Program & Dietetics

I helped distribute information for sponsorship to local businesses. The main goal of this task was to let people know about the Parkinson's program and some future events. This program is free of charge for the person affected with Parkinson's, so sponsorship is one of the main monetary resources the program has. During this week, I also worked on designing some of the handouts that were asked for by researching online tools to help make the design step easier.

With the RD, I went to a Diabetes Support Group. This group gets together every other month and for this session, they had a pharmacist as an invited speaker. The speaker explained how different types of medications should be used and how the medicines regulate metabolism.

Week 3- Social Work

The social worker invited a speaker to talk to the staff at MLH during the week I was there. The speaker was from Heritage Senior Behavioral Health, Wamego Health Center, Kansas. This organization has a process-oriented support group that helps people with early stages of dementia and older adults suffering from depression. The social worker invited him to provide the staff with tools so they can refer people to the program. Medicare pays for 80 percent and supplemental insurance covers 20 percent. Heritage's goal is to teach people how to cope and develop mindfulness as well as positive thinking; they concentrate on skill building. The speaker explained the differences between depression and grief and how sometimes these two are confused because they can overlap. It was also explained that when people are physically, mentally, and socially active they start to feel better. All of the staff left the meeting with written resources about the topic and the number to call in case they had referrals.

In this week, I was able to observe the social workers do assessments to help older adults find the appropriate long-term care services. These assessments are reviewed by the Area

Agency on Aging (AAA) and also can aid in the person's eligibility for Medicaid. Another function of the social worker is to handle hospital referrals of prospective residents in order to get properly reimbursed for the services. Medicare will cover some of the services MLH provides and the screening process helps acquire Medicare reimbursements. Additionally, one of the social workers is in charge of talking to the residents and making sure they are having a pleasant time at the facility. Any reports of abuse or complaints made by family of the resident, or the resident himself/herself, are handled by the social worker in order to try to solve the problem.

This week coincided with the Parkinson's monthly meeting where an occupational therapist was the invited speaker. In this meeting, people affected by Parkinson's were able to see and learn about techniques for everyday tasks and different therapy equipment. People affected by Parkinson's sometimes have a hard time dealing with dyskinesia, stiffness, and tremors, and all of these prevent them from performing some everyday tasks. Participants of this session were very grateful for the information provided and were interested in some of the equipment the occupational therapist brought to the session. One of the benefits of being part of the Parkinson's program is that some of the equipment pieces are free of charge in case the person affected by Parkinson's is unable to pay for it.

Week 4- Financial Services

This was indeed the most informational week of my field experience. The people in charge of finances explained how the different departments of MLH work together to avoid losses. Each department has an individual financial statement that then is combined into one MLH financial statement. Correct control of finances helps the organization to re-invest and also to allocate resources. One of the persons in the finance department works closely with residents

and family members who need to apply for Medicaid in order to pay for MLH services.

Fortunately, I was able to see one of her consultations and learned some aspects that allow a senior to qualify for Medicaid services.

For older adults to be eligible for Medicaid services, they should have no more than \$2,000 combining all of their savings, checking accounts, cash bonds, or similar, plus a month of income. Medicaid will look at the last five years of all of their savings for any irregularity or illegal transferring. Some of the examples that may disqualify someone are irregularities in their savings including donations, paying for someone else's college, or giving money to sons and daughters. Medicaid is a shared program so, for example, if someone's income is \$800 monthly and they need \$8,800 monthly to pay for long-term care, Medicaid will pay only \$8,000 and the person will pay \$800. Medicaid does allow the person to have approximately \$60 monthly to pay for incidentals like haircuts or underwear purchases. If the person passes away, Medicaid will ask if some money could be paid back by looking at their savings account or any properties of the deceased. Medicaid will look at all other possible venues which would allow a person to pay for long-term care, for example, Veterans benefits, insurance, or income.

Week 5- Administration and Resident Services

The first two days of this week I was with the transportation-supply department. This department is in charge of helping residents get around town, get to medical appointments, schedule trips and provide the households with supplies (e.g., Band-Aids, toilet paper, diapers, wet wipes, shampoo, shower soap, and similar). The staff in this area are aware of the resident's needs, for example, they know which car type to use if the resident is very tall or if they are using a walker. They also understand the care the resident needs during his/her trips outside of

MLH and they may walk the resident to their doctor's office or go to a restaurant to bring the resident some iced coffee.

For the second part of the week, I rotated with the administration department. At one of the meetings I attended, they were talking about the annual inspection that the state does. They were also preparing for it because it was time for them to get inspected. The meeting served as a reminder of the procedures and policies MLH has and to explain to the staff what the inspection was about and that they should not worry if they saw unknown people around. As part of my rotation, the leader of the administration department sent me to do a "mock inspection" of three different households. Some of the points in the assessment included inspection of furniture, cluttering, food safety, hand washing, repositioning of residents, cleaning guidelines, care of residents, and assistance response. I took a long time to complete the first survey, as I had to get familiar with the tool and concepts. Since I had some doubts about what was right or wrong, I had to take pictures of the situations and ask the administrator if the situation was in order or if it had to be corrected. This helped me to unify concepts and to understand the view of the administrator. Regular inspections of the facilities help improve the daily services provided to the residents and locate potential hazards that can be corrected promptly.

In this week I also spent an entire afternoon talking to some residents and helping them organize their rooms and reading to them. I consider this essential for someone who works at a senior facility because identification with the residents will help understand their needs and help provide a better quality of care for them.

Week 6- Home Health & Therapy

For the first part of the week, I was with Home Health Services that have Nurse Aides, Licensed Practical Nurses, and Registered Nurses. This group of people provides home health

visits at MLH and outside of MLH, and their services can be private pay or paid by Medicare. They not only visit patients but also to manage admissions and discharges from MLH's post-acute recovery nursing care. They also screen the patients regarding their mental and medical status, as well in their abilities to do activities of daily living (ADLs). These health professionals have to be really careful coding the services they provide to avoid rejection by Medicare. The patients must meet specific qualifications to receive services.

I had the opportunity to go on a couple of visits with the nurse. The nurse checked vital signs of the patients, refilled their medication boxes, and checked if some prescriptions needed to be ordered. During this week, I helped home health services create two poster boards to be used to train the Nurse Aides in the services they should provide to patients, for example, check blood pressure, temperature, medications, ulcers, and do some housekeeping work.

On two days of this week, I was allowed to observe some therapy sessions with the patients. In one of the sessions, the patient worked on upper body strength; in another session, the person focused on the lower body; and another resident did therapy for fine motor skills. The therapy department has physical, occupational, and speech therapists who work together with the residents and patients to prolong independence, rehabilitate deficits, and prevent injuries.

Week 7- Memory Program

I helped the Memory Program Leader in some miscellaneous work, for example, making signs for their meetings and looking through educational materials about memory loss to find useful strategies that could be used in the memory meetings. The memory program hosts classes that teach techniques, strategies, and activities related to memory and cognition. A support group is also part of the program, as well as a class of Visual Thinking Strategies facilitated by an art educator from the Beach Museum of Art.

The memory program is also collaborating with The University of Kansas Medical Center to bring to the Manhattan community the Lifestyle Enrichment for Alzheimer's Prevention (LEAP!) course. I helped the Memory Program Leader coordinate with the University for Mankind (UFM) in Manhattan to schedule the LEAP course through them in order to make people in the community aware of the opportunity to learn practical information to promote brain health.

I was also able to attend a training session for a new program that MLH is implementing called Music & Memory. This program focuses on using music to "reawaken" senior citizens with memory loss, and revitalize them in order to improve their quality of life. In this training, some household coordinators and volunteers were present, and these people are the ones who will be in charge of implementing the program in their households.

Weeks 8 & 9 - Parkinson's Program & Dietetics

During these two weeks, I attended an "open house" at MLH. I was able to talk to residents and observe how the staff from MLH explained to customers and family members who they were and how they function at MLH.

With the RD, I was able to observe her reviewing residents' files and determine if there were any significant weight loss, pressure ulcers, or edema. The RD and the Certified Dietary Manager (CDM) do rounds in the different households to check on residents who are considered at risk for weight loss, have pressure ulcers, or significant edema. They also check the kitchens at each household to ensure food safety and adequate training of the homemakers.

The RD and the CDM plan the menu and coordinate it with the main kitchen. A project they recently launched was involving the residents in menu planning. This meeting was called "culinary corner". Residents were able to taste some of the recipes as well as choose from a list

of about 10 to 15 recipes which ones they liked the most and wanted to see on the fall menu.

This activity really engaged some of the residents and I think it was also beneficial in improving their sense of independence.

The Parkinson's Program Leader is also a Speech-Language Pathologist and I was able to accompany her to some consultations and learned the importance of companionship and cueing that some seniors need when they have issues related to swallowing. Also, I could appreciate the importance of multidisciplinary work when it comes to a resident's overall health because the Speech-Language Pathologist and the Dietitian worked together on many occasions to optimize safe swallowing. Furthermore, I attended one training that the Speech-Language Pathologist gave for a couple of Nurse Aides about speech and voice exercises. These exercises needed to be done during their regular home health visits to help residents maintain safer swallowing.

The major fundraising event of the Parkinson's program was getting close, so I helped to organize documents for the Speedy PD race that included teams' registrations, donations, and tracking of sponsors. I also assisted the Parkinson's Program Leader in a chair exercise class facilitating some of the exercises and helping residents to make the exercise effortful.

Development of Nutrition Education Pieces

The topics for the nutrition education pieces were chosen by the MLH Dietitian and Speech-Language Pathologist. They both had noticed some potential points of improvement if people could have reference materials that could help their overall health. The following topics were chosen: dehydration (Appendix D), constipation (Appendices E & F), bone health (Appendix G), nutritional shakes (Appendix H), and the amount of protein in food for people with Parkinson (Appendix I).

According to the Academy of Nutrition and Dietetics (Bernstein & Munoz, 2012), dehydration, constipation, and poor bone health are important medical conditions for older adults since many seem to struggle to obtain adequate intakes of fluids, fiber, vitamin D, and calcium. Also, there is a concern with polypharmacy in the older adult and adverse drug-drug and food-drug interactions.

In Parkinson's Disease (PD), some researchers have pointed out possible interactions of PD medications (specifically, levodopa) and protein in food. It is suggested that levodopa and high protein in the diet compete for transport across the blood-brain barrier, making the PD medication less effective (Fernandez et al., 2010; Virmani, Tazan, Mazzoni, Ford, & Greene, 2016). To help prevent the levodopa-protein interaction, some researchers propose protein intake redistribution or taking levodopa at least one hour before or after meals (Barichella et al., 2016).

For the information in the educational handouts, websites of the following organizations were used: PubMed, National Parkinson Foundation, The Academy of Nutrition and Dietetics, Michael J. Fox Foundation, and the Center for Movement Disorders and Neurorestoration. Furthermore, the guidelines from the National Kidney Disease Education Program were used to determine what types of food were low or high in protein content, and the USDA food database was used to determine the protein content in food. Additionally, for the constipation recipes handout, the following websites were used: www.healwithfood.org, www.foodnetwork.com, and the University of Michigan Health System.

For the layout of the information, the guidelines from the National Institute on Aging (2007) were followed. They advise that for written materials to be friendly to older adults they must have the following:

- Clear, specific, and direct information, omitting unnecessary words.

- Limited number of key points per section, since only a few could help the reader to take action.
- Positive statements, not negative ones.
- Use of active voice.
- Examples relatable to their lives.
- Information broken into sections.
- No tables or complex diagrams that may be hard to understand.
- No long scientific words that not everybody would understand.
- Easy to read font type and size, with the letter size at least 12 point, 14 point is better, and no use of all capital letters because it can be difficult to read.
- White space for the readers to rest their sight.
- No blue, green, and yellow in close proximity because it could be challenging to tell them apart.
- Contrast between background and letters, with light background and dark letters.

To create the educational materials, I used “Word” and “PowerPoint” for the handouts on hydration and constipation. For the bone health and nutritional shakes handouts, I used the website www.canva.com to improve aesthetics. This website comes with many no-cost graphic design templates that can be modified to personal needs. Furthermore, since the educational piece on protein in foods needed to be a booklet, a search for free websites like canva.com was performed. After trying many different resources, the website www.cliptomize.com was chosen as the best option to create the booklet on protein in foods. This website also offers free booklet templates, pictures, and figures that can be modified and then downloaded in a pdf format to print.

Explanation of the Nutrition Education Materials

The team (Speech-Language Pathologist, RD, and I) recognized that background information about dehydration and constipation and some symptoms was necessary. It was decided to include in the handouts a motivational phrase or sentences that prompted the reader to take action, for example, “you can do something about it” or “be proactive, take action now!” After these phrases, some bullet points followed. The bullet points were to give the readers ideas on how to take action and also to give them different choices.

For the hydration handout, a list of sources of liquids that MLH provides was included to remind the readers they can buy these products at MLH facilities.

I developed two handouts on the constipation topic. In the first one, a list of foods that may cause constipation was provided to alert the reader of foods to eat in moderation. Also, people with Parkinson’s disease have a higher prevalence of chronic constipation, and this was why a disclosure about Parkinson’s was embedded at the end of the handout. The second one featured different recipes the reader could try to fight constipation. For this second handout, I read articles about constipation and, according to the food items the authors discovered that could help prevent constipation, I next looked for recipes that included those food items. Pictures of the food items beside the recipes were embedded to help the reader associate the food with the information. The names of the foods were bolded to help the reader spot where the ingredient was in the recipe.

For the bone health handout, a similar approach was used. The handout contained some background information, but this handout was specifically designed for people with Parkinson’s since, according to research, they seem to struggle with this as the disease progresses. Some common symptoms of people with Parkinson’s were included, for example, “people with PD are

at an increased risk of osteoporosis due to low levels of vitamin D, hormonal changes, age, and intake of antidepressants.” The population with PD that MLH has is always very curious about their disease and like to know as much as they can about PD symptoms and challenges. Tips to increase bone health were included and some keywords were bolded to help the reader focus on that information. Pictures were embedded next to the information to help the reader make visual associations.

A need arose when doing my rotation with the dietetics department. The RD wanted to improve the flavor of the nutritional shakes that some of the residents were taking and needed a handout to give to the homemakers in order for them to make the shakes. Thus, I created a handout that included small recipes, as well as the name of the shake.

In the booklet for the content of protein in foods, it was decided to call it “My low-high protein food book for Parkinson’s Disease”. This handout also contained some background information about the timing of medications and protein in meals. Since the research that I found did not contain a cut-off point for what is low or high protein foods for people with PD, the cut-off points from the National Kidney Disease Education Program were explained in the booklet. A space for notes was included in case users wanted to record their food intakes and symptoms before and after meals. The different food items were divided into three categories: “foods low in protein”, “foods high in protein”, and “plant foods high in protein”. Each page of the booklet had the title of the food group to avoid any confusions for the reader. Plenty of white space and illustrative pictures were included in the booklet as well, to help the reader rest their sight, make associations, and take notes if needed.

After I completed all of the educational materials, they were submitted for approval to the Dietitian and Speech-Language Pathologist. They gave suggestions and comments and after

three to four reviews, the handouts were ready for the Community Relations Director to give final approval. A survey for the residents and staff (Appendix J) was also designed to inquire about the helpfulness of the handouts. The information obtained from this survey will not be disclosed in this report due to confidentiality agreements at MLH.

Conclusions

During this field experience, I was able to integrate public health knowledge into a practice setting by creating educational materials for residents and staff of MLH. Also, by rotating in the different departments, I was able to understand the structure of an innovative retirement community and support the organization with different miscellaneous and educational tasks.

A great lesson learned was how important it is to work with a multidisciplinary team. I worked in multidisciplinary teams in order to promote well-being and independence of the residents. Losing independence is a situation that most older adults experience when they become injured or sick. MLH is focused on prolonging the person's independence to improve quality of life. This was reflected in their "culinary corner", therapy, memory and Parkinson's programs, Home Health Services, and transportation services.

I experienced the importance of training the trainer because sometimes one or two health professionals cannot reach every patient. It is in these moments when they need to rely on other health professionals who can teach the patient how to maintain their health both inside and outside of the facility. If the staff does not have knowledge of helpful programs or the correct health information, they may never advise residents on these topics in order to improve their quality of life.

In addition, allocation of resources is crucial in public health as well as in a not-for-profit organization. For example, having qualified people assessing referrals and residents helps the agency acquire proper reimbursement and allocate resources where they are needed most.

Learning how Medicaid and financial services work was very eye-opening. Although the Master of Public Health program has a Health Care Administration class as a required course, being able to see how much paperwork is required to apply for Medicaid resources alone was extremely informative and helped me put into perspective the information learned in class.

Working with business donors helped me realize the crucial role that they have in providing free services to residents, as is the case for the Parkinson's program. Also, sharing the program's information is crucial to make people aware of its accomplishments and the future directions of the program. This dissemination of information helps bring new contributors as well as new users of the program.

It is important that everyone in the organization is in sync to provide high quality service to the senior population. This includes understanding their needs, likes, and dislikes to support the resident with an atmosphere of family and true care.

Public health is more than just ensuring the population's safety. There is a need for constant innovation as challenges appear and needs change. The older population is increasing as "baby boomers" retire, and this encourages public health advocates to be innovative and support good programs that can help older adults to prolong independence and overall health in all areas of their lives. This may help ease the health care burden.

In addition, the creation of nutrition education materials for older adults requires detail and care. Knowledge of the target population is crucial to developing effective education pieces, since by knowing their interests and challenges, the written materials can be tailored accordingly.

Furthermore, the use of technology when designing educational pieces can enhance appearance and creativity that might help the reader be more engaged.

Alignment with Core Competencies and Emphasis Area Competencies

This field experience was valuable to my public health training. The core courses and the emphasis courses I took prepared me for some of the challenges I faced at MLH. Courses such as environmental health and health care administration helped me to understand the risk of possible contaminants in the households' kitchens, how health care and Medicaid benefits work, and the importance of ethical and legal procedures inside a not-for-profit organization. In addition, when doing research and developing the educational handouts, knowledge of biostatistics and epidemiology helped me to comprehend and identify how disease or health issues affect older adults.

During my rotations, especially my social work rotation, I was able to observe how social and behavioral bases are crucial when one is in a consultation or handling economic or environmental challenges with residents and their family members.

My nutrition emphasis courses were fundamental for the development of the nutrition education pieces. These courses helped me to understand how aging affects nutritional needs, how nutrition may help decrease the symptoms of chronic diseases, and the importance of helping people make positive behavior changes.

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Appendix A - Two Sample Issues of *Nourishing the Next Generation*



March / April / May newsletter



Nourishing the Next Generation

Practical advice for caring for your young ones with food, fun and love

For more support, contact your local extension office.

The Food Assistance Program can help people of all ages with low income buy nutritious foods for a better diet. To find out more, call 1-888-369-4777.

Material funded by USDA SNAP. USDA is an equal opportunity provider. Newsletter developed by Mary Meck Higgins, Ph.D., R.D., L.D., K-State Research and Extension Human Nutrition Specialist and Associate Professor, Dept. of Human Nutrition. Contents of this publication may be reproduced for educational purposes. All other rights reserved. In each case, credit Mary Meck Higgins, "Nourishing the Next Generation."



Growing Vegetables or Herbs at Home

Gardening offers many rewards. Use a garden for family fun as you spend time together planning, planting, caring for it, and harvesting. Also, growing vegetables or herbs will teach your grandchild that plants, like people, need food and water to grow and stay healthy. And it builds their self-esteem when kids see what they can grow! As your grandchild helps care for the growing plants, he or she will develop responsibility. Kids usually want to taste what they have watched growing, too. Be sure to wash your hands and fresh foods before eating!



Almost any herb grows well in a container. Veggies that you may want to help your grandchild grow in containers this spring are dwarf: beets, carrots, green onions, kale, lettuce, radishes or red chard. You could grow the plants in containers placed outside, such as on a porch or balcony, or by a sunny window in the house. To view the *Kansas Garden Guide*, with detailed info about how to plant, care for, and harvest vegetables, including how to grow container vegetables, visit the website: <http://ow.ly/Jm yoJ>

Source: Nibbles for Health, www.fns.usda.gov/sites/default/files/Nibbles_Newsletter_33.pdf



Nourishing the Next Generation

Practical advice for caring for your young ones with food, fun and love



Kids Benefit when Offered a Variety of Foods

You can help your grandchild be more likely to try new foods, and to like more foods. How? Offer him or her a variety of healthful foods at meals and snacks. It will be easier to plan nutritious family meals, too, if your grandchild likes many types of foods.

You are the most important influence in helping your grandchild learn about food. Offer a new food at the beginning of a meal or snack. Then, let your grandchild choose how much of it to eat. This month, try some foods new to your family, or familiar foods served in new ways! Here are three ideas: a new kind of low-fat cheese, a new recipe for canned or frozen fish, and a new way to serve a vegetable. For instance, prepare the recipe below as a new veggie side dish to go with a favorite meal. Source: www.choosemyplate.gov

“Making meals and memories together”

Crunchy Baked Kale Chips ~ *Makes 6 servings, each about 1 cup*

Serve as an appetizer, a casserole topping, a side dish or a snack

Ingredients:

- 1 bunch of fresh kale, any kind (about 2/3 pound)
- 2 teaspoons cooking oil
- 1/8 teaspoon salt, some ground pepper, and some garlic powder



Directions:

1. Wash your hands and work area.
2. Remove the tough center ribs and stems of the kale pieces, using a sharp knife or clean kitchen scissors. Discard or refrigerate them for another use, if desired.
3. Tear the leaves into chip-sized pieces. (Can your grandchild help you do this?)
4. Fill a deep bowl with cool water. Place a handful of leaves at a time in the water and swish them around to remove any dirt and sand. Place leaves on a clean towel. Dry them very well with clean towels or in a salad spinner. (Can your grandchild help?)
5. Preheat oven to 350 degrees F.
6. Place kale in a large bowl. Add oil and seasonings, and stir gently until kale is coated.
7. Arrange some of the kale in a single layer on a baking sheet. Bake for about 10 minutes, or until dry and crisp. Transfer kale chips to a large plate to cool.
8. Repeat step 7 until all of the kale is baked. Serve.
9. Store leftovers in a sealed bag with the air pressed out of it for up to three days. Reheat chips briefly in the oven if they become limp.

Nutrition Facts per 1 cup: 30 calories, 2g fat, 0g saturated fat, 0g trans fat, 0mg cholesterol, 60mg sodium, 3g carbohydrate, 1g dietary fiber and 1g protein. Daily Values: 60% vitamin A, 60% vitamin C, 4% calcium and 2% iron. No added sugars.



Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan, KS.
K-State Research and Extension is an equal opportunity provider and employer. Kansas State University, County Extension Councils, Extension Districts and the U.S. Department of Agriculture Cooperating.

Wishing You Joyful Holidays and a Happy New Year!

December / January newsletter



Nourishing the Next Generation

Practical advice for caring for your young ones with food, fun and love

For more support, contact your local extension office.

The Food Assistance Program can help people of all ages with low income buy nutritious foods for a better diet. To find out more, call 1-888-369-4777.

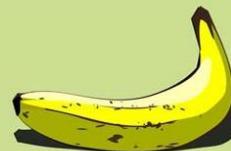
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Nourishing the Grandkids with Between-Meal Snacks

Offering your grandchild snacks is a great idea (EXCEPT as a reward for "good" behavior, which is not recommended). Choose consistent snacking times, such as mid-morning and mid-afternoon, or right after naps. Keep portions small enough that your grandchild can enjoy eating again at mealtimes. To avoid choking problems in young grandchildren, be sure to monitor the size of the pieces and the hardness of the foods that you offer, and do not allow children to run around while eating.

Many quick-to-serve foods and beverages can be nourishing snacks. If you choose to provide a packaged snack food, read the Nutrition Facts label to find foods low in added sugars, salt and saturated fat. Suggestions for no-cook or pre-cooked snacks include cool tap water served with: raw vegetables dipped in hummus, peanut butter, low-sodium salsa or salad dressing; unsweetened fruit; hard-boiled egg; milk with raw or cooked rolled oats or another unsweetened whole-grain breakfast cereal; whole-grain bread, pita, tortilla or crackers; milk; yogurt; and low-fat cheese.





Nourishing the Next Generation

Practical advice for caring for your young ones with food, fun and love



Increasing Indoor ‘Active Time’

You can have a lot of fun playing inside with a young grandchild when the weather outside is harsh, while also encouraging physical activity. Here are some ideas:

- ♥ Skip, march, sneak slowly, jump, slide your feet, tip-toe, crawl, walk sideways and backwards, and roll around in some of the rooms in your house.
- ♥ Circle your arms at your sides, pedal an imaginary bicycle, shrug your shoulders, reach up high, bend down low, twist at your waist, do swimming front and back strokes with your arms, and give yourselves big bear hugs.
- ♥ Play imagination games, such as:
 - ♥ Acting out songs and stories.
 - ♥ Guessing which imaginary huge letters of the alphabet or numbers he or she has drawn in the air – first “draw” with hands, then with feet.
 - ♥ Pretending to play different musical instruments.
 - ♥ Moving like animals — hop like a kangaroo, wiggle your nose like a rabbit, pounce like a cat, waddle like a duck, stomp like a bull, wave your arms like an elephant’s trunk, flap your arms like a bird, wiggle like a snake, gallop like a horse, jump like a frog, roll over like a pig in the mud, and swim like a dog.
 - ♥ Moving like tree branches in the wind, stomping and clapping like thunder, waving your arms like a lightning bolt, spinning like a tornado, moving up and down like an ocean wave, twirling like a leaf in the breeze, turning yourselves into rainbows.
- ♥ Throw a few empty plastic bags in the air and try to catch them before they land.
- ♥ Toss a balloon or a soft toy back and forth to each other, or into a box.
- ♥ Turn on lively music and dance.



Source: Adapted from [Get Moving Today Activity Calendar](http://www.healthychildcare.org/PDF/LetsMove%20CalendarENGLCalendarFULL.pdf), www.healthychildcare.org/PDF/LetsMove%20CalendarENGLCalendarFULL.pdf

Using Cost-Cutting Foods in Tasty Meals and Snacks

Feeding a grandchild adds to your grocery bills! Certain foods are typically lower-cost options all year, and many times they are also the advertised sale items at the grocery store. For protein foods, cooked dried beans and peas, lentils, canned tuna and peanut butter are generally the best buys. Lower-priced vegetables include potatoes, carrots, cabbage and canned green beans and tomatoes. For fruit, bananas, apples, raisins and 100% frozen juices are often the lowest in price. Large containers of rolled oats are both versatile whole grains and low in cost. For dairy, fluid milk is usually the best bargain.



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Appendix B - Grandparents Survey



Nourishing the Next Generation

Practical advice for caring for your young ones with food, fun and love

s-1

Dear grandparent raising one or more grandchildren or another child relative,

Would you please help us evaluate the newsletter, *Nourishing the Next Generation*? It will take you 5 to 10 minutes to answer the questions below and on the back. Please send us your responses in the next two weeks, using the enclosed postage-paid envelope. We will use the information that you share to improve our newsletter, and will summarize our results in published research magazines. Your participation is completely confidential and voluntary, and you may skip answering questions if you wish. You will have no penalty if you decide not to participate. If you have any questions, please call Mary Meck Higgins (phone number 785-587-7226) in the Human Nutrition Department at Kansas State University. We greatly value your opinions, and appreciate your responses – thank you!

What do you do with the *Nourishing the Next Generation* newsletters that are mailed to you about every other month? (Please check all that apply)

- I do not usually read them.
- About half the time I glance through or read them, and half the time I do not.
- I usually quickly glance through them.
- I usually read them completely.
- I keep them and refer back to them sometimes.
- I keep them but I have not looked at them again.
- I give them to somebody else to read. If yes, please describe: _____
- I throw them away or recycle them.

Comments?

Would you recommend the newsletter to other grandparents raising a grandchild or another child relative? Yes, very much. Yes, somewhat. No, not at all.

Comments?

What is your opinion about **information** in *Nourishing the Next Generation* newsletters?

- It is visually appealing: Yes, very much. Yes, somewhat. No.
 - I understand the information: Yes, very much. Yes, somewhat. No.
 - The information is helpful or provides new ideas for me to use: Yes. No.
 - I have talked about information in them with somebody else: Yes. No.
 - I have put into practice specific information from a newsletter: Yes. No.
- If yes, please describe:

What is your opinion about **recipes** included in some of the newsletters?

- They are helpful: Yes, very much. Yes, somewhat. No, not at all.
- I have prepared one or more of the recipes: Yes. No. If yes, please describe:

Has reading *Nourishing the Next Generation* newsletters led you to have more **awareness about recommendations** for:

- Healthy eating: Yes, very much. Yes, somewhat. No.
 - Physical activity: Yes, very much. Yes, somewhat. No.
- If yes, please describe:

Has reading the newsletters **led you to do any of these?** (Please check all that apply)

- Eat more meals together as a family: Yes. Considering it. No.
- Offer low-cost meals and/or snacks that are more healthful to your grandchild/grandchildren: Yes. Considering it. No.
- Spend more time in the kitchen with your grandchild/grandchildren: Yes. Considering it. No.
- Improve your food safety practices: Yes. Considering it. No.
- Limit the 'screen' and sitting-down time of your grandchild/grandchildren: Yes. Considering it. No.
- Increase the physically-active time of your grandchild/grandchildren: Yes. Considering it. No.

Have the newsletters led you to **do anything else differently** with your grandchild/grandchildren, or to **change anything about your family's eating or physical activities?** Yes. I am considering doing something differently. No.

Please describe:

Has reading *Nourishing the Next Generation* newsletters led you to **learn something new**, or to **learn more** about a topic, or to **recognize anything that you could change** to allow you and your family to eat or play more healthfully?

- Yes, very much. Please describe:
- Yes, somewhat. Please describe:
- No.

Has reading *Nourishing the Next Generation* newsletters led you to feel more **motivated or confident** to follow recommendations for healthy eating or physical activity?

- Yes, very much. Please describe:
- Yes, somewhat. Please describe:
- No.

Do you have **other comments, or suggestions** to make the newsletters more meaningful to you in your everyday grandparenting?

Please tell us **about yourself and your household:**

My grandchild/grandchildren living with me are ages: _____

My age is: 40-49. 50-59. 60-69. 70 or older.

I am: Female. Male.

I am: Non-Hispanic/Non-Latino. Hispanic/Latino.

I am: White. Black. Asian. Other: _____

I am: The only adult in my household. One of the adults in my household.

I/We have been taking care of at least one grandchild for _____ years.

I/We prepare most meals at home, except for school lunch: Yes. No.

Most meals that I/we prepare at home are: From "scratch." Packaged foods.

I/We have enough kitchen equipment at home to cook: Yes. No.

We eat out: 0-1 times per week. 2-3 times/wk. 4 or more times/wk.

Trying to eat healthfully is important to me: Yes. No.

I encourage my grandchild/grandchildren to eat healthfully: Yes. No.

I/We have a hard time buying healthy foods on our food budget: Yes. No.

Appendix C - Survey to Community Educators

Would you please help us evaluate the newsletter, *Nourishing the Next Generation*? It will take you 10 to 15 minutes to answer the questions. Your participation is completely confidential and voluntary, and you may skip answering questions if you wish. You will have no penalty if you decide not to participate. We hope to publish our results along with the responses from our readers. If you have any questions, please call Mary Meck Higgins (phone number 785-587-7226) in the Human Nutrition Department at Kansas State University. We greatly value your opinions, and appreciate your responses – thank you!

How important is the information in the newsletter *Nourishing the Next Generation* to you as you do your community work?

- Not important
- Somewhat important
- Important
- Very important

What is your opinion about information in *Nourishing the Next Generation* newsletters?

	Yes	No
I have used the information with the community I work with	<input type="radio"/>	<input type="radio"/>
The information is important to the population I work with	<input type="radio"/>	<input type="radio"/>
The information is helpful or provides new ideas for the readers	<input type="radio"/>	<input type="radio"/>

If you have used the newsletter with the community you work with, please describe

What do you do with the *Nourishing the Next Generation* newsletters that are emailed to you about every other month? (Please check all that apply)

	Yes	No
I email them to others	<input type="radio"/>	<input type="radio"/>
I print them for others to read	<input type="radio"/>	<input type="radio"/>
I delete them	<input type="radio"/>	<input type="radio"/>
I do not usually read them	<input type="radio"/>	<input type="radio"/>
About half the time I glance through or read them, and half the time I do not	<input type="radio"/>	<input type="radio"/>
I usually quickly glance through them	<input type="radio"/>	<input type="radio"/>
I usually read them completely	<input type="radio"/>	<input type="radio"/>
I keep them and refer back to them sometimes	<input type="radio"/>	<input type="radio"/>

If you email the newsletter to others, please describe to whom, and to approximately how many:

Would you like to comment about what you do with the *Nourishing the Next Generation* newsletters?

Have you received feedback from anyone you emailed the newsletter to?

- Yes
- No

If you have received feedback from anyone you emailed the newsletter to, please describe

Please think about the community you work with and answer the following

	Yes	No
Trying to eat healthfully is important to them	<input type="radio"/>	<input type="radio"/>
They encourage their grandchild/grandchildren to eat healthfully	<input type="radio"/>	<input type="radio"/>
They have a hard time buying healthy foods on their food budget	<input type="radio"/>	<input type="radio"/>

What is your opinion about information in *Nourishing the Next Generation* newsletters?

	Yes, very much	Yes, somewhat	No
It is visually appealing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information is easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please choose your reaction to the next statements regarding the newsletter *Nourishing the Next Generation*

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I don't know
The newsletter is a good nutrition education method to reach grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The content of the newsletter is appropriate for grandparents caring for their grandchildren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The themes in the newsletter target the needs of grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The recipes in the newsletter are helpful for grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The recipes in the newsletter are easy to make for grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ingredients used in recipes in the newsletter are familiar to grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ingredients used in recipes in the newsletter are of easy access to grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please choose your reaction to the next statements regarding the newsletter *Nourishing the Next Generation*

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The newsletter focuses on behaviors to include rather than those to exclude	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information in the newsletter is practical for grandparent caregivers to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information in the newsletter is relevant for grandparent caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The newsletter incorporates experiences that grandparent caregivers can relate to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The newsletter motivates readers to make nutrition-related changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The newsletter motivates readers to make physical activity-related changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The newsletter motivates readers to make food safety-related changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you have suggestions to make the newsletters more meaningful for everyday grandparenting?

Do you have other comments regarding the newsletter?

Please tell us about yourself

What type of agency do you work for?

What state do you work in?

How long have you received the newsletter?

- Less than 1 year
- 1 to 2 years
- 2 to 3 years
- 3 to 4 years
- 5 or more years

Who sends you the newsletter?

My age is

I am

- Female
- Male

I am

- White
- Black
- Asian
- Other

If your ethnicity is not described in the previous questions, please describe

Please tell us your level of education

- High School degree
- Trade/technical/vocational training
- Associate degree
- Bachelor degree
- Master degree
- Doctoral degree

Again, we greatly value your opinions, and appreciate your responses - Thank you!

Appendix D - Handout on Dehydration

Dehydration



As we age, the sensation of thirst may be decreased. When we do not drink enough water, we begin to dehydrate. During the day, we are constantly losing water by sweating, urinating, defecating, and breathing and this too can contribute to dehydration.

Some of the symptoms of dehydration are low blood pressure, weakness, blurred vision, headache, poor attention, concentration and memory, dizziness, palpitations, dry mouth, and constipation. When you feel some of these symptoms, ask yourself "Have I drank enough water today?"

If your desire to drink is diminished, be proactive! Start voluntarily drinking at least 8 to 10 glasses (64 to 80 ounces) of liquid a day like water or fruit juices. Sipping water from your mug or water bottle throughout the day, adds up to staying hydrated.

Why is water so important? Your blood needs water to carry all the vitamins and minerals through your body. It also helps lubricate the joints and the eyes. If you are doing therapy, your muscles need to be well hydrated to regain strength. Also, exercise makes you sweat so you need to hydrate before, during and after physical exercise. Urinary infections can be a consequence of not drinking enough water. When dehydration occurs, some bacteria in the bladder and urinary tract starts to grow, causing infection. A large glass of cranberry juice daily with preferably eight glasses (64 ounces) of water can help prevent against this infection.



So don't forget!
Stay Hydrated!

A blue water drop graphic containing the text "So don't forget! Stay Hydrated!"

Difficulties swallowing are a common symptom in Parkinson's disease. This can increase the risk of dehydration because individuals may not drink as much for fear of choking or embarrassment. When you are dehydrated, slowness, stiffness and gait instability may increase.

Juices are a good source of liquid. Here are some juice options that Meadowlark offers to you:

- Apple juice
- Grape juice
- Cranberry juice
- Prune juice
- Orange juice

If eating/drinking is difficult, talk to your doctor for a referral for a Swallowing Therapist. If you need a complete nutrition assessment, ask for a Dietitian referral. Updated July 2016.

Updated July 2016

Appendix E - Handout 1 on Constipation

Constipation



How do I know if I have constipation? You may have constipation if you have: less than three bowel movements per week, hard and difficult to pass stool, painful bowel movements or you feel that you had an incomplete emptying after defecation. There are a variety of reasons people become constipated: medications, gastrointestinal tract movements are slow due to disease, and not drinking enough fluids.

Constipation may lead you to develop hemorrhoids, fecal impaction, and increase your risk of bowel cancer. It can make you feel bloated, uncomfortable, and may even be painful. If stool is blocking your bowel it may interfere with the effectiveness of your medication due to decreased absorption. Also if you are constipated your appetite may decrease.

Concerned about all this? No worries. The best part is that you can do something about it! Here are some tips:

- Exercise helps you to remain more active. When you exercise not only are your muscles benefiting from it, but also your internal organs (i.e. gastrointestinal system).
- Drinking warm liquids at breakfast and consuming prunes or prune juice can help stimulate the bowel.
- Drink enough liquids in the day. Don't rely on thirst to drink! Try to increase water consumption by 1 glass/day. If your fiber intake is adequate (at least 30g a day) but you don't drink enough fluids, you will still be constipated.
- Eat five servings of raw vegetables and fruits. Some examples are a cup of cucumber, or tomato, a medium ripe banana or a medium apple.
- Eat fruits every day. Most of the fiber in fruits is in the skin, so if you are eating fruits like apples or pears, eat the skins.
- Choose raw or frozen veggies over canned options.
- Eat bran cereal or add bran to your regular foods.

Eating a lot of certain foods may cause constipation. Here are some examples of foods to eat in moderation:

- Dairy products (milk, cream cheese, sour cream, butter)
- Highly process food like bread, crackers, white rice, pastries, and white flour.
- Fast food
- Fried foods
- Foods high in sugar (desserts, pastries, donuts, ice cream)

gastrointestinal
Exercise
sweets
food vegetables
bran fruits stimulates
fast lifestyle
fluids Parkinson'sDisease
water bowel
sugar movements
constipation

Here is a natural recipe to help with constipation.

Mix together: ½ cup of applesauce, ½ cup of prune juice and 2 tablespoons of wheat bran (Miller's bran). Keep the mix in the refrigerator and take 1-2 tablespoons a day.

If you have Parkinson's disease, constipation may appeared even before motor symptoms start (tremor and stiffness). People with PD typically crave sweet foods, and these foods are usually low in fiber. Try the tips above to beat you constipation.

If eating/drinking is difficult, talk to your doctor for a referral for a Swallowing Therapist. If you need a complete dietetic assessment, ask for a Dietitian referral.

Sources: The American Dietetic Association, American Parkinson Disease Association, National Parkinson Foundation, Center for Movement Disorders and Neurorestoration, NCBI/PMC. Updated July 2016

Appendix F - Handout 2 on Constipation

Got constipation?

You may have Constipation if you have: less than three bowel movements per week, hard and difficult to pass stool, painful bowel movements or you feel that you had an incomplete emptying after defecation.



Meadowlark Hills

This handout contains recipes that may help with your constipation

Recipes you can make:

Option 1. ½ cup of applesauce + ½ cup of **prune** juice + 2 tablespoons of wheat bran (Miller's bran). Mix

Option 2. 1 cup apple sauce + 1 cup oat bran + ¾ cup **prune** juice. Mix

Keep refrigerated and start taking 1-2 tablespoons a day followed by 6-8 ounces of water or juice. If after two weeks you do not see any changes in your bowel movements, increase to 3-4 tablespoons a day.



It is believed that **prunes** have a laxative effect in mild constipation. **Prunes** also are full of antioxidants that might be beneficial for chronic diseases. Their high content of potassium might be beneficial for cardiovascular disease and its boron content may help in the prevention of osteoporosis.

Pears are high in fiber. A medium size pear contains approximately 5.5 grams of fiber. Scientific studies suggest that pears may have an important role in gut health. This fruit contains fructose and sorbitol which has been associated with laxative effects.



Juices you can make:

Option 1. 3 cups unpeeled **pears** + 1 cup ice cubes + 3 tsp of minced fresh peppermint. Blend everything and enjoy. Makes one serving.

Option 2. 2 cups peeled cube **pears** + 1 cup apple juice + 1 tsp grated ginger root + 1 cup crushed ice. Blend everything and enjoy. Makes one serving.



Updated July 2016

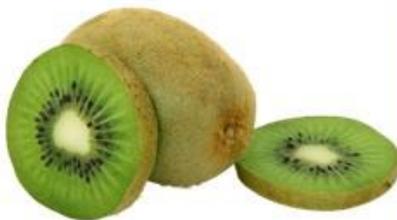
Don't let constipation "beet" you!



Try this soup:

3 medium **beets**, peeled and diced + 1 tbsp canola oil + 1 cup chopped onions + 1 pound diced carrots + 1 tbsp fresh minced ginger + 1 minced garlic clove + 6 cups vegetable stock
Directions: Heat oil in a large saucepan over medium heat. Sauté onion until golden brown. Add ginger and garlic and cook for 2 minutes, stirring frequently. Add **beets**, carrots, and stock. Cover & reduce heat to low and simmer covered until beets and carrots are tender, about 25 minutes. In a food processor, purée soup in batches. Taste soup and adjust seasonings.

One tablespoon of ground **flaxseed** contains around 2 grams of fiber and is easy to add to your recipes. For example you can add it to your smoothies, breakfast cereals (i.e. oats) or to your baking (i.e. muffins and breads). Also **flaxseeds** taste good when you mix them with your pancakes/waffles recipes.



A **kiwi** a day can help you soften your stool. You can add a kiwi everyday to your regular eating habits or use it in your recipes (i.e. juices, jell-o, salads). Here is an example:

1 cup of your nectar of choice + 4 skinned and chopped **kiwis** + 6 ounces of vanilla yogurt + 1 cup of ice. Blend everything together until smooth and enjoy!

Add **chia seeds** to your yogurt!!!

Chia seeds are a great source of fiber, but not only that, these seeds contain omega-3 fatty acids and have some anti-carcinogenic effects. You can add these delicious seeds to your yogurt or try it in "overnight oatmeal". Here is the recipe:

Combine in a ½ pint jar ¼ cup rolled oats, ¼ cup greek yogurt, 2 teaspoons **chia seeds**, 2 teaspoons of honey, 1 teaspoon ground cinnamon and ¼ cup of fresh blueberries. Mix everything well and put on the lid. Let it sit in your refrigerator overnight.



Updated July 2016

Appendix G - Handout on Bone Health

BONE HEALTH AND PARKINSON'S DISEASE

Increased age, low body weight, excessive alcohol consumption, smoking, limited sunlight exposure and low intake of calcium and vitamin D, can weaken our bones. When bones weaken they become porous, this condition is called **osteoporosis**. If our bones are weak, they might break from a minor fall or just from bumping into furniture.



People with PD...

- Face an increased risk of falls due to poor balance.
- Are at an increased risk of osteoporosis due to low levels of vitamin D, hormonal changes, age, and intake of antidepressants.
- Have symptoms like dry mouth (maybe due to medication), depression, apathy and swallowing difficulties which can decrease your appetite and the types and quantities of food and drink intake.
- May have fatigue that decreases your activity level and willingness to exercise.
- May have tremors that decrease the ability to self-feed or may make you feel embarrassed to eat in public.



Ways to increase Bone Health

Diet



Get enough **Calcium!** If you are 50 years old or older you need 1200mg of calcium a day, this can be found in 4 glasses of fortified milk or 6 ounces of cheese.

Some sources of **calcium** are calcium-fortified cereals, calcium-fortified orange juice, calcium-fortified milk substitutes (i.e. Almond or soy milk).



Vitamin D is also important for bone health and we need 0.01 mg a day. Some sources of vitamin D that you can include in your diet are: fortified food, fish liver oils, liver, and eggs. We need 10 micrograms of vitamin D a day.

Magnesium helps to strengthen your bones, relax your muscles, and in the activation of vitamin D. The recommended intake of magnesium is 350 mg a day. We can find this mineral in dark green vegetables (kale, collards, spinach, chard, Brussel sprouts, cabbage, and lettuce), dried beans, peas, broccoli, and whole grains.

BONE HEALTH AND PARKINSON'S DISEASE



Be attentive...

If you are taking Levodopa be attentive to dairy, fish, and meat, they are high in protein and can interfere with your medication. Try to take your medication at least one hour before or two hours after meals to optimize absorption.



Exercise

Exercising regularly helps your bones to be strong. Weight bearing activities are ideal! The goal is at least 150 minutes per week of moderate exercise.



Supplements

If you think you might need a supplement of Calcium, Vitamin D, or Magnesium ask your doctor or registered dietitian. They will assess if you need it, guide you in the amount, and how to take the supplement.



Sunlight

Sunlight helps activate Vitamin D, be sure to get a few minutes of sunlight every day on your face, hands and arms. If it's cloudy you might need more time and some windows may block the "good" sunlight. The ideal is that you can take a "sun bath" outdoors for 10 to 15 minutes a day making it a total of one hour per week.

I have Parkinson's and I'm beating it!


Meadowlark Hills

For more information please contact the Parkinson's Program at 785-323-3899

Sources: National Osteoporosis Foundation, Parkinson's Disease Foundation, Age and Ageing, American Parkinson's Disease Association, National Library of Medicine.
Updated July 2016

Appendix H - Handout on Nutritional Shakes



Nutritious shakes

SHAKES MENU

ADDING FLAVOR TO YOUR CURRENT SHAKE

TO SPICE THINGS UP HERE ARE SOME THINGS
YOU CAN ADD TO IT. THE AMOUNT ADDED
WILL DEPEND ON LIKING.

NUTS BUTTER (PEANUT OR ALMOND)

NUTELLA

EGGNOG

FLAVORED YOGURT

FROZEN SOFT FRUITS (BANANA, BERRIES,
CANNED PEACHES)

FRUIT JUICE

TROPICAL BANANA SHAKE

2 RIPE BANANAS

1/2 CUP CANNED PEACHES

1 CUP MANGO OR GUAVA

NECTAR

1/2 CUP PASTEURIZED MILK

3 ICE CUBES

BLEND ALL TOGETHER



BANANA FLIP

2 BANANAS

1 PACKAGE CARNATION
INSTANT BREAKFAST, VANILLA

FLAVOR

1 CUP MILK

2 TABLESPOONS ORANGE

JUICE CONCENTRATE

BLEND ALL TOGETHER



TUTTI-FRUITY SHAKE

1/2 CUP VANILLA ICE CREAM

1 PACKAGE INSTANT BREAKFAST,
VANILLA FLAVOR

1/2 CUP CANNED FRUIT

1/2 CUP HALF AND HALF CREAM

BLEND ALL TOGETHER

LEMON LIFT

1 CUP LEMON YOGURT
1 CUP MILK
1 BANANA
1 TEASPOON VANILLA EXTRACT
BLEND ALL TOGETHER

PEACHY CINNAMON SHAKE

1 CUP CANNED PEACHES
1/2 CUP PLAIN YOGURT
1/2 CUP MILK
1 TABLESPOON HONEY
PINCH OF CINNAMON
3 ICE CUBES
BLEND ALL TOGETHER

BURSTING BERRY SMOOTHIE

1/2 CUP UNCOOKED OATS
1 BANANA
8 STRAWBERRIES, FRESH OR
FROZEN
1/2 CUP FROZEN BLUEBERRIES
1/2 CUP FROZEN RASPBERRIES
1 CUP MILK
BLEND ALL TOGETHER



PB&B SHAKE

1/2 CUP PLAIN YOGURT
1 BANANA
2 TABLESPOONS PEANUT
BUTTER
1/2 CUP MILK
BLEND ALL TOGETHER

SHERBET SHAKE

1 CUP ANY FLAVOR SHERBET
1/2 CUP MILK
BLEND ALL TOGETHER



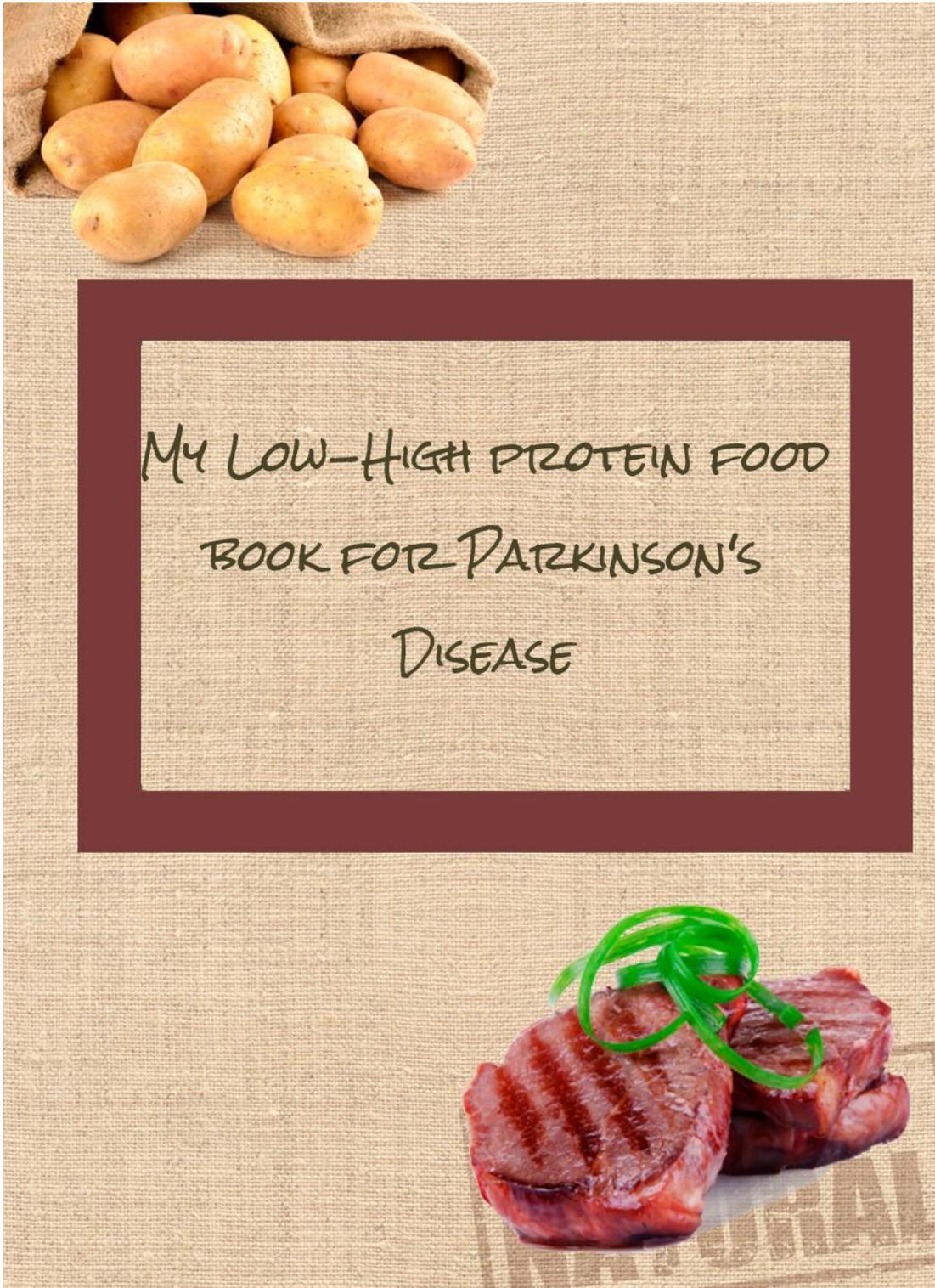
CARROT SHAKE

CARROT SHAKE
1 CUP CARROT JUICE
3/4 CUP PLAIN YOGURT
1 BANANA
1 TEASPOON VANILLA EXTRACT
3 ICE CUBES
BLEND ALL TOGETHER


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SOURCE: [HTTPS://WWW.UCSFHEALTH.ORG/EDUCATION/ILD_NUTRITION_MANUAL/HIGH-CALORIE_SHAKES_AND_SMOOTHIES/](https://www.ucsfhealth.org/education/ild_nutrition_manual/high-calorie_shakes_and_smoothies/)

Appendix I - Booklet on Protein in Food





Meadowlark Hills
Parkinson's Program

Timing of medications is very important. Sometimes medications can be taken with food and other times you have to be more careful.



VEGETABLES



BEEF

The amount of protein in foods may interfere with the absorption of your medications, decreasing its effectiveness. For example in Parkinson's disease, protein may interfere with the absorption of your Levodopa and Carbidopa and also decrease the transport of your medication to your brain.

With this handout you can learn which foods are low and high in protein. That way you can mix them better with your medications.

Proteins help our bodies in tissue maintenance and repair. They are the building blocks for muscles, bone matrix, and connective tissue. Proteins help in the transport of nutrients inside our cells and also help our immune cells. You can find protein in animal products as well as plant foods.

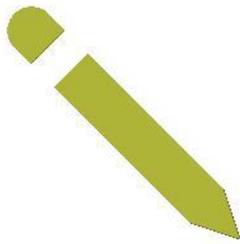
Taking your Parkinson's medications with high protein foods could decrease your "on-time" because the protein may interfere with the absorption of your medication making it work slower, or lessened. It is recommended that you take your medication one hour before or after your high protein meals.

Animal products like beef, pork, chicken, turkey, duck, eggs, milk, yogurt, cheese and fish are high in protein.

Some plant-based food like beans, peas, lentils, soy and soy products, nuts, almond butter, peanut butter and sunflower seeds are also high in protein.

However, there are some plant-based foods that are low in protein for example bread, tortillas, oatmeal, grits, cereals, pasta, noodles, rice, and rice milk.

There is no conclusive evidence that high/low protein intake with Carbidopa and Levodopa will affect your medication. However, it is important for you to keep track of your "on/off time" when you take your medication and what you eat.



You can use this space to take notes of what you eat and how it affects your "on and off time".



Foods Low in Protein

Unsweetened rice milk (8 fl oz),
0.7 gm protein

Corn tortillas, 1 unit (24gm),
1.4 gm protein

Bread sticks, 1 stick 7-5/8" (10gm),
1.2 gm protein

Corn Pasta, gluten-free, 1 cup (140 gm),
3.7 gm protein

Foods Low in Protein

Bread, white, 1 slice (1oz), 2.6 gm protein

Corn tortilla chips (1 oz), 2 gm protein

Quaker Instant Oatmeal (apples and cinnamon, dry),
1 packet (43g), 3.7 gm protein

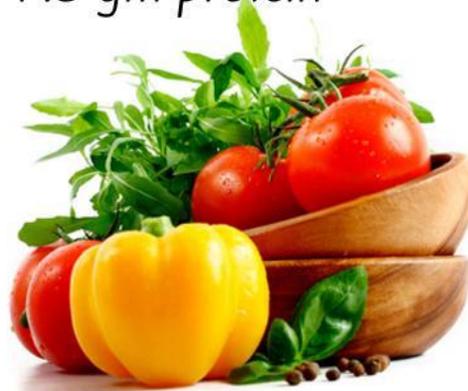
Quaker, corn grits (instant, dry), 1 packet (29g),
2.1 gm protein

Cheerios, 1 cup (28g), 3.4 gm protein

Whole-wheat pasta, 1 cup (151 g), 9 gm protein

Egg Noodles, 1 cup (160 g), 7.3 gm protein

White rice, 1 cup (158 g),
4.3 gm protein



Foods Low in Protein

Potatoes, 1 cup diced (150 g),
3.1 gm protein

Rice cakes, brown rice, 2 cakes (18 g),
1.5 gm protein

Tomatoes, 1 cup chopped (180 g),
1.6 gm protein

Hash brown, 1 patty oval (29 g),
3.4 gm protein



Foods High in Protein

Ground beef 70% lean meat (3 oz),
20.3 gm protein

Ground beef 93% lean meat (3 oz),
23 gm protein

Beef steak , 1 steak (6 oz),
62.1 gm protein

T-bone steak, 1 steak (8 oz),
57 gm protein

Top sirloin steak, 1 steak (8 oz),
65,1 gm protein



Foods High in Protein



Egg, 1 large, 6.3 gm protein

Chicken tenders, 1 strip, 5.8 gm protein

Chicken patty, 1 patty, 8.9 gm protein

*Chicken meat and skin, 1/2 cup sliced,
19.1 gm protein*

*Duck meat and skin 1/2 cup slice,
13.3 gm protein*

Fish sticks, 1 piece, 6.3 gm protein

*Fish, Mackerel, Mahi-Mahi, Tilapia, Salmon, 1 fillet
(3 oz), 22.5 gm protein*

Canned tuna, 1 can (165 g), 32.1 gm protein



Foods High in Protein

*Pork Ham (honey, smoked) (2 oz),
9.9 gm protein*

*Pork chops (bone-in), 1 chop (8 oz),
54.7 gm protein*

*Turkey breast prepackaged, 1 slice,
2.4 gm protein*

Ground turkey, 1 patty, 22.4 gm protein





Foods High in Protein

Turkey sausage, 1 serving, 10.7 gm protein

Turkey ham, 1 oz, 4.6 gm protein

*Turkey, pork, and beef sausage (3 oz),
6.8 gm protein*

Turkey meat and skin (3 oz), 24.3 gm protein

Cheddar cheese (1 oz), 6.5 gm protein

Colby cheese (1 oz), 6.7 gm protein

Cheese queso fresco, 1/2 cup, 11 gm protein

Foods High in Protein

Mozzarella cheese (1 oz), 6.3 gm protein

Provolone cheese, 1 slice, 7.2 gm protein

Ricotta cheese, 1/2 cup, 14 gm protein

Macaroni and cheese, box mix, 1/2 cup,
6.3 gm protein

Fat-free or skim milk, 1 cup,
8.8 gm protein

2% Milk, 1 cup, 9.7 gm protein

Yogurt, per container, 5 to 11 gm protein



Be careful, not all plant foods are low in protein!

Plant Foods High in Protein

*Soy-based chocolate milk (8 fl oz,)
10 gm protein*

Baked beans, 1/2 cup, 7 gm protein

Peas, 1/2 cup, 4.3 gm protein

Lentils, 1/2 cup, 8.8 gm protein

Soybeans, 1/2 cup, 20.1 gm protein

Fried tofu (1 oz), 5.3 gm protein



Plant Foods High in Protein

Almond butter, 1 tbsp, 3.4 gm protein



Peanut Butter, 1 tbsp, 3.5 gm protein

Almonds (1 oz), 6 gm protein

Peanuts (1 oz), 7.3 gm protein



Walnuts (1 oz), 4.3 gm protein

Pecans (1 oz), 2.6 gm protein

Sunflower seed (1 oz), 5.8 gm protein

Chia seeds (1 oz), 4.7 gm protein

Flaxseed, 1 tbsp, 1.3gm protein





Meadowlark Hills
Parkinson's Program

For more information please contact the Parkinson's Program
at 785-323-3899

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Created July 2016 by Priscilla Brenes MPH

Appendix J - Survey of Educational Materials at MLH

Survey Nutrition Education Materials Meadowlark Hills

Would you please help us evaluate the nutrition education handouts? It will take you 10 to 15 minutes to answer the questions. Your participation is completely confidential and voluntary, and you may skip answering questions if you wish. You will have no penalty if you decide not to participate. We greatly value your opinions, and appreciate your responses – thank you!

Please tell us which handout you have received

- Dehydration
- Constipation
- Constipation recipes
- Bone Health
- Nutritional shakes (only staff members)
- My low-high protein food booklet for PD

How important is the information in the handouts you received?

- Not important
- Neutral
- Important

What is your opinion about information in the nutrition handouts?

	Yes, very much	Somewhat	No
It is visually appealing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information is easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The color scheme was adequate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information was easy to read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please tell us about yourself

My age is _____

I am

- Female
- Male

Please choose your reaction to the next statements regarding the nutrition handouts

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I don't know
The content is appropriate for my daily living	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The themes in the handouts are useful to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The recipes about constipation are useful to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They provided me with new information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information is practical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information focuses on behaviors to include rather than those to exclude	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can relate to the examples and information provided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information motivates me to make changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information gave me new ideas on how to improve my health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you have suggestions to make the nutrition handouts more meaningful?

Do you have other topics that would like to see in nutrition handouts? If so, please describe

Again, we greatly value your opinions, and appreciate your responses - Thank you!