IDENTIFICATION OF THE TYPE AND AMOUNT OF NUTRITION EDUCATION PROVIDED TO TITLE III-C RECIPIENTS OF CONGREGATE AND HOME DELIVERED MEALS IN REGION V: INDIANA, MICHIGAN, OHIO, ILLINOIS, WISCONSIN, AND MINNESOTA.

A THESIS
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BY
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ABSTRACT

THESIS: Identification of the Type and Amount of Nutrition Education provided to Title III-C Recipients of Congregate and Home Delivered Meals in Region V: Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota.

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Legislation mandates that older adults, who receive Title III-C assistance should be provided with nutrition education, nutrition counseling, and other nutrition services, as appropriate, based on the needs of individuals. The amount and content of nutrition education, however, is subject to variation of state guidelines. The purpose of this study is to measure the type and amount of nutrition education being provided to congregate meal site and home delivered meal participants and to identify if special accommodations are being made for those participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota (Region V). The nutrition representatives for congregate meal site and home delivered meal programs within the six states were sent an e-mail questionnaire. Results showed that while majority of the states are meeting their own state guidelines, having uniformity amongst the states could strengthen the nutrition education program for older adults receiving congregate or home delivered nutrition services within Region V.
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CHAPTER I

INTRODUCTION

Background

By the year 2050, the number of Americans aged 65 years and older is projected to be 88.5 million (Vincent & Velkoff, 2010). The Administration on Aging (AoA) under the Older Americans Act (OAA) established the Elderly Nutrition Program (ENP) (Millen, Ohls, Ponza, & McCool, 2002). ENPs are the largest and longest-standing coordinated programs for community and home-based nutrition preventative services (Millen, Ohls, Ponza, & McCool, 2002). ENP is intended to improve dietary intakes of participants, form new friendships, and to create informal social support networks (AoA, 2012a).

Services provided under the auspices of the OAA, such as congregate meals and home delivered nutrition services, help older individuals remain independent and living within their communities (OAA, 2008). Congregate and home delivered meal services serve approximately seven percent of the older population (60 years of age or older), which includes 20 percent of the nation’s poorest elderly (Millen et al., 2002).

Federal guidelines require that congregate meal sites and home delivered nutrition services provide nutrition education (OAA, 2008). The OAA established these guidelines
to improve the current health status of the older population. In the past, nutrition education has been used as an effective method for prevention and as an intervention tool. Nutrition education as an intervention can improve the health conditions and chronic diseases that progress with age (Wunderlich, Bai, & Piemonte, 2011). It has been suggested that educational programs targeted towards the elderly should look at the common complications of the aging cycle when developing the educational program.

Nutrition education programs have been linked to improving a person’s nutritional status, increasing a person’s level of socialization, and aiding in dietary behavior modifications (Millen et al., 2002; Keller et al., 2006). Research has suggested that nutrition education planners should become more involved in the education developmental process and should accommodate those participants with sensory disabilities (Duerr, 2003).

If targeted properly, nutrition education can encourage awareness, prevention, and motivation in regards to health and well-being for the aging population (Bobroff et al., 2003; Bernstein et al., 2002). Assessing and evaluating the nutrition education provided through congregate meal sites and home delivered nutrition services is vital for implementation of the OAA’s requirements and individual state guidelines.

**Statement of Problem**

It is projected that by the year 2030, 70 million people will be classified as a part of the older population in the United States (Wellman, Rosenzweig, & Lloyd, 2002). Providing the nutritional needs of older adults who often live alone and on limited incomes is challenging (Wellman, Rosenzweig, & Lloyd, 2002). Wunderlich et al. (2011) suggested the need for more effective nutrition education and screening tools specifically tailored to those individuals 60 years of age and older. To help increase the quality of life,
health promotion and disease prevention are key factors that can be emphasized during interventions (Duerr, 2003). The OAA (2008) established feeding programs for the elderly that provide nutritious meals in a social setting. OAA’s legislation mandates that older adults who partake in congregate meals or who receive home delivered nutrition services must be provided with nutrition education, nutrition counseling, and other nutrition services as appropriate, based on the needs of the individual (OAA, 2008). The amount and content of nutrition education may vary depending upon state guidelines. Determining the type and amount of nutrition education provided to those congregate meal site participants and those who receive home delivered nutrition services is warranted.

**Purpose of the Study**

The purpose of this study was to measure the type and frequency of nutrition education being provided to congregate meal site and home delivered meal participants. Further the purpose was to determine if special accommodations are being made for participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota.

**Research Questions (RQ)**

The following research questions will be examined in this study:

RQ #1. Over the past 12 months, how often has nutrition education been provided to:

a) congregate meal site participants?

b) home delivered meal participants?

RQ #2. What nutrition education methods are used for:

a) congregate meal site participants?
b) home delivered participants?

RQ #3. Are there provisions in place for nutrition education for the disabled:

a) congregate participants?

b) home delivered participants?

**Rationale and Significance of Study**

Results of this study will provide a better understanding of nutrition education methods used and if nutrition education is being tailored to meet the educational needs of those participants with disabilities. Further, information regarding how much nutrition education is received by congregate meal site participants as well as home delivered meal participants within Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota will be identified. In addition the results will show the similarities and differences for nutrition education provided to congregate meal sites and home delivered nutrition services within OAA’s Region V, which encompasses the six states noted above. It would be beneficial if these factors were identified and shared to create a stronger unity among the different state agencies. The evaluation of nutrition education services for congregate meal sites and home delivered nutrition services will help to improve and further develop these programs.

**Assumptions**

The following assumptions were made in the development and implementation of the study and in the interpretation of the data:

- the Area Agency on Aging (AAA) nutrition representatives will answer the questions honestly.
• the individuals who complete the survey are a representative of the nutrition coordinators in Region V for congregate and home delivered nutrition services.

Definition of Terms

• Administration on Aging (AoA) – helps develop comprehensive, coordinated and cost-effective systems of home and community-based services to help elderly individuals maintain their health and independence in their homes and communities (AoA, 2012a).

• Aging – process of growing older, a process that includes physical changes, and sometimes mental changes (Aging and Aged, 2002).

• Area Agency on Aging (AAA) – program designated under section 305(a)(2)(A) or a State agency performing the function under section 305(b)(5) (Wellman, Weddle, Kamp, Podrabsky, Reppas, Pan, Silver, & Rosenzweig, 2005).

• Congregate Meal Site – congregate meal program allows seniors the opportunity to socialize while enjoying nutritionally-balanced meals in a group setting. The program helps those in the greatest social and economic need with particular attention to low income individuals, minority individuals, those in rural communities, those with limited English proficiency and those at risk of institutional care (AoA, 2012a).

• DETERMINE Checklist – DETERMINE is an acronym for warning signs of poor nutritional health: Disease, Eating poorly, Tooth loss/mouth pain, Economic hardship, Reduced social contact, Multiple medicines, Involuntary weight loss/gain, Needs for assistance in self-care, Elderly years above age 80 (The
Nutrition Screening Initiative. The DETERMINE checklist is used throughout the United States to assess nutrition risk of those requesting the services of the Older Americans Act Nutrition Program (Sinnett et al., 2010).

- Elderly – accepted in the United States of America as someone of the chronological age 60 years or older (AoA, 2010).

- Home Delivered Nutrition Service Program – provides meals and related nutrition services to older individuals who are homebound due to illness, disability, or geographic isolation (AoA, 2012a).

- Nutrition Representative- an individual that is responsible and/or knowledgeable for nutrition services within an Area Agency on Aging.

- Region V – a part of the Administration on Aging this region includes states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota (AoA, 2012b).

- The Older Americans Act Nutrition Programs – programs provide health, social, and nutrition services to older adults, particularly to elders at high risk, including low-income minorities and those living in rural areas (Colello, 2010).

- Title III – part of OAA program that provides congregate and home delivered meals, nutrition screening, education, and counseling and an array of other supportive and health services (Wellman, Rosenzweig, & Lloyd, 2002).

**Summary**

Congregate meal sites and home delivered nutrition services are a major resource for the aging population. To promote health and wellbeing for the aging population it is imperative to provide nutrition education. Federal and state guidelines include nutrition education services for those that participate in congregate meals and home delivered
nutrition services. The purpose of this study is to measure the type and amount of nutrition education being provided to congregate meal site and home delivered meal participants and to identify if special accommodations are being made for those participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota, in order to characterize the implementation of the requirements of the Older Americans Act. Results of this study can be used to compare variance among states and to further develop nutrition educational programs for the visual and hearing impaired participants.
CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to measure the type and frequency of nutrition education being provided to congregate meal site and home delivered meal participants. Further the purpose was to determine if special accommodations are being made for participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. This chapter presents a review of the literature that describes the federal and state regulations and requirements for congregate meal site participants and those who receive home delivered nutrition services, the current health status of the elderly population, the effects of nutrition on aging, and a review of past nutrition education interventions taken concerning the elderly.

Background

Adults 65 years of age and older are one of the most rapidly growing age groups in the United States. In 2010, census data indicated there were 40.4 million individuals 65 years of age and older (Vincent & Velkoff, 2010). By the year 2050, the number of Americans aged 65 will double, to a projected 88.5 million (Vincent & Velkoff, 2010).

The Older Americans Act (OAA) provides assistance in the development of new or improved programs to help the older population (OAA, 2008). Federal AoA resources
contribute 37% of the overall costs of providing ENP congregate meals and 23% of home
delivered meals (Millen et al., 2002). From the federal guidelines, it is shown that
congregate meal site participants and home delivered nutrition service participants should
receive nutrition education.

The Administration on Aging, (AoA), under the Older Americans Act (OAA),
established the Elderly Nutrition Program (ENP) (Millen et al., 2002). ENP furnishes
congregate and home delivered meals (AoA, 2009). The Elderly Nutrition Program is the
largest, longest-standing coordinated program available for community and home-based
nutrition preventative services (Millen et al., 2002). ENP is intended to improve dietary
intake of participants, form new friendships, and to create informal social support
networks (AoA, 2009).

Key factors that should be emphasized during nutrition education interventions
are to help increase quality of life, good health promotion and disease prevention (Duerr,
2003). Nutrition educational programs targeted to a specific health condition can improve
the health status of an older individual (Miller et al., 2002). Wunderlich et al. (2011)
suggested the need for more effective nutrition education and screening tools specifically
tailored for those 60 years of age and older.

**Congregate and Home Delivered Nutrition Services**

**Federal Guidelines**

According to Section 330 of the OAA, the purpose of Title III Nutrition Services,
called the Elderly Nutrition Program (ENP), is to reduce hunger and food insecurity,
promote socialization, and to advance the health and well-being of elder individuals by
helping elderly individuals gain access to nutrition and other disease prevention and
health promotion services to delay the onset of adverse health conditions (OAA, 2008).

Two key components of the ENP are the congregate and home-delivered meals programs. These meals and other nutrition services are provided in a variety of group settings, such as senior centers, faith-based settings, schools, as well as in the homes of homebound older adults. Meals served under the program must provide at least one-third of the recommended dietary allowances established by the Food and Nutrition Board of the Institute of Medicine of the National Academy of Sciences, as well as the Dietary Guidelines for Americans, issued by the Secretaries of the Departments of Health and Human Services and Agriculture (OAA, 2008).

**Congregate Meal Sites**

The purpose of congregate meal sites is to help those in the greatest social and economic need, especially low income individuals, minority individuals, those in rural communities, those with limited English proficiency and those at risk of institutional care (AoA, 2012a). To be eligible to eat at a congregate meal site, the participants must be 60 years of age or older (Kretser et al., 2003). Spouses can participate in this service regardless of age (Neyman, 1996). In 2006, 9.5 million older adults participated in congregate meal sites throughout the United States (Kamp, Wellman, & Russell, 2010).

To operate a congregate meal site, the establishment must provide meals five or more days a week (except in a rural area where such frequency is not feasible), with at least one hot or other appropriate meal per day in a community setting, including adult day care facilities and multigenerational meal sites. The site must provide nutrition
education, nutrition counseling, and other nutrition services, as appropriate, based on the needs of meal participants (OAA, 2008).

**Home Delivered Nutrition Service**

The purpose of the home delivered nutrition service program is to provide meals and related nutrition services to older individuals who are homebound due to illness, disability, or geographic isolation (AoA, 2012a). Eligibility guidelines include participants must be 60 years of age and homebound or a recipient may be a spouse of an individual receiving nutrition delivered nutrition services regardless of age or homebound status (Kretser, Voss, Wendell, Cavadini, & Friedmann, 2003). In 2007, 2.6 million older adults participated in home delivered nutrition services throughout the United States (Kamp et al., 2010).

Within Section 336 of the OAA, for the establishment and operation of nutrition projects for home delivered nutrition service, regulations include: provision of (1) meals 5 or more days a week (except in a rural area where such frequency is not feasible and a lesser frequency is approved by the State agency) wish at least 1 home delivered meal per day, which may consist of hot, cold, frozen, dried, canned, fresh, or supplemental foods and any additional meals that the recipient of a grant or contract under this subpart elects to provide; and (2) nutrition education, nutrition counseling, and other nutrition services, as appropriate, based on the needs of meal recipients (OAA, 2008).
State Guidelines

Indiana State Guidelines

Indiana Division of Aging’s Operations (Northwest Indiana Community Action, 2012) requires that the Nutrition Service Programs specify that participants must be provided a minimum of two pieces of nutrition education each month, that nutrition education should be reported as one session per participant, and that the educational experience may be provided in a group or individual setting overseen by a dietitian or individual of comparable expertise.

Michigan State Guidelines

According to the Michigan Office of Service to the Aging (Office of Services to the Aging, 2008), each Nutrition Service Program shall provide or arrange for monthly nutrition education sessions at each meal site and as appropriate to homebound clients. Topics include, but are not limited to food, nutrition, wellness issues, consumerism, and health. All nutrition education materials must be approved by the regional dietitian. Staff and volunteers for each program shall receive in-service training at least twice each fiscal year which is specifically designed to increase their knowledge and understanding of the program and to improve their skills at tasks preformed for the prevision of service (Office of Services to the Aging, 2008). Records shall be maintained which identify the dates of training, topics covered, and persons attending.

Ohio State Guidelines

Ohio Department of Aging (Ohio Department on Aging, 2009) requires each Nutrition Service Program provider must offer a nutrition education service two times per year for congregate meal site participants and for those participants who receive home
delivered nutrition services. Educational materials must be tailored to the consumers’ needs, interests, and abilities in regards to literacy. The materials must provide accurate and relevant information. The provider must establish methodology for evaluating the effectiveness for nutrition education services and shall maintain records of the evaluation (Ohio Department on Aging, 2009). Congregate meal site nutrition education should be conducted in group settings with documentation of attendee, date, topic, instructor’s name and signature. For home delivered nutrition education, the provider should document who received nutrition education materials, the service date, the topic, and the provider’s signature.

Illinois State Guidelines

According to the Northeastern Illinois Area on Aging Nutrition Standards, each nutrition project shall provide nutrition education on at least a semiannual basis to the participants in the nutrition programs (Northeastern Illinois Area on Aging Nutrition Standards, IDOA 603.20 (I)). It is strongly recommended that nutrition education be provided quarterly to congregate and home delivered meal participants and more frequently if possible. The purpose of nutrition education is to inform individuals about available facts and information that will promote improved food selection, eating habits, nutrition and health-related practices. At the time of this research, no state manual was available to the researcher for the state of Illinois.

Wisconsin State Guidelines

The Department of Health Services Division of Long Term Care Bureau of Aging and Disability Resources (2011) for Wisconsin requires least four times per year of nutrition education, once each quarter, nutrition education for congregate dining centers
shall include a cooking demonstration, educational taste testing, presentations, walk-by displays, and lecture or small group discussions, all of which may be augmented with printed materials. Nutrition education for home-delivered-meal participants may consist solely of printed material. A qualified nutritionist shall provide input and shall review and approve the content of nutrition education prior to presentation. Nutrition education topics shall include food/nutrients including vitamin B12 and vitamin D, nutrition, physical activity, food safety, consumerism and health.

*Minnesota State Guidelines*

Minnesota's Board on Aging (Administration on Aging, 2010) requires one session of nutrition education per participant. The nutrition education program is required to promote better health by providing accurate and culturally sensitive nutrition, physical fitness, or health (as it relates to nutrition) information and instruction to participants, caregivers, or participants and caregivers in a group or individual setting overseen by a dietician or individual of comparable expertise.

**Summary: Congregate and Home Delivered Nutrition Services**

Nutrition Service Programs assist older individuals in remaining independent and in their communities. Congregate and home delivered meals service approximately 7% of the older population (60 years of age or older) which includes 20% of the nation’s poorest elderly (Millen et al., 2002). The Older Americans Act has established these guidelines to improve the current health status of the older population. The OAA is considered to be the major advocate for older adults (Millen et al., 2002). The OAA administers social and nutrition services to this group and their caregivers.
Health and Dietary Concerns Regarding the Elderly

Malnutrition, underweight, overweight, obesity, food insecurity, and hunger are linked to decreased quality of life, increased morbidity, and premature mortality in the elderly (Kamp et al, 2005). Elderly Nutrition Programs including congregate and home delivered nutrition services have targeted vulnerable individuals who are at risk for food insecurity (Wunderlich et al., 2011). However, health concerns are still being raised regarding the health status of congregate and home delivered meal recipients. There are several nutritional risk factors that can affect one’s eating habits as a person ages, including poly-pharmacy, depression, and social isolation. Poly-pharmacy has been associated with poorer nutritional status (Heuberger & Caudell, 2011). Reduction in physical health has a significant effect on nutrient intake (Heuberger & Caudell, 2011).

Sensory Impairments and Effects on Aging

Across the United States there has been a need for nutrition education in the senior population. In addition, research has demonstrated as a person ages there comes a physical, mental, and sensory decline in most adults. Recently evidence has revealed that programs are needed to be tailored towards elder adults with various disabilities.

Jee et al. (2005) studied the frequency of sensory impairments among older care clients. Research evaluated 188 individuals between the ages of 65-99 years old receiving senior services. Participant’s visual and hearing acuities were assessed. Results showed vision impairments were observed in 30.2% of the clients and moderate hearing loss was found in 50.5% of the clients. Participants with both visual and hearing impairments were detected in 22.5% of participants. Results from this study indicated there is a high
prevalence of sensory impairment for those adults transitioning from independent community living to institutionalized care.

Saunders & Echt (2007) used the term dual sensory impairment to describe both the presence of hearing loss and vision loss. Occurrence of dual sensory impairment is prevalent among the aging population, with studies showing between 9-21% of adults older than 70 years of age having some degree of dual sensory impairment. Elderly people with dual sensory loss and single impairments are at risk for decreased everyday competence and the capacity for independent living (Brennan et al., 2005). It has been suggested that it is more cost effective to help individuals with sensory disabilities by maintaining their independence through programs than to deal with the continual decline in mental and physical health issues associated with the disability (Brennan et al., 2005).

Tay et al. (2007) studied the relationship between visual and hearing impairments and the use of community supported services and health related quality of life in aged care clients. Participants included 284 frail elderly individuals from Sydney, Australia. Moderate to severe visual impairment was defined as visual acuity <20/80, and moderate to severe hearing loss was defined as >40 decibels. The community supported services included home-delivered meals, home help, and community nurse visits. Results showed visual impairments were significantly associated with increased use of community services. There was no significant association found between hearing loss and the use of community services.

Horner-Johnson, W., Drum, C.E., & Abdullah, N. (2011) examined the changes in behavior among adults with disabilities following participation in the Healthy Life-styles for People with Disabilities health promotion program, in hopes participants would show
significant increase in healthy behaviors such as nutrition, physical activity, and health responsibility. Participants were randomly assigned to the intervention group or to a wait-list group. After initially serving as controls, the wait-list group received the intervention treatment as well. Health behaviors were completed at baseline, 4 months, 7 months, and 10 months. Results showed health behavior scores of immediate intervention participants increased significantly (p<0.001) while the scores of wait-list groups showed no significant change. After attending a Healthy Lifestyles workshop, scores of wait-list participants also increased significantly (p=0.001). It can be suggested from this article that tailored interventions appear to be successful in helping adults with disabilities increase healthy behaviors.

Although little research has been found on various educational programs for the disabled in regards to nutrition, programs that are targeted towards the disabled have been shown to be effective. Evidence documents the benefits and cost effectiveness of evaluating a program’s relationship with those elderly adults that have disabilities (Brennan et al., 2005). More evidence is needed to show if government programs are paying attention to the need of specialized programs and the methods used to communicate nutrition information to the disabled elderly population.

Locher et al. (2005) examined the relationship that exists between social isolation, social support, and social capital in regards to nutritional risk in older black and white women and men. Men and women aged 65 and older who were enrolled in University of Alabama at Birmingham’s Study of Aging were recruited. The sample was stratified according to race, gender, and urban/rural residence. Questionnaires using a standard interview format regarding mobility, overall health status, social isolation, social support,
and social capital were administered to participants. The DETERMINE checklist was used to assess the individual’s nutritional risk. Participants with a score of 6 or higher on the nutrition risk index were considered high risk. Results showed 21.3 percent of the total samples were at high nutritional risk. The authors suggested that, although programs and policies are targeted to a generalized audience to alleviate hunger, impacts of the program will differ based on the needs of an individual.

Health Status of Congregate Meal Site Participants

Weeden and Remig (2010) focused on food group intake, factors predicting food group intake, and the food choices of 80 years of age and older individuals who participated in congregate meal programs. The participants were initially asked to complete a questionnaire which then was followed by two 24-hour food diet recalls. Results indicated that females were statistically more likely to meet the daily fruit requirement than males. In addition, chronic health conditions and dietary supplements were predictive factors for the amount of each food group that was consumed. This study suggests that nutrition education could support a healthier lifestyle.

Quigley, Hermann, and Ward (2008) examined differences in response to the Nutrition Screening Initiative (NSI) Checklist statement by demographic variables. The NSI checklist was given to over half of Oklahoma’s Older Americans Act Nutrition Program congregate meal participants. These participants were categorized as high nutritional risk based on cumulative NSI Checklist scores. This study evaluated the Oklahoma State Unit on Aging statewide archival demographic and NSI Checklist from 8892 congregate participants. Results showed 18 percent of congregate participants were
categorized as high nutritional risk. NSI Checklist statements revealed 81 percent of males and 88 percent of females participating in the Oklahoma congregate meal programs were at nutritional high risk. The authors concluded that nutrition education can play a role in achieving good nutritional status. The author mentions the need for utilizing a registered dietitian for programs and counseling services regarding disease conditions that affect food intake.

Health Status of Home Delivered Nutrition Service Participants

Sharkey et al. (2002) assessed the inadequate dietary intakes of key nutrients among homebound elderly by using dietary reference intakes (DRI) and health factors related to low nutrient intakes. Inclusion criteria for this study incorporated participants that were receiving home delivered meals, aged 60 years or older, with a telephone administered Mini-Mental State Examination of 17 or greater, and were able to participate without proxy. The study consisted of a baseline home visit and three 24-hour dietary recalls. The first recall was obtained during the home visit the second and third recalls were collected by telephone within two weeks of the home visit. Physical characteristics, psychosocial characteristics, meal patterns, and current nutrition health status were measured at baseline. Results showed that there was a significant difference between male and female income and marital status. Gender differences in body mass index (BMI) had a significant association between race and categories of BMI. Further, subjects with less than 9 years of education had a significantly lower intake of calcium, magnesium, and Vitamin E. The authors suggested specific subgroups of participants should be targeted with interventions to increase nutrient intake.
Savoca et al. (2009) examined ways to characterize the diet quality of a multiethnic population-based sample of older adults in the southern United States. Eligible participants were able to speak English, were able to give informed consent, were physically able to complete the interview, and were aged 60 years or older. Face-to-face interviews lasted 1.5-2.5 hours. In the interview participants were given a food frequency questionnaire including 110 foods. Questions were asked by the interviewer regarding past frequency and portion size. Information was converted to the Healthy Eating Index-2005 to monitor adherence to dietary guidelines. The mean total for the Healthy Eating Index-2005 score was 61.9/100. Results show that fewer than 2 percent of this group met the recommended score of 80/100. After stratifying for age, sex, marital status, poverty status, and education, African Americans had a statistically significant higher total Healthy Eating Index-2005 compared to American Indians and non-Hispanic whites. The authors concluded that rural elders do not have appropriate diet qualities as determined by the Healthy Eating Index-2005, suggesting that further examination should be reviewed based on different ethnicities living in the same community to assist in tailoring nutrition education programs.

Summary: Health and Dietary Concerns Regarding the Elderly

As the elderly continues to live longer, health professionals and care givers need to respect the physiological changes that occur as a person ages. Interventions have been established to facilitate the continual aging process. Older Americans are placed at high risk for poor nutritious outcomes due to the inability to achieve and maintain good nutritional status (Kuczmarski et al., 2005). Access to food and nutrition assistance
programs and nutrition services must be a high priority for the federal, state, and local government and led by food and nutrition practitioners (Nutrition across the spectrum of aging, 2005).

**Nutrition Education for the Elderly**

Nutrition education has been shown to have positive effects on the older population. Older adults that participate in nutrition education have been shown to make behavior changes, increase their level of social interaction, and are better nourished than those older adults that do not participate in nutrition education. Current nutrition knowledge has enhanced the need for better nutrition education for older adults.

**Current Nutrition Knowledge**

McKay, Houser, Blumberg, and Goldberg (2006) examined specific sources of nutrition information among an older adult population and compared the differences in sources associated with the extent of education. Although this study included participants 50 years of age and older, results showed that reliance on doctors, televisions, and neighbors was significantly higher among those with less education. In addition, less educated older adults rely upon different specific sources for their nutrition information than those that have attained a higher level of education.

Millen et al. (2002) summarized the Elderly Nutrition Program’s (ENP) influence on nutritional health and the targeting and cost of its nutrition services. Participants included a nationally represented sample of congregate and home delivered ENP participants. In addition, a sample of nonparticipants from the United States Health Care Financing Administration’s Medicare beneficiary listing, in the same zip code as the ENP
participants were included in this study. Interviews were conducted in participants’ homes including assessment of anthropometry and physical functioning, nutrient intake and socialization patterns, and utilization of the Elderly Nutrition Program’s services. It was shown that educational attainment of ENP participants tends to be lower than other elders in the United States. The authors concluded that, when compared with nonparticipants, ENP participants were significantly better nourished and achieved higher levels of socialization.

Roth (1995) examined nutrition knowledge of elderly congregate meal site participants with particular interest directed towards nutrition risk levels and the demographic characteristics of education, age, and gender. The population utilized in this study was 120 elderly, both male and female, over the age of 60 years who attended ten congregate meal sites in Allen County, Indiana. The study was designed to determine if there was a significant difference in nutrition knowledge among elderly at congregate meal sites who exhibit varying nutrition risk, education, and age levels and between elderly men and women. The conclusion was that there was a significant difference between nutrition knowledge of men and women with women scoring more correct answers on the survey. Further, those with 9-11 years of education and in the lowest nutrition risk level (all females) had the highest nutrition knowledge score. Males with less than eight years of education had the lowest nutrition knowledge score. The researcher also concluded that more nutrition education is needed for these participants, but it must be geared to their learning level to be effective.
Keller et al. (2006) demonstrated the feasibility and relevance for using the community organization approach to develop a nutrition education program for seniors. A questionnaire was mailed out as a baseline prior to program development. A follow-up survey was sent out three years later to determine participation in the Evergreen Action Nutrition program and to view behavior changes. Those reporting that they participated in formal education reported more frequent changes in food practices than those that participated in informal education.

**Summary: Nutrition Education for the Elderly**

Limited information was found on various methods used for presenting nutrition education. However, it has been suggested that interactive methods of nutrition education have been shown to have positive results (Manilla, Keller, & Hedley, 2010). In addition, educational programs targeted to a specific health condition can improve the health status of an older individual (Miller et al., 2002). Evidence shows that those individuals with a lower level of education rely on doctors as a primary source of information regarding nutrition (McKay et al., 2006).

**Nutrition Education: Congregate and Home Delivered Meal Services**

Various methods have been used when developing nutrition education for older adults. Studies have shown some methods are more effective than others. Handouts, nutrition group sessions, and nutrition education classes have been shown to be some of the most effect methods. Nutrition education has been shown to be a positive intervention in regards to improving dietary intakes, behaviors, and knowledge for congregate and home delivered meal recipients.
Types of Methods Used for Presenting Nutrition Education

Biggerstaff (2011) examined perspectives related to nutrition education needs and interests of elderly people who participate in a congregate meal program in East Central Indiana in order to improve the current nutrition education materials that are being presented to those who dine at LifeStream Inc., senior cafes. Subjects in this study included sixty participants from 11 congregate meal sites across East Central Indiana. Focus groups were conducted to determine nutrition needs and interests of elderly participating in a congregate meal program concerning nutrition education and other health related topics. The elderly at LifeStream sites were most interested in having more information about specific disease states, most specifically diabetes. Currently nutrition information is received by many different venues with handouts being the most popular and accepted with this population. Ideas that were suggested to improve LifeStream nutrition education included more one-on-one interaction to teach new nutrition information. Keeping lessons simple and interactive is also important when teaching elderly Americans about nutrition topics.

Rosenbloom, Kicklighter, Patacca, and Deshpande (2004) viewed the effects of three nutrition education sessions (1 per week) on the revised Food Guide Pyramid, dietary protein, and dietary fiber on older adults at six senior centers in Atlanta, Georgia. Each lesson was approximately twenty minutes. Sessions were designed to include a self-assessment of current habits, a goal setting activity, a food tasting session, take home handouts, and a question and answer session. Participants were given a pre-test and post-
test. Results showed that there was significant difference in nutrition knowledge after the three sessions for the total score and for the three subtest scores.

Mitchell, Ash, and McClelland (2006) examined the effects of a five lesson nutrition education module on changing herbal and other dietary supplement use among older adults with limited resources. This study used a theoretically derived education component. This randomized controlled study examined 5 sessions of nutrition education modules at congregate nutrition sites. Pretest measures were completed before the first session of the module. Posttests were administered approximately 9 weeks after baseline and 4 weeks after the end of the 5 week module. Questions included information regarding multivitamins, calcium supplements, supplement/medication list, label reading, talking with a health care professional, and demographic variables. Results showed that experimental group participants were significantly more likely than the control group participants to increase multivitamin use, increase calcium supplementation use, to read labels of dietary supplements, to carry a supplement/medication list, and to discuss usage with health care professionals.

Duerr (2003) conducted a study to assess the perceived nutrition education wants and needs of older adults living in a northeast Ohio county in order to address what type of nutrition education was wanted and needed by them. Five focus groups of 37 non-institutionalized independent community dwelling older adults living in the county were interviewed at locations agreeable to the participants. The focus groups lasted two hours with a midway break. At the end of the focus group, participants were asked to complete a demographic questionnaire. Results showed that health care organizations/professionals were the most influential on nutrition education. Some topics that they were most
concerned with were basic nutrition, diet and disease, lifestyle habits/problems, foods, supplements, and general education such as cooking for one person. Participants received information commonly through written materials, mixed medium (such as televisions), people, and organizations. When asked how they would prefer to receive nutrition education the participants mentioned methods (such as demonstrations), written/physical sources, and people (such as guest speakers). This study recommends that older adults be involved in the development of learning objectives and the determination of content when developing educational programs.

Bernstein et al. (2002) examined the efficacy of a home delivered nutrition education program on increasing the daily consumption of fruits, vegetables, and calcium-rich foods in community-dwelling elder participants. Inclusion criteria for participation consisted of participants being 70 years or older, community dwelling within the greater Boston area, and ambulatory or sedentary. Subjects were randomly assigned to the nutrition education group or the exercise group. The exercise group received a six-month based exercise program designed to improve strength and balance. The nutrition education group received an in-depth, personalized education program which stressed increasing consumption of fruits and vegetables to a minimum of five servings per day and calcium-rich foods to a minimum of three times per day. Education was provided through eight home visits, bi-weekly phone contact, and monthly letters over a six month period. Results demonstrated compared to the exercise group, self-reported intakes of fruits, vegetables, and calcium significantly increased in the group that received nutrition education. Continual monitoring, positive reinforcement, and
keeping a food diary are ultimately needed to assist with compliance in the elder environment.

**Benefits of Nutrition Education**

Ellis, Johnson, Fischer, and Hargrove (2005) described the effects of nutrition education intervention on the improvement in intakes and behaviors related to whole grain foods in congregate meal recipients in senior centers in northern Georgia. A convenience sample of older adults aged 59 and older were recruited from nine senior centers in seven counties. Participants completed a pre-test prior to the nutrition education and completed a post-test after the education was presented. The intervention consisted of 5 lesson plans with a handout. One to two lesson plans were administered each month over a period of 5 to 6 months. At the end of the intervention, participants were significantly more likely to select one or more correct ways to identify whole grain foods and were reported to have an increased intake in whole grain breads, cereals, and crackers.

Bobroff et al. (2003) investigated the effectiveness of a five-lesson theory-driven elder nutrition module. The purpose was to assess the knowledge gained and behavior changes at a posttest in elders attending a rural congregate nutrition site. The five-lesson module addressed critical nutrients and healthful eating for the targeted population. Topics included the food guide pyramid for elders, fluids, dietary fiber, calcium and vitamin D, and vitamins and minerals. Attendees at the congregate nutrition site were asked to participate. Lessons were taught over a 6 week period. Participants completed questionnaires after each session. Two months after the last sessions, five participants
were interviewed. Results suggest that nutrition education programs targeted to congregate nutrition site participants must address their unique nutritional needs while engaging them in activities that promote learning and motivate them to make positive changes.

Wunderlich et al. (2011) examined nutrition factor scores and nutrition behaviors of congregate meal and home delivered meal participants in a northern county of New Jersey after nutrition intervention during 2007-2008 periods. The duration of the intervention was for two years, 2007 to 2008. The intervention for participants in the congregate meal program consisted of nutrition education sessions in a classroom format such as cooking demonstrations with handouts. Lessons consisted of a 30-40 minute session with discussions led by a nutritionist. Home delivered meal participants only received handouts and counseling by the telephone. Demographics, medical conditions, and nutrition risk scores were reviewed. All participants completed a 12 item Nutrition Survey Risk Screening checklist. Nutrition behaviors included the number of meals per day, serving sizes of fruits and vegetables, and a nutrition risk score. A score of 6 or more points was defined as persons at high nutritional risk. Results showed that nutrition education and counseling did help improve nutritional risk scores in both congregate meal site participants and home delivered meal participants. The article suggested that home delivered meal participants should be the primary focus for more effective nutrition education and counseling.
Summary: Nutrition Education at Congregate and Home Delivered Meal Services

Positive reinforcement and continual monitoring have been shown to help with compliance. Research has suggested that nutrition education planners become more involved in the education developmental process. Nutrition educators should inform the facilitators of the proposed education programs and the wants and needs of the targeted participants. Nutrition education as an intervention can improve the health conditions and chronic diseases that progress with age.

Summary

Along with an increased aging population comes an increased need for programs to promote successful aging. Congregate meal site and home delivered meal service programs not only provide a low cost, nutritionally dense meal, but those programs are aimed to decrease malnutrition, prevent physical and mental deterioration, promote good health, reduce social isolation, and link social isolation and rehabilitation services. If targeted properly, nutrition education can encourage awareness, prevention, and motivation in regards to health and well-being for the aging population. Further research should measure the amount and the methodology of nutrition education provided to congregate meal site participants and to those that receive home delivered nutrition services in order to characterize the implementation of the requirements established by the OAA.
CHAPTER III

METHODOLOGY

The purpose of this study was to measure the type and frequency of nutrition education being provided to congregate meal site and home delivered meal participants. Further the purpose was to determine if special accommodations are being made for participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. This chapter describes the methodology used to conduct this study.

Institutional Review Board Approval

Permission was requested from Ball State University Institutional Review Board prior to implementation of this study. The researcher completed the CITI training to satisfy the institutional instructional mandates in the protection of human research subjects (Appendix A).

Subjects

The subjects for this study included all 68 individuals classified as the nutrition representatives for one of the AAA in Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. Subjects were either male or female. For the most part, the 68 AAA are classified numerically by state. Indiana has sixteen formal Area Agencies on Aging (e.g.,
1-16) (Indiana Association of Area Agencies on Aging, 2003), Michigan has sixteen
formal Area Agencies on Aging (e.g., 1A, 1B, 1C, 2, 3A, 3B, 3C, 4, 5, 6, 7, 8, 9, 10, 11,
and 14) (Michigan Office of Services to the Aging, 2012), Ohio has twelve formal
Agencies on Aging (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10A, 10B, and 11) (Ohio Association of
Area Agencies on Aging, 2010), Illinois has thirteen formal Agencies on Aging (e.g., 1-
13) (Illinois Department on Aging, 2012), Wisconsin has three formal Agencies on
Aging, Milwaukee County AAA had two nutrition representatives sharing one AAA
(e.g., Milwaukee County AAA, Dane County AAA, and Greater Wisconsin Agency on
Aging Resources) (Wisconsin Department of Health Services, 2011), and Minnesota has
seven formal Agencies on Aging (e.g., Arrowhead AAA, Central Minnesota Council on
Aging, Land of the Dancing Sky AAA, Metropolitan AAA, Minnesota Chippewa Tribe
AAA, Minnesota River AAA, Southeastern Minnesota AAA) (Arrowhead Area Agency
on Aging, 2012).

Survey Instruments

The survey used in this study (Appendix B) was adapted from the 2011 National
Evaluation of Title III-C Nutrition Services AAA Survey (AoA, 2012c), with questions
modified to reflect methods, accommodations made for those participants with
impairments, and the respondents’ satisfaction of nutrition education for Title III-C
recipients in each AAA. The survey was designed to measure the type and frequency of
nutrition education provided to congregate meal site participants and to those who receive
home delivered nutrition services. The survey paid particular attention to special
accommodations being made for those participants with visual or hearing impairments in
an effort to characterize the implementation of the requirements of the Older Americans
Act. The survey took approximately five minutes for respondents to complete. The survey was conducted and compiled using Qualtrics, an online survey program. At this current time, there is no information available to the researcher regarding the validity and reliability of the original survey used for this study. The revised instrument was assessed for content and face validity by a group of experts in the field of geriatric nutrition and a nutrition representative from Region V.

**Letter of Permission and Consent**

A letter of permission (Appendix C) was obtained from Jim Varpness, Regional Administrator for the AoA, stating that he was aware of the survey being administered to nutrition representatives in Region V including Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota.

**Methods**

Five days prior to distributing the survey, the researcher sent an e-mail to each of the AAA’s nutrition representatives in Region V introducing herself and the study to participants through Qualtrics (Appendix D-1). The e-mail addresses were obtained using various networking methods which included personal phone calls to support staff, area nutrition representatives and contacting the names of nutrition program directors given to the researcher from the regional administrator. On the day the survey was distributed, an e-mail message was sent which described the research project and asked for program site’s participation in this survey (Appendix D-2). The hyperlink for the online survey was embedded in the e-mail. The e-mail communication clearly stated that no personal identifying information would be obtained.
Once complete, the representatives submitted the survey through Qualtrics where it was automatically saved for data analysis. Survey participants were given ten days from the time the invitation was sent to complete the survey. Three follow-up e-mails were sent to non-respondents after three days, five days, and again after nine days (Appendix D-3). Several methods were used to maximize the survey response rate including highlighting the deadline date, ensuring the participants it was a relatively short survey, and stating in the follow-up e-mails that other participants had already responded to the survey (Edwards, 2009).

**Data Analysis**

Demographic data collected were used to describe the location and services provided at each location at each AAA in Region V. The data from the survey were downloaded from Qualtrics and uploaded for analysis into SPSS v.20.0 (SPSS, 2012). Descriptive statistics and frequency counts were applied to all variables to determine the overall prevalence of specific survey responses. This included both congregate meal site participants and home delivered nutrition service participants both by overall results and by each state. Cross tabulations were computed on categorical variables to compare results of congregate meal and home delivered sites between states and by meal site location.

The short answer text box questions were analyzed according to the methods recommended by Biggerstaff (2011) with some adaptation using Microsoft Excel. Each short answer text box question was organized using Microsoft Excel with responses to these questions organized for frequency of response. Once all responses were placed under appropriate research questions, a summary for each question was developed to
identify emerging themes (Biggerstaff, 2011). Each question’s corresponding response and summary was reviewed by the principle investigator and faculty advisor for this thesis. The principle investigator categorized responses according to the agreed upon themes (Biggerstaff, 2011).
CHAPTER IV

RESULTS

The purpose of this study was to measure the type and frequency of nutrition education being provided to congregate meal site and home delivered meal participants. Further the purpose was to determine if special accommodations are being made for participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. Results of the study are presented in this chapter.

Subjects

The research conducted in this study focused on nutrition education programs provided to participants of the Title IIIC congregate and home delivered meal programs in Region V. The survey was distributed to a total of 68 nutrition representatives in Region V. A total of 26 (38.2%) people participated in this survey. A total of two representatives chose not to participate and the rest were non-respondents. Out of the 26 respondents, the majority of participation came from Indiana (23.1%), Michigan and Ohio showed the second largest participation (19.2%), followed by Illinois (15.4%), and Minnesota and Wisconsin (11.5%). Table 1 denotes the number of participants per state.
<table>
<thead>
<tr>
<th>States</th>
<th>Responses</th>
<th>Nutrition Representatives Receiving Survey</th>
<th>% Participation from Each State</th>
<th>% Representing Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>6</td>
<td>16</td>
<td>37.5%</td>
<td>23%</td>
</tr>
<tr>
<td>Michigan</td>
<td>5</td>
<td>16</td>
<td>31.3%</td>
<td>19%</td>
</tr>
<tr>
<td>Ohio</td>
<td>5</td>
<td>12</td>
<td>41.7%</td>
<td>19%</td>
</tr>
<tr>
<td>Illinois</td>
<td>4</td>
<td>13</td>
<td>30.8%</td>
<td>15%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>3</td>
<td>4</td>
<td>75.0%</td>
<td>12%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>3</td>
<td>7</td>
<td>42.9%</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>68</td>
<td>38.2%</td>
<td>100%</td>
</tr>
</tbody>
</table>

RQ #1. Over the past 12 months, how often has nutrition education been provided?

Overall Nutrition Related Services Provided in Region V

Each representative was asked what services were available in their area. When asked if their congregate meal sites and/or home delivered nutrition programs were available to their population, 25 (96.2%) of the 26 areas responded favorably to both services with one (3.8%) area not providing these services. Nutrition education was available to the majority (80.8%) of areas responding in Region V. Nutrition screening was available in 16 (61.5%) of the reporting areas. Nutrition counseling was available in 10 (38.5%) of the reporting areas.

The respondents were asked to rank nutrition education, counseling, and screening in the order of importance to them. Results showed 11 (42.3%) of the participants considered nutrition education to be the most important category, 12 (46.2%)
participants considered it to be moderately important, and three (11.5%) of the surveyed considered it the least important when compared to nutrition screening and counseling.

Congregate and Home Delivered Nutrition Services and Nutrition Education

When looking at congregate meals sites for Region V with regards to nutrition education, 23 (88.5%) responded that nutrition education was available. Two (7.7%) respondents replied that nutrition education was not available in their area. One (3.8%) did not know if nutrition education for congregate nutrition programs was available.

Home delivered nutrition programs showed that 24 (92.3%) areas in Region V had nutrition education available. One (3.8%) respondent replied that nutrition education was not available in their area. One (3.8%) did not know if nutrition education for home delivered nutrition programs was available.

Table 2 refers to the overall frequency of nutrition education provided to congregate meal site and home delivered nutrition participants in Region V of the reporting areas. The variations in frequency in Table 2 are further explained in the next section which shows individual state data. Also it should be noted that there was no information given regarding what “other” amounts of education were available.

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Twice per year (2 sessions per year) N (%)</th>
<th>Quarterly (4 sessions per year) N (%)</th>
<th>Monthly (12 sessions per year) N (%)</th>
<th>More than monthly (12+ sessions per year) N (%)</th>
<th>Nutrition Education is not available for program participants N (%)</th>
<th>Other N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congregate Meals</td>
<td>4 (15.4%)</td>
<td>6 (23.1%)</td>
<td>7 (26.9%)</td>
<td>7 (26.9%)</td>
<td>1 (3.9%)</td>
<td>1 (3.9%)</td>
</tr>
<tr>
<td>Home Bound Meals</td>
<td>4 (15.4%)</td>
<td>5 (19.2%)</td>
<td>7 (26.9%)</td>
<td>6 (23.1%)</td>
<td>1 (3.9%)</td>
<td>3 (11.5%)</td>
</tr>
</tbody>
</table>
Nutrition Education Services According to State

Individual states and the frequency of nutrition education provided to congregate meal site and home delivered nutrition participants of the reporting areas are noted below in Table 3. Three of the states, Indiana, Michigan and Ohio provided nutrition education programs similarly to both congregate and home delivered nutrition services. Indiana showed six (100%) of the areas provided more than monthly education (12+ sessions per year) for congregate and home delivered services. Michigan demonstrated five (100%) of the areas provide monthly nutrition education for both programs. Ohio has four (80%) areas that provided nutrition education twice per year to both congregate and home delivered nutrition programs and one (20%) area offered nutrition education quarterly to both programs.

Three of the states, Illinois, Wisconsin, and Minnesota showed variation in its provision of nutrition education programs to each of the two types of programs. Illinois has one (25%) area that provides nutrition education to congregate meal programs quarterly, two (50%) areas provided education monthly, and one area (25%) selected more than monthly. For home delivered services Illinois respondents showed two (50%) areas that provide nutrition education quarterly, one (25%) area provided education monthly, and one area (25%) selected other. Wisconsin showed three (100%) areas that provided quarterly education to congregate meal site participants. Wisconsin’s home delivered nutrition services showed two (66.7%) areas that provided quarterly education and one (33.3%) area with monthly education. Minnesota demonstrated one (33.3%) area providing nutrition education quarterly, one (33.3%) area did not provide nutrition
education, and one (33.3%) area selected other for congregate meal participants.

Minnesota demonstrates one (33.3%) area did not provide nutrition education and two (66.7%) areas selected other for home delivered nutrition participants. There was no specific information given regarding the “other” category.

### Table 3  
Amount of Education Available by State According to Area Nutrition Representatives.

<table>
<thead>
<tr>
<th>States (number of reps reporting; number of total reps/state)</th>
<th>Suggested State Guidelines</th>
<th>Program Type</th>
<th>Twice per year (2 sessions per year) N (%)</th>
<th>Quarterly (4 sessions per year) N (%)</th>
<th>Monthly (12 sessions per year) N (%)</th>
<th>More than monthly (12+ sessions per year) N (%)</th>
<th>Nutrition Education is not available for program participants N (%)</th>
<th>Other N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana (6; 16)</td>
<td>Minimum 2 per month*</td>
<td>Congregate Meals</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>6 (100%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Bound Meals</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>6 (100%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Michigan (5; 16)</td>
<td>Monthly nutrition at meal site and as appropriate to home bound clients*</td>
<td>Congregate Meals</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>5 (100%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Bound Meals</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>5 (100%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Ohio (5; 12)</td>
<td>Twice per year*</td>
<td>Congregate Meals</td>
<td>4 (80.0%)</td>
<td>1 (20.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Bound Meals</td>
<td>4 (80.0%)</td>
<td>1 (20.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Illinois (4; 13)</td>
<td>Semi-annual basis or more frequently if possible*</td>
<td>Congregate Meals</td>
<td>0 (0.0%)</td>
<td>1 (25.0%)</td>
<td>2 (50.0%)</td>
<td>1 (25.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Bound Meals</td>
<td>0 (0.0%)</td>
<td>2 (50.0%)</td>
<td>1 (25.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>1 (25.0%)</td>
</tr>
<tr>
<td>Wisconsin (3; 4)</td>
<td>Education at least four times per year, once per quarter*</td>
<td>Congregate Meals</td>
<td>0 (0.0%)</td>
<td>3 (100%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Bound Meals</td>
<td>0 (0.0%)</td>
<td>2 (66.7%)</td>
<td>1 (33.3%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Minnesota (3; 7)</td>
<td>Follows federal guidelines-one session per year*</td>
<td>Congregate Meals</td>
<td>0 (0.0%)</td>
<td>1 (33.3%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>1 (33.3%)</td>
<td>1 (33.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Bound Meals</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>1 (33.3%)</td>
<td>2 (66.7%)</td>
</tr>
</tbody>
</table>

*Northwest Indiana Community Action, 2012; Office of Services to the Aging, 2008; Ohio Department on Aging, 2009; Northeastern Illinois Area on Aging Nutrition Standards, IDOA 603.20 (I); Department of Health Services Division of Long Term Care Bureau of Aging and Disability Resources, 2011; Administration on Aging, 2010.
RQ #2. What nutrition education methods are used?

This study also examined different methods used to present nutrition education for both services. Participants were able to select all that applied from several options. The most commonly used method was printed materials which was selected by 25 out of 26 areas, followed by lectures (19 areas), visual displays (12 areas), cooking classes (11 areas), workshops (4 areas), and trips to the grocery store/market (2 areas) for congregate nutrition services. The most commonly used method for home delivered nutrition services was printed material which was selected by 25 out of 26 areas, followed by phone education (1 area), trips to the store/market (1 area), and workshops (1 area), as seen in figure 1 below.

![Figure 1 Methods of Education Provided](image-url)
RQ #3. Are there provisions in place for nutrition education for the disabled?

Table 4 represents the special accommodations made for participants with visual and/or hearing disabilities. Accommodations in nutrition education for congregate meal site participants with visual or hearing disabilities takes place in nine (34.6%) areas. One (3.8%) area accommodated strictly for those with visual disabilities. Thirteen (50%) areas reported they do not provide specialized nutrition education for those with visual or hearing impairments. Three (11.5%) areas did not know if they made special accommodations for those with visual or hearing impairments. When looking at accommodations for home delivered nutrition, it is noted that five (19.2%) areas accommodated for both disabilities. Three (11.5%) areas accommodated strictly for those with visual disabilities and one (3.8%) area strictly accommodated for those with hearing disabilities. Eleven (42.3%) areas reported they do not provide specialized nutrition education for those with visual or hearing impairments. Six (23.1%) areas did not know the answer.

Table 4  Descriptions of Special Accommodations Made for Participants with Visual and/or Hearing Disabilities.

<table>
<thead>
<tr>
<th></th>
<th>Congregate Meals</th>
<th>Home Delivered Meals</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Yes, but only accommodate for those with visual disabilities</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>Yes, but only accommodate for those with hearing disabilities</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Yes, we accommodate for both disabilities</td>
<td>9</td>
<td>34.6</td>
</tr>
<tr>
<td>No, we do not provide specialized education for those with visual or hearing disabilities</td>
<td>13</td>
<td>50.0</td>
</tr>
<tr>
<td>Do not know</td>
<td>3</td>
<td>11.5</td>
</tr>
</tbody>
</table>
Next, respondents listed the specialized nutrition education for congregate and home delivered nutrition participants with visual and/or hearing disabilities the AAA offers (Table 5). Some commonalities for congregate nutrition services that were noted included the use of larger fonts, color or bolded materials, verbally reading the materials out loud, and the use of specialized devices such as hand held magnifiers. Various themes that emerged for home delivered nutrition services included the use of larger fonts, color or bolded materials, and the use of specialized devices.

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Generalized Response</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Congregate Nutrition Services</strong>&lt;br&gt;If your AAA provides specialized nutrition education for congregate participants with visual and/or hearing disabilities (such as larger size font, colored brochures, bulletin boards, etc.) please list how your AAA conveys nutrition education.</td>
<td>Larger font</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Colored/Bolded materials</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Oral review of materials</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Device instrumentation available</td>
<td>2</td>
</tr>
</tbody>
</table>

| **Home Delivered Nutrition Services**<br>If your AAA provides specialized nutrition education for home delivered meal participants with visual or hearing disabilities (such as larger size font, colored brochures, etc.) please list how your AAA conveys nutrition education. | Larger font | 8 |
| | Colored/Bolded materials | 5 |
| | Device instrumentation available | 2 |
Satisfaction of Nutrition Education According to Responding Nutrition Representatives

The satisfaction of the nutrition representatives was also evaluated for both programs in regards to nutrition education. Eighteen (69.2%) representatives stated that they were somewhat satisfied, satisfied, or very satisfied with the nutrition education provided to congregate meal participants. Five (19.2%) areas reported neutral satisfaction. Three (11.5%) areas reported somewhat dissatisfied. The satisfaction of the nutrition representatives for nutrition education provided to home delivered meal participants was also evaluated. Seventeen (65.4%) areas were somewhat satisfied, satisfied, or very satisfied with the nutrition education provided to congregate meal participants. Seven (26.9%) areas reported neutral satisfaction. Two (7.7%) areas reported very dissatisfied, dissatisfied, or somewhat dissatisfied.

The survey also asked the respondents if there were no resource or other limitations, what changes representatives would like to see in regards to nutrition education for congregate meal participants. Table 6 shows generalized themes that were frequently mentioned including more presentations, seminars, and demonstrations. In addition, more education from professionals such as dietitians, more uniform regulations from each state, and additional funding were also proposed. When asked the same question pertaining to home delivered nutrition services, common topics that were frequently mentioned included more use of color for written materials, networking with colleges/other agencies, one on one counseling with clients, in-home visits with hands on cooking demonstrations, and access to public TV to offer nutrition education. In addition, more education from professionals such as dietitians and increasing additional funding were also suggested.
Table 6  Desired Changes in Nutrition Education Programs if there were no Resource Limitations.

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Generalized Response</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Congregate Nutrition Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you had no resource or other limitations, what changes would you like to</td>
<td>Demonstrations</td>
<td>7</td>
</tr>
<tr>
<td>see in your nutrition education program for congregate meals?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Presentations/seminars</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>More education from professionals and other</td>
<td></td>
</tr>
<tr>
<td></td>
<td>organizations</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>More uniform</td>
<td></td>
</tr>
<tr>
<td></td>
<td>regulations/more funding</td>
<td>4</td>
</tr>
<tr>
<td><strong>Home Delivered Nutrition Services</strong></td>
<td>In home/one-on-one nutrition education by a</td>
<td></td>
</tr>
<tr>
<td>If you had no resource or other limitations, what changes would you like to</td>
<td>professional</td>
<td>10</td>
</tr>
<tr>
<td>see in your nutrition education program for home delivered meals?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Better materials</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>More funding</td>
<td>1</td>
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</table>

Summary

Twenty six nutrition representatives within Region V participated in this study to determine the type and the amount of nutrition education being provided to Title III-C recipients and to identify if special accommodations are being made for those with visual and hearing impairments. When reviewing the frequency of nutrition education provided in different states Indiana, Michigan, and Wisconsin appear to have more uniformity with their individual state, meaning each reporting area in the state provides the same amount of education, for congregate meal programs. Indiana and Michigan’s also showed this same consistency with regards to the amount of education offered to home delivered meal program participants. The other three states for congregate meal programs and four states
for home delivered programs had varying degrees of nutrition education offered to both program participants, meaning one area within the state provides a different amount of education than others.

Frequent methods used to convey nutrition education for congregate meal site participants included printed materials, lectures, visual displays, and cooking classes. When looking at home delivered meal programs, the most commonly used method was shown to be printed materials.

Approximately half of the AAAs responding to this survey did not provide specialized accommodations for those with hearing or visual impairments in congregate meal settings. For those areas providing accommodations, adaptations used by congregate sites include larger font, color or bolded materials, offering handheld magnifiers, and verbally reading the materials out loud to participants. Less than half of the AAAs responding to this survey did not provide specialized accommodations for those with hearing or visual impairments for home delivered meal participants. For those areas providing accommodations, commonly mentioned adaptations for home delivered meal participants included larger font, color or bolded materials, offering handheld magnifiers, and partnering with appropriate organizations to assist in nutrition education.
CHAPTER V

DISCUSSION

The purpose of this study was to measure the type and frequency of nutrition education being provided to congregate meal site and home delivered meal participants. Further the purpose was to determine if special accommodations are being made for participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. A discussion of the results will be presented in this section.

RQ #1. Over the past 12 months, how often has nutrition education been provided to:

a) congregate meal site participants?

Federal guidelines for congregate meal sites include that the program must provide nutrition education, nutrition counseling, and other nutrition services, as appropriate, based on the needs of meal participants (OAA, 2008). The majority of the responses from the survey affirm that their area was in compliance under Federal Guidelines by providing nutrition education.

When looking further in depth, there was variance among states. All respondents that participated in this survey for Indiana are consistently exceeding more than monthly
(12+ sessions per year) nutrition education sessions per year for congregate meal programs. However, it cannot be concluded Indiana respondents are meeting state guidelines because the survey instrument did not include the specific Indiana guidelines. Indiana guidelines specify that participants must be provided a minimum of two pieces of nutrition education each month (Indiana Division of Aging, 2006).

Michigan’s regulations require monthly nutrition education sessions at each meal site (Office of Services to the Aging, 2008). Of the five respondents, all (100%) responded that their AAA provided monthly sessions (12 sessions per year). It appears that those AAAs that participated in this survey are meeting the state recommendations.

Ohio’s Department of Aging requires each provider must offer a nutrition education service two times per year for congregate meal site participants (Ohio Department on Aging, 2009). Results showed of the five respondents from Ohio four (80%) areas are meeting the guidelines by providing nutrition education twice per year and one (20%) area is exceeding the requirement by providing nutrition education four sessions per year.

According to the Northeastern Illinois Area on Aging Nutrition Standards, each nutrition project shall provide nutrition education on at least a semi-annual basis to the participants in the nutrition programs (IDOA 603.20 (I)). All area’s that participated in this study for the state of Illinois showed to be meeting current recommendations. Illinois has one (25%) area that provide nutrition education quarterly, two (50%) areas provide education monthly, and one area (25%) selected more than monthly (12+ sessions per year).
The Department of Health Services Division of Long Term Care Bureau of Aging and Disability Resources (2011) for Wisconsin encourages at least four times per year of nutrition education, once each quarter. Wisconsin shows three of three (100%) areas that provide quarterly nutrition education. Results show all participating areas in Wisconsin are fulfilling the nutrition education requirements for congregate meals.

Minnesota’s Board on Aging requires one session of nutrition education per participant per year (Administration on Aging, 2010). Minnesota demonstrates one (33.3%) area providing nutrition education quarterly, one (33.3%) area does not provide nutrition education, and one (33.3%) area selected other.

b) home delivered meal participants?

Within Section 336 of the OAA, for the establishment and operation of nutrition projects for home delivered nutrition service, regulations include that they must provide nutrition education, nutrition counseling, and other nutrition services, as appropriate, based on the needs of meal recipients (OAA, 2008).

Indiana guidelines specify that participants must be provided a minimum of two pieces of nutrition education each month (Indiana Division of Aging, 2006). All respondents that participated in this survey for Indiana are consistently exceeding more than monthly (12+ sessions per year) nutrition education sessions per year for home delivered nutrition programs. Again, it cannot be concluded Indiana respondents are meeting state guidelines because the survey instrument did not include the specific Indiana guidelines.
Michigan’s regulations require areas to provide nutrition education as appropriate to homebound clients (Office of Services to the Aging, 2008). Of the five respondents, all (100%) responded that their AAA provided monthly sessions (12 sessions per year).

Ohio’s Department of Aging requires each provider must offer a nutrition education service two times per year for home delivered meal participants (Ohio Department on Aging, 2009). Ohio has four (80%) areas that provide nutrition education twice per year and one (20%) area gave nutrition education quarterly. All areas from Ohio that participated in the survey show that state requirements are being met or being exceeded.

According to the Northeastern Illinois Area on Aging Nutrition Standards, each nutrition project shall provide nutrition education on at least a semiannual basis to the participants in the nutrition programs (IDOA 603.20 (I)). Illinois has two (50%) areas that provide nutrition education quarterly, one (25%) area provides education monthly, and one area (25%) selected other.

The Department of Health Services Division of Long Term Care Bureau of Aging and Disability Resources (2011) for Wisconsin encourages at least four times per year of nutrition education, once each quarter. Wisconsin shows two (66.7%) areas that provide quarterly nutrition education and one (33.3%) area with monthly nutrition education. Results show Wisconsin is fulfilling the state’s recommendations.

Minnesota’s Board on Aging requires one session of nutrition education per participant per year (Administration on Aging, 2010). Minnesota demonstrates one (33.1%) area does not provide nutrition education and two (66.7%) areas selected other.
RQ #2. What nutrition education methods are used for:

a. congregate meal site participants?

This study examined the frequency of various methods used to convey nutrition education. Participants were able to select all that applied from the several options given. Like Biggerstaff (2011), handouts were noted to be the most popular form of nutrition education. This study showed the most commonly used method is printed material which was selected by 25 out of 26 areas, followed by lectures (19 areas), visual displays (12 areas), cooking classes (11 areas), workshops (4 areas), and trips to the grocery store/market (2 areas). These findings were consistent with Duerr (2003) who researched that the older population would prefer to receive nutrition education through various methods such as demonstrations, written/physical sources, and presentations such as guest speakers. It has been shown that nutrition education programs targeted to congregate nutrition site participants must address their unique nutritional needs while engaging them in activities that promote learning and motivate them to make positive lifestyle changes (Bobroff et al., 2003). As shown in this study, AAAs in Region V provides a variety of methods used to convey nutrition education.

The survey asked the respondents if there were no resource or other limitations, what changes participants would like to see in regards to nutrition education for congregate meal participants. Generalized themes that were frequently mentioned included more presentations, seminars, and demonstrations. In addition, more education from professionals such as dietitians, more uniform regulations from each state, and additional funding were suggested.
b. home delivered participants?

Like congregate meal programs, the different methods used to present nutrition education to home delivered meal program participants were also evaluated. Representatives were able to select all that applied from several options. The most commonly used method is printed material which was selected by 25 out of 26 areas, followed by phone education (1 area), trips to the store/market (1 area), workshops (1 area), and other (3 areas). Wunderlich et al. (2011) used handouts and telephone counseling to examine nutrition factor scores and nutrition behaviors of home delivered meals. Results showed that nutrition education and counseling did help improve nutritional risk scores of home delivered meal participants. In addition, this article suggested home delivered meal participants should be the primary focus for more effective education and counseling.

The survey asked the respondents if there were no resource or other limitations, what changes they would like to see in regards to nutrition education for home delivered meal participants. Common topics that were frequently mentioned included more color for written materials, networking with colleges/other agencies, one on one counseling with client, in home visits with hands on cooking demonstrations, and access to public TV to offer nutrition education. In addition, more education from professionals such as dietitians and increasing additional funding were also noted.

RQ #3. Are there provisions in place for nutrition education for the disabled:  

a) congregate participants?

Elderly people with dual sensory loss and single impairments are at risk for decreased everyday competence and the capacity for independent living (Brennan,
Horowitz, & Su, 2005). The intention of congregate meal programs are to help those in the greatest social and economic need, especially low income individuals, minority individuals, those in rural communities, those with limited English proficiency and those at risk of institutional care (AoA, 2012a). Approximately 34.6% of areas in Region V that participated in this study provided specialized accommodations in nutrition education for those who have hearing or visual impairments. One (3.8%) area accommodated strictly for those with visual disabilities. Some commonalities that were noted included the use of larger fonts, color or bolded materials, verbally reading the materials out loud, and the use of specialized devices such as hand held magnifiers. Half of the areas reported they do not provide specialized nutrition education for those with hearing or visual impairments.

b) home delivered participants?

Studies have shown there is a high prevalence of sensory impairments for those adults transitioning from independent living communities to institutionalized care (Jee et al., 2005). Home delivered nutrition programs are intended to help those older adults remain in their homes. It has been suggested that it is more cost effective to help individuals with sensory disabilities by maintaining their independence through programs than to deal with the continual decline in mental and physical health issues associated with the disability (Brennan, Horowitz, & Su, 2005). Specialized accommodations in nutrition education for those with hearing or visual disabilities takes place in five (19.2%) areas. Three (11.5%) areas accommodate strictly for those with visual disabilities and one (3.8%) area strictly accommodates for those with hearing disabilities. Eleven (42.3%) areas reported they do not provide specialized nutrition education for those with hearing
or visual impairments. Various themes that emerged included the use of larger fonts, color or bolded materials, and the use of specialized devices such as hand held magnifiers.

**Respondents’ Satisfaction with Nutrition Education Provided**

The satisfaction of the nutrition representatives was also evaluated in this study. Over half of the respondents were somewhat satisfied, satisfied, or very satisfied with the nutrition education provided to congregate meal participants. Like congregate meal programs, over half of the representatives were somewhat satisfied, satisfied, or very satisfied with the nutrition education provided to home delivered meal participants. The majority (72.2%) for both programs of the responding nutrition representatives that were somewhat satisfied, satisfied, or very satisfied with nutrition education offered nutrition education programs similarly to both congregate and home delivered nutrition services.

**Federal and State Guidelines**

Federal guidelines require that congregate meal sites and home delivered nutrition services provide nutrition education (OAA, 2008). The OAA established these guidelines to improve the current health status of the older population dependent upon individual needs. Although there are federal guidelines in place, these recommendations are open to interpretation and implementation by each state, allowing for variance among the states. The majority of states in Region V have strikingly different guidelines in regards to nutrition education program participants. For example, Indiana suggests two or more pieces of education per month for both congregate and home delivered nutrition programs, while Ohio only requires education twice per year. In addition, minimal focus has been made regarding disabilities. While the majority of the states are meeting
individual state guidelines, having uniformity amongst the states could strengthen the education program for older adults receiving congregate or home delivered nutrition services. Little research was available to the primary investigator pertaining to the specific areas of sensory disabilities and education. The current study adds to the limited research available on this topic, however, more research and uniformed guidelines may allow for the improvement of nutrition education provided to older adults with sensory disabilities participating in congregate and home delivered meal programs.

Survey Procedures

Contacting the Regional Administrator for Region V provided the researcher with valuable contact information for each state and background information regarding the policies and procedures for nutrition education within this area. There was an increase in participation from nutrition representatives with state representatives that were involved with providing the researcher contact information for nutrition representative within their state. If the state representative was not active in helping in the recruitment process, it was much harder to obtain contact information of the nutrition representatives.

While obtaining participant contact information, it was discovered that several areas within Region V use contracted services to facilitate their nutrition services. Participants consisted of each AAA’s nutrition representative as opposed to outside contracted nutrition services if applicable. With the trend of some contracted nutrition services the responsibility of who provides nutrition education has become less defined. In addition, some respondents reported having difficulty with accessing the survey due to company regulation in regards to internet usage. The inability to receive confirmation from Qualtrics, in regards to making sure each recipient had received the survey made it
difficult to know if the survey had even been received at all.

**Summary**

It is important to recognize the need of nutrition education for congregate and home delivered meal participants. The majority of participants in this study are implementing the Older Americans Act’s requirements and individual state guidelines. For the most part, printed materials are the most commonly used method for nutrition education when presenting to congregate and home delivered meal participants. Accommodations for adults with hearing or visual impairments should be carefully considered and become more prevalent as our population of the United States continues to age. In conclusion, when working with congregate and home delivered meal participants, it is vital to provide them with tailored information in an appealing matter to best meet their needs.

Despite the increasing aging population of the United States, limited research has been conducted regarding the effects of nutrition education provided by entitlement programs such as congregate and home delivered meal programs on the aging population. Of the respondents that participated in this survey, four of the six states in Region V are meeting or exceeding their current state guidelines for nutrition education provided to congregate and home delivered meal participants.
CHAPTER VI

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

The purpose of this descriptive study was to measure the type and frequency of nutrition education being provided to congregate meal site and home delivered meal participants. Further the purpose was to determine if special accommodations are being made for participants with visual and hearing impairments in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. The conclusion of the study, limitations, and recommendations for future research are presented in this chapter.

Conclusion

Despite the increase of the aging population in the United States, little focus has been made on the evaluation of nutrition education provided to older adults that participate in entitlement programs such as congregate and home delivered nutrition programs. Educational programs targeted to a specific health condition can improve the health status of an older individual (Miller et al., 2002). It has been suggested that it is more cost effective to help individuals with sensory disabilities by maintaining their independence through programs than to deal with the continual decline in mental and physical health issues associated with the disability (Brennan, et al., 2005).
Most of the area programs that participated in this survey have met the federal guidelines of congregate and home delivered meal programs. Interestingly, only four of the six state’s respondents were meeting or exceeding their respective current state guidelines regarding nutrition education.

Methods used to convey nutrition education to congregate meal participants were printed materials, lectures, visual displays, cooking classes, workshops, and trips to the grocery store/market. Methods for home delivered nutrition programs are limited to printed materials, phone education, trips to the store/market, and workshops.

This research revealed special accommodations in nutrition education for those with visual or hearing impairments that participated in congregate meal programs were limited to approximately half of the respondents. Some respondents did not provide or were unsure if their AAA provided nutrition education to congregate meal programs. Special accommodations included the use of larger fonts, color or bolded materials, verbally reading the materials out loud, and the use of specialized devices such as handheld magnifiers. Further in regards to home delivered meal programs over half of the nutrition representatives showed their AAA does not accommodate for visual or hearing impairments or they are unsure if provisions are in place. Methods used for the home delivered nutrition participants with visual or hearing impairments consist of the use of larger fonts, color or bolded materials, and the use of specialized devices as magnifying glasses.

**Limitations of the Study**

The research was limited in the following ways:

- Since there was not 100% participation of each area, responses could not be
assumed to reflect all representatives of each state.

- The study was confined to the geographical area of Region V.
- Researcher was unable to confirm all 68 e-mail addresses for participants due to limitations in the survey program. At the time of the survey Qualtrics software did not show failed e-mail deliveries and thus receipt of the e-mail could not be confirmed.
- Multiple AAA respondents noted a lack of funding as contributing factor of the types and degree of nutrition education provided to participants.
- Participants consisted of each AAA’s nutrition representative as opposed to outside contracted nutrition services. In contacting area agencies throughout Region V, it was discovered by the researcher that several areas have contracted out nutrition services.

**Recommendations for Further Research**

Based on the results of the study, the following recommendations for further research are made:

- To identify each state’s representative for congregate and home delivered nutrition program in order to provide general information regarding contact information and state regulations.
- To increase compliance, researcher may consider offering both a paper and an electronic survey depending on the needs of the area representative.
- To maximize the response rate, send an introductory e-mail using an outside e-mail program that would allow a confirmation receipt to be viewed.
- Expanding the study to include all of the United States would provide a much
larger basis to evaluate how nutrition education is being presented. It would also
give much better perspective on what types of accommodations are being used
currently as well as what accommodations may need to be made that have not
been implemented yet for those with visual and/or hearing impairments.

- Further research could facilitate the development of a shared nutrition education
template which could be used by all states.

- Having uniformity amongst the states could strengthen the nutrition education
program for older adults receiving congregate and home delivered nutrition
services in Region V.
REFERENCES


Roth, Roth. “Differences in nutrition knowledge of the elderly according to nutrition risk levels, levels of education, age and gender.” Master’s thesis, Ball State University, 1995.


APPENDIX A

INSTITUTIONAL REVIEW BOARD MATERIALS

CITI Certificate of Completion

Appendix A – CITI Certificate of Completion
CITI Collaborative Institutional Training Initiative
Social & Behavioral Research - Basic/Refresher Curriculum Completion Report
Printed on 1/19/2012

**Learner:** Michelle Bojrab (username: mabojrab@bsu.edu)

**Institution:** Ball State University

**Contact Information**
Department: Food and Nutrition  
Email: mabojrab@bsu.edu

**Social & Behavioral Research - Basic/Refresher:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

**Stage 1. Basic Course Passed on 09/15/11** (Ref # 6711033)

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<td>Privacy and Confidentiality - SBR</td>
<td>09/15/11</td>
<td>5/5 (100%)</td>
</tr>
<tr>
<td>Research with Prisoners - SBR</td>
<td>09/15/11</td>
<td>4/4 (100%)</td>
</tr>
<tr>
<td>Research with Children - SBR</td>
<td>09/15/11</td>
<td>3/4 (75%)</td>
</tr>
<tr>
<td>Research in Public Elementary and Secondary Schools - SBR</td>
<td>09/15/11</td>
<td>4/4 (100%)</td>
</tr>
<tr>
<td>International Research - SBR</td>
<td>09/15/11</td>
<td>3/3 (100%)</td>
</tr>
<tr>
<td>Internet Research - SBR</td>
<td>09/15/11</td>
<td>4/4 (100%)</td>
</tr>
<tr>
<td>Research and HIPAA Privacy Protections</td>
<td>09/15/11</td>
<td>5/5 (100%)</td>
</tr>
<tr>
<td>Vulnerable Subjects - Research Involving Workers/Employees</td>
<td>09/15/11</td>
<td>3/4 (75%)</td>
</tr>
<tr>
<td>Conflicts of Interest in Research Involving Human Subjects</td>
<td>09/15/11</td>
<td>2/2 (100%)</td>
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<tr>
<td>Ball State University</td>
<td>09/15/11</td>
<td>no quiz</td>
</tr>
</tbody>
</table>
APPENDIX B

NUTRITION EDUCATION FOR CONGREGATE AND HOME DELIVERED NUTRITION SERVICES SURVEY
Appendix B – Survey Instrument

Default Question Block

A Letter of Information and Consent

Study Title
Identification of the Type and Amount of Nutrition Education provided to Title III-C Recipients of Congregate and Home Delivered Meals in Region V: Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota

Study Purpose and Rationale
The purpose of this study is to measure the type and amount of nutrition education being provided to congregate meal site and home delivered meal participants and to identify if special accommodations are being made for those participants with visual and hearing impairments in Region V.

Inclusion/Exclusion Criteria
To be eligible to participate in this study, you must be a “nutrition manager” (or primary person responsible for nutrition programs) for one of the Area Agencies on Aging in the states of Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota.

Participation Procedures and Duration
For this research project, you will be asked to complete a series of survey questions regarding nutrition education provided to meal site and home delivered meal participants. The survey will take approximately 6 minutes to complete.

Data Confidentiality or Anonymity
All data will be maintained as confidential and no identifying information such as names will appear in any publication or presentation of the data.

Storage of Data
The data will also be entered into a software program and stored on the researcher’s password-protected computer for three years and then deleted. Only members of the research team will have access to the data.

Benefits
There are no perceived benefits to the person for participating in this study.

Voluntary Participation
Your participation in this study is completely voluntary and you are free to withdraw your permission at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before agreeing to participate in this survey and at any time during the study.

IRB Contact Information
For one’s rights as a research subject, you may contact the following: For questions about your rights as a research subject, please contact the Director, Office of Research Compliance, Ball State University, Muncie, IN 47306, (765) 285-5070 or at irb@bsu.edu.

I agree to participate in this research project entitled, Identification of the Type and Amount of Nutrition Education provided to Title III-C Recipients of Congregate and Home Delivered Meals in Region V: Indiana, Michigan, Ohio, Illinois, Wisconsin, and Minnesota. I understand that my participation in this study is completely voluntary and all information will be kept confidential. I have read the description of this project and give my consent to participate.

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation.

Researcher Contact Information
Principal Investigator:
Michelle A. Bojarb, RD, CD
Graduate Student
Family and Consumer Science
Ball State University
Muncie, IN 47306
Telephone: (260) 466-5984
Email: mabojarb@bsu.edu

Faculty Supervisor:
Alice Spangler, PhD, RD

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Do you wish to participate in this survey?
   Yes, I wish to participate.  
   No, I do not wish to participate.

1. Please select the state your Area Agency on Aging (AAA) is located.
   - Indiana
   - Michigan
   - Ohio
   - Wisconsin
   - Minnesota
   - Illinois
   - None of the above

2. Are the following services currently available in your AAA?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congregate Nutrition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Delivered Nutrition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition Counseling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition Screening</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Please rank the following categories in the level of importance to your AAA.
   With 1 being the highest level of importance, 2 being moderately important, and 3 being least important. Drag programs and drop programs in order of importance.

Nutrition Counseling
Nutrition Education
Nutrition Screening

For this section of questions you will be answering questions related to the Congregate Meal Program.
4. What is the availability of nutrition education for congregate nutrition program participants? The nutrition education may be offered by your AAA or coordinated with a local service provider. Please select one of the following:

- Available throughout the entire AAA.
- Available in a portion of the AAA.
- Not available in the AAA.
- Do not know

5. According to your current AAA policy, how often are nutrition education services provided to program participants for the congregate nutrition program in your area? Please select one of the following:

- Yearly (1 session per year)
- Twice per year (2 sessions per year)
- Quarterly (4 sessions per year)
- Monthly (12 sessions per year)
- More than monthly (12+ sessions per year)
- Nutrition education is not available for program participants
- Other
- Do not know

6. What methods are used when presenting nutrition education to congregate meal site participants? Please select all that apply from the following (if other, please specify):

- Cooking classes/sessions
- Lectures
- Phone education
- Printed materials
- Trips to the store/market
- Visual displays
- Workshops
- Other
- Do not know

7. Do you provide specialized nutrition education for congregate participants with visual or hearing disabilities? Please select one of the following:

- Yes but we only accommodate for those with visual disabilities.
8. If your AAA provides specialized nutrition education for congregate participants with visual and/or hearing disabilities (such as larger size font, colored brochures, bulletin boards, etc.) please list how your AAA conveys nutrition education.

9. Overall, how satisfied are you with the educational aspects that your area agency offers to congregate meal programs?

10. If you had no resource or other limitations, what changes would you like to see in your nutrition education program for congregate meals?

Please note, the following questions now relate to the Home Delivered Nutrition Program.

11. What is the availability of nutrition education for home delivered nutrition program participants? The nutrition education may be offered by your AAA or coordinated with a local service provider. Please select one of the following:
   - Available throughout the entire AAA.
   - Available in a portion of the AAA.
   - Not available in the AAA.
12. According to your current AAA policy, how often are nutrition education services provided to program participants for the home delivered nutrition program in your area?
Please select one of the following:
- Yearly (1 session per year)
- Twice per year (2 sessions per year)
- Quarterly (4 sessions per year)
- Monthly (12 sessions per year)
- More than monthly (12+ sessions per year)
- Nutrition education is not available for program participants
- Other
- Do not know

13. What methods are used when presenting nutrition education to those participants receiving home delivered nutrition services?
Please select all that apply from the following (if other, please specify):
- Cooking classes/sessions
- Lectures
- Phone education
- Printed materials
- Trips to stores/markets
- Visual display
- Workshops
- Other
- Do not know

14. Do you provide specialized nutrition education for home delivered meal participants with disabilities?
Please select one of the following:
- Yes but we only accommodate for those with visual disabilities.
- Yes but we only accommodate for those with hearing disabilities.
- Yes, we accommodate for both disabilities.
- No, we do not provide specialized nutrition education for those with visual or hearing disabilities.
- Do not know
15. If your AAA provides specialized nutrition education for home delivered meal participants with visual or hearing disabilities (such as larger size font, colored brochures, etc.) please list how your AAA conveys nutrition education.

16. Overall, how satisfied are you with the educational aspects that your area agency offers to home delivered meal programs?

Very Dissatisfied  Dissatisfied  Somewhat Dissatisfied  Neutral  Somewhat Satisfied  Satisfied  Very Satisfied

17. If you had no resource or other limitations, what changes would you like to see in your nutrition education program for home delivered meals?

18. Please list any addition comments you may have regarding this survey. Thank you for your participation in this survey!
APPENDIX C

LETTER OF INFORMED CONSENT

C-1: Letter of Permission from Jim Varpness
RE: Ball State University Research Topic

Varpness, Jim (ACL/RSC/Region V) < jim.varpness@aoa.hhs.gov>
To: "Bojrab, Michelle A" <mabojrab@bsu.edu>

Here you go –

I have listened to your proposed survey and understand that you will be contacting our network of aging agencies. Good luck.

Jim Varpness
Regional Administrator
Regions V and VI - Chicago and Kansas City
(IL, IN, IA, KS, MI, MN, MO, NE, OH, WI)
Administration for Community Living
U.S. Department of Health and Human Services
APPENDIX D

LETTERS AND REMINDERS

D-1: Letter of Introduction

D-2: Distribution of Survey

D-3: Reminder E-mail with Hyperlink
Dear Nutrition Managers,

My name is Michelle Bojrab. I am a graduate student in the Department of Family and Consumer Sciences at Ball State University in Muncie Indiana. I will be conducting a study to measure the type and amount of nutrition education being provided to congregate meal site and home delivered meal participants and to identify if special accommodations are being made for those participants with visual and hearing impairments in Region V (Indiana, Michigan, Ohio, Illinois, Wisconsin & Minnesota). It is my goal to obtain a better understanding of nutrition education provided to Title-IIIC recipients in the Midwest region. Each area agency nutrition manager in the six states will receive an electronic survey. The brief online survey will be distributed in approximately one week via Qualtrics.com. Your participation in this study will be completely voluntary and all information will be kept confidential. I would greatly appreciate your taking time to complete this survey!

Please feel free to contact me if you have questions.

Sincerely,
Michelle Bojrab, RD, CD
Graduate Student
Family and Consumer Science
Ball State University
Muncie, IN 47306
(260) 466-5984
mabojrab@bsu.edu
Dear Nutrition Managers,

My name is Michelle Bojrab. I am a graduate student in the Department of Family and Consumer Sciences at Ball State University in Muncie Indiana. I will be conducting a study to measure the type and amount of nutrition education being provided to congregate meal site and home delivered meal participants and to identify if special accommodations are being made for those participants with visual and hearing impairments in Region V (Indiana, Michigan, Ohio, Illinois, Wisconsin & Minnesota). It is my goal to obtain a better understanding of nutrition education provided to Title-IIIC recipients in the Midwest region.

Below is a link to the survey which I will be using to conduct my research. **Please complete this survey prior to October 20, 2012 at 5 pm.** Your participation in this study will be completely voluntary and all information will be kept confidential. I would greatly appreciate you taking the time to complete this survey! Thank you for your participation in this survey.

Please feel free to contact me if you have questions.

**Follow this link to the Survey:**
${l://SurveyLink?d=Take the Survey}$

Or copy and paste the URL below into your internet browser:
${l://SurveyURL}$

Follow the link to opt out of future e-mails:
${l://OptOutLink?d=Click here to unsubscribe}$

Best Regards,

Michelle Bojrab, RD, CD  
Graduate Student  
Family and Consumer Science  
Ball State University  
Muncie, IN 47306  
(260) 466-5984  
mabojrab@bsu.edu
Dear Nutrition Managers,

My name is Michelle Bojrab. I am a graduate student in the Department of Family and Consumer Sciences at Ball State University in Muncie Indiana. I will be conducting a study to measure the type and amount of nutrition education being provided to congregate meal site and home delivered meal participants and to identify if special accommodations are being made for those participants with visual and hearing impairments in Region V (Indiana, Michigan, Ohio, Illinois, Wisconsin & Minnesota). It is my goal to obtain a better understanding of nutrition education provided to Title-IIIC recipients in the Midwest region.

You are receiving this e-mail as reminder that your participation is a vital part of this project. Again, this survey should only take 5 minutes of your time. Several of your colleagues have already completed this survey. Below is a link to the survey which I will be using to conduct my research. Please complete this survey prior to October 20, 2012 at 5 pm. Your participation in this study will be completely voluntary and all information will be kept confidential. I would greatly appreciate you taking the time to complete this survey! Thank you for your participation!

Please feel free to contact me if you have questions.

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:
${l://SurveyURL}

Follow the link to opt out of future e-mails:
${l://OptOutLink?d=Click here to unsubscribe}

Best Regards,
Michelle Bojrab, RD, CD
Graduate Student
Family and Consumer Science
Ball State University
Muncie, IN 47306
(260) 466-5984
mabojrab@bsu.edu