Assessing the nutritional quality of Boy Scouts of America Camp menus

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ASSESSING THE NUTRITIONAL QUALITY OF
BOY SCOUTS OF AMERICA CAMP MENUS

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A thesis submitted in partial fulfillment
of the requirements for the

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William F. Harrah College of Hotel Administration

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Assessing The Nutritional Quality of Boy Scouts of America Camp Menus

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ABSTRACT

Assessing the Nutritional Quality of Boy Scouts of America Camp Menus

by

Gregory Scott Ramin

Dr. Audrey McCool, Thesis Committee Chair
Professor of Food and Beverage Management
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This case study focused on one Boy Scout Council to determine whether the type of foodservice personnel employed affects the nutritional quality of the menus. The study compared a contract foodservice management team to the members of the Council-hired foodservice and administrative management team. The data were collected through a combination of written surveys, follow-up personal and telephone interviews, and nutritional analysis of the menus that the Foodservice Directors provided.

Findings and Conclusion: The hypothesis for this paper stated that the nutritional content of Boy Scout Camp menus from a selected Boy Scouts of America Council will vary according to the ownership of the foodservice delivery system. It was determined that this hypothesis should be rejected as there were no conclusive differences in the nutritional value of menus served by the two approaches to management of the foodservices.
# TABLE OF CONTENTS

ABSTRACT ............................................................................................................................ iii  
LIST OF TABLES ................................................................................................................ vii  
ACKNOWLEDGEMENTS ................................................................................................. viii  
CHAPTER ONE INTRODUCTION .................................................................................. 1  
  Statement of the Problem .............................................................................................. 2  
  Sub-Problems .................................................................................................................. 4  
  Justification ..................................................................................................................... 8  
  Hypothesis ....................................................................................................................... 10  
  Delimitations ................................................................................................................... 11  
  Limitations ....................................................................................................................... 12  
  Definitions ....................................................................................................................... 13  
CHAPTER TWO LITERATURE REVIEW ................................................................... 16  
  Introduction ..................................................................................................................... 16  
  Ideals of Camping ............................................................................................................ 16  
    General Camp and Camp Foodservice Information .................................................. 16  
    ACA National Standards ............................................................................................. 18  
    BSA Camping Program and Guidelines ...................................................................... 20  
      Foodservice Guidelines ............................................................................................... 20  
      Benefits of Camp ....................................................................................................... 21  
  Comparable Programs .................................................................................................... 22  
    Nutritional Knowledge of Foodservice Employees .................................................. 22  
    School Foodservice Programs ................................................................................... 23  
  Adolescents’ Energy Needs, Food Preference, Activity Level, Nutrient Needs, and  
    Food Guide Pyramid ................................................................................................... 24  
      Energy Intake .............................................................................................................. 24  
      Activity Level and Energy Usage ............................................................................ 26  
      Food Preferences and Activity Level ....................................................................... 28  
      Important Nutrients for Adolescents ....................................................................... 30  
      Food Pyramid and Adolescent Male Needs ............................................................. 32  
  Conclusion ....................................................................................................................... 33
CHAPTER THREE  METHODOLOGY .................................................................35
  Introduction ...................................................................................................35
  Description of Camps and the Corresponding Foodservice Directors ..........35
    Camp One .................................................................................................35
      Summer Camp Foodservice Director ......................................................36
      Winter Camp Foodservice Director .......................................................36
    Camp Two ...............................................................................................37
  Organizational Structure of the Council Foodservice .....................................38
    The Case Study Participants ....................................................................38
      Foodservice Director ............................................................................38
      Camp Directors .....................................................................................39
      Camping Services Directors .................................................................39
      Contracted Foodservice Company Administrators ..................................40
  The Survey ..................................................................................................41
    Research Used to Formulate Survey Questions .......................................42
    Sections of the Survey ............................................................................43
    The Approval of the Survey ....................................................................45
    Survey Mailing and Response Time .......................................................45
  The Menu Analysis and Software Used .........................................................46
  Coding of the Survey Responses ................................................................48
  Follow-up phone Interviews .......................................................................48
  Analysis of Survey Data ............................................................................49
  Conclusion ..................................................................................................49

CHAPTER FOUR  RESULTS .............................................................................51
  Introduction ..................................................................................................51
  Survey Response Rate ..............................................................................51
  General Background ..................................................................................52
    Years Associated With Camp Foodservice and General Foodservice ..........52
  Menu Analysis Results .............................................................................57
  Hypotheses Testing ....................................................................................57
    Sub-Hypothesis One: ............................................................................58
    Sub-Hypothesis Two ...............................................................................71
    Sub-Hypothesis Three ...........................................................................71
    Sub-Hypothesis Four .............................................................................72
    Sub-Hypothesis Five ...............................................................................73
    Sub-Hypothesis Six ...............................................................................73
    Sub-Hypothesis Seven ...........................................................................74
  Conclusion ..................................................................................................76

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LIST OF TABLES

Table 1 Exercise Energy (calories) Expenditures per minute for a 100 lb. person ........... 29
Table 2 Survey Respondents' Codes.................................................................................... 47
Table 3 Years in Camp Foodservice.................................................................................. 55
Table 4 Years in General Foodservice.............................................................................. 56
Table 5 Daily Caloric Averages for FSDs........................................................................... 61
Table 6 FSDs Daily Average for Significant and Group Average Difference for Significant Nutrients..................................................................................................... 63
Table 7 Descriptive Statistics of Nutrients ...................................................................... 64
Table 8 FSD1’s Food Group Analysis .............................................................................. 65
Table 9 FSD2’s Food Group Analysis .............................................................................. 66
Table 10 FSD’s Food Group Analysis .............................................................................. 67
Table 11 FSD’s Food Group Analysis .............................................................................. 68
Table 12 Average Number of Portions Served for Food Guide Pyramid Groups.......... 75
Three years of hard work are finally coming to an end with completion of the final requirements of my Masters program. While thanking those that help is important, some people are always left out, and to those people, I apologize.

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The Food and Beverage Management Department

When I first started my work on my Masters, I was working full-time for the Food and Beverage Management Department of the College of Hotel Administration. While my colleagues supported my decision to return to school, I found out that the demands of the masters program needed more of my time than I could give while working full-time.

Dr. Stefanelli, thank you for the support and the foresight to encourage me to teach. I often look back and wonder what I would be doing today had you not given me the opportunity to teach in the department. To the Bells, thank you for all you have done over the years to support me in my goals. Andy, thanks for helping me get started on this paper even though it is 180 degrees from where it was three years ago. Captain Al, thanks for encouraging me in this career field and supporting me over the years.

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CHAPTER ONE

INTRODUCTION

"I loved camp. But, I've long been fascinated by why this is so. After all, camp takes children and separates them from their families, from their televisions, telephones, VCRs, video games, and computers for weeks at a time to take them to what? The woods, to live ten to a cabin without air conditioning or their mom or dad's cooking, bed making, driving, and one-day laundry service. ... And, yes, they love it! When it's over they don't want to leave. And, when they grow up they want to come back"

(Eisner, 2001, p 40).

Eisner's view of summer camp is what campers think about until they return to camp the next summer. The American Camping Association (ACA) reports that 10,000,000 youth in the United States (U.S.) participated in organized summer camp programs in 2002 (American Camping Association, n.d. a). Burton-Szabo (2002) discusses the reasons why camp is so important for adolescents in her Jan/Feb 2002 Camping Magazine article when she states:
"So I guess the answer to the question – why do I go back to camp every 
summer – why do all of us go back to camp every summer – is that it is 
vitally important to the future of children. Camp is a powerful, magical 
place, and it provides opportunities for all of us to grow” (p. 72).

The camp experience educates and motivates young people and leads to an increase in 
their life-long learning (Dworken, 2001). Camp plays an important role in the 
development of the campers in all aspects of their lives (American Camping Association, 
2003).

Statement of the Problem

The Boy Scouts of America (BSA) organization governs the Boy Scout program 
in the US. Regional organizations make up the sub-structure of the national BSA 
program. The four regions across the U.S. comprise certain geographical areas. Within 
these geographical regions are councils. Councils are the organizational units of the BSA 
that are directly responsible for the day-to-day operations of the BSA program within 
these U.S. geographical territories (SHAC, 2004). A major part of the BSA program is 
summer camp (Boy Scouts of America, 1998). An integral part of summer camp is 
foodservice (Boy Scouts of America, 2002).

The scouts’ enjoyment of the camp experience relies heavily on the quality of 
foodservice. The foodservice director, the foodservice director’s staff, and the camp 
director take responsibility for ensuring that the scouts get nutritious meals during their 
time at camp. The BSA has created standards that all council camps must abide by when 
developing camp menus (Boy Scouts of America, 2002).
A search of current literature found that no information exists about individual council compliance with the BSA nutritional standards. When a council Camping Services Director (CSD) was contacted, he could offer no information on his council's compliance with the BSA standards or other councils' compliance with these nutritional concerns. The CSD suggested contacting Mr. Dave Bates, the National BSA Director of Camping and Conservation and the person in charge of the National BSA camping standards and objectives (DCS, personal communication, February 2002).

Mr. Bates could not recall any previous study that had been done to determine if the menus of summer camp operations met the nutritional guidelines that the BSA has set forth in its *Camp Program and Property Management* book (D. Bates, personal communication, February 22, 2002; Boy Scouts of America, 1996). Without any evidence of BSA checking the nutritional content of BSA summer camp menus, determining whether the camps are meeting the guidelines that the BSA outlines in their training and camp manual is impossible (Boy Scouts of America, 2002 & Boy Scouts of America, 1996).

The BSA nutritional standards do not address the complete concerns of the nutritional needs of campers by just looking at the caloric needs of the campers. In chapter two, the research will illustrate the need to look to the food guide pyramid, various nutrients, and the overall nutritional needs of the campers and not just the calories that they are served. These newer standards and the concern that the BSA make them part of their policy statement are addressed.

For this research, a Council within the BSA national organization will be selected to review how well their personnel meet prescribed nutritional standards. In addition to
seeing how well these camp administrators comply with the standards set forth by the
Boy Scouts of America, this study also focuses on the ownership of the foodservice
delivery system. Mr. Bates mentioned, 50% of the camps run their own foodservice
while 50% have an outside company run the foodservice. The reason for choosing this
particular Council was because the Council operates two camps: one where the
foodservice is run by Council-hired personnel and one where a contract foodservice
company does the foodservice. With this Council employing both types of operations,
the research gathered can be used to answer the questions regarding whether the type of
foodservice delivery system influences the nutritional quality of the menus as determined
by the BSA guidelines, the Food Guide Pyramid, and research about the nutrients needed
by adolescent boys. This research will attempt to determine if the ownership of the
foodservice delivery system is a factor in the nutritional quality of the menus produced
for summer camps.

Sub-Problems

A contract foodservice company will be compared against council-hired
foodservice personnel to analyze how closely BSA summer camps, within a particular
Council, follow the nutritional guidelines as stated by the BSA Camp Program and
Property Management book and provide nutritionally adequate menus for youths (Boy
Scouts of America, 2002). The research will examine the nutritional needs of the
campers and see what nutritional policies the BSA currently has in place. These policies,
along with other nutritional standards indicated in the research, will then be examined in
practice at a Council in southeast Texas. The ability of this Council's foodservice personnel to comply with the BSA nutritional standards will be assessed.

In addition to the problem of individual BSA council compliance with the national BSA nutritional standards, several sub-problems have been identified. These sub-problems include adolescent obesity, the role of proper nutrition in the development of adolescents, adolescents and the camping experience in general, and the nutritional education goals of the scouting movement. These sub-problems relate to the nutritional content of BSA summer camp menus because the adolescent boys eating at camp need these problems addressed by camp personnel that develop menus and feed them while they are at camp. As the issues of BSA nutritional standards are discussed, the relationship between the individual sub-problems to the overall problem will be addressed and a clear connection made in chapter two of this paper.

The level of obesity in children has increased dramatically as children's energy intake outpaces their energy expenditure (Lazzer, Boirie, Bitar, Montaurier, Vernet, Meyer, & Vermorel, 2003). The Weight-Control Information Network states that a person's health affects his/her ability to do many activities such as sports, school, and work (National Institutes of Health, 1999). The Center for Disease Control (CDC) attributes poor dietary quality to adolescents eating excessive amounts of fats and inadequate amounts of the required fruits and vegetables (Bijlefeld & Zoumbaris, 2001). Bijlefeld & Zoumbaris (2001) further states that in the last thirty years, obesity has doubled in the United States.

Adequate nutrition for adolescents is essential. Another aspect of adolescent nutrition to be considered is the correlation of inadequate nutrition and the ability of
adolescents to learn. A series of studies found that adolescents who do not get the nutrition they need will be anxious, less responsive socially, and will have a decreased ability to concentrate (NEA.org, 2002-2004a; NEA.org, 2002-2004b; NEA.org, 2002-2004c). Reading, verbal, and motor skills also suffer when adolescents do not eat nutritious meals. Although inadequate nutrition may not permanently affect the brain, it does slow the developmental process of adolescents (NEA.org, 2002-2004a; NEA.org, 2002-2004b; NEA.org, 2002-2004c).

Maria Coleman discusses how children who go to camp learn healthy eating habits and the need for physical activity (American Camping Association, 2004). The importance of camp foodservice is demonstrated through its impact on the youth attending camp.

Rodney and Ford (1971) discuss how vital camp foodservice is to the camp experience. Satisfaction with camp and the overall camp experience is directly associated with the camper’s satisfaction or dissatisfaction with a camp’s foodservice as a whole (Rodney & Ford, 1971). Spain (2002) writes that taking care of campers’ dietary needs is essential for a positive camping experience.

The BSA has had camping programs since the summer of 1910 when the camping program was started at Silver Bay in Lake George, New York (Eells, 1986). In 2002, some 573,893 scouts went to a long-term camp known as the BSA’s “outdoor classroom” (Boy Scouts of America, n.d.).

The scouting program has a seven step ranking system through which the scouts advance during their tenure in the BSA program. These ranks include Scout, Tenderfoot, Second Class, First Class, Star, Life, and Eagle. The Scout
through First Class ranks have requirements that require the scout to learn about healthy eating habits and developing healthy menus. Authors of the Boy Scouts of America Handbook discuss how important healthy eating is to ensuring that scouts can enjoy camp to its fullest (Boy Scouts of America, 1998).

During a telephone interview with Dave Bates, the BSA Foodservice Policies were discussed. Mr. Bates said that a basic premise of the program is that foodservice is an important part of the camp program. This statement agrees with the research of Rodney & Ford (1971) who state that camp foodservice is an essential part of camp (D. Bates, personal communication, February 22, 2002). The authors of the Camp Program and Property Management book (Boy Scouts of America, 2002) also discuss how the morale of campers can be influenced by the meals served. In addition to the opportunity to teach the scouts about common table manners, camp staff and adult leaders should use the meal time to educate the boys about their eating habits and to teach nutrition (Boy Scouts of America, 2002).

BSA camps have various forms of meal service, including commissary issued food, cafeteria served meals, and meals for backpacking. The BSA has found that the type of meal served does not change the nutritional or etiquette benefits (Boy Scouts of America, 2002). During the telephone interview, Mr. Bates said that about 50% of the camps provide their own foodservice, while the remaining 50% have an outside foodservice contractor provide the foodservice for the camp. Nearly 80% of the camps that provide foodservice to their campers do so through cafeteria style feeding (D. Bates, personal communication, February 22, 2002). For these reasons, it is important to
compare camps who contract out the camp’s foodservice management to camps that hire their own foodservice staff.

*Basic Camp Management* (Ball & Ball, 2000) states, “Unless the foodservice manager is a qualified dietitian or nutritionist, the menus should be reviewed by such a person” (p. 204). The BSA *Camp Program and Property Management* book (Boy Scouts of America, 2002) addresses this subject when it states that camp directors are not properly trained to review a menu for its nutritional value. The BSA recommends that each group find a qualified person to review all menus before camp begins (Boy Scouts of America, 2002). The national office and its regional counterparts, however, do not have any direct involvement in the planning or reviewing of the menus of the various camps except for a quick review during camp visitations by BSA volunteer camp inspectors (D. Bates, personal communication, February 2, 2002).

**Justification**

This research will be a case study of the nutritional composition of a selected BSA Council’s summer camp menus. The relationship between the foodservice professional’s knowledge about nutrition and her/his ability to plan, prepare, and serve nutritionally sound menus will be analyzed. In the literature review that was conducted for this study, no prior research was found that discussed the nutritional composition of summer camp menus at BSA camps. The *Camp Program and Property Management* book (Boy Scouts of America, 2002) established guidelines and standards for BSA summer camp foodservice but did not include any research about the application or compliance with these nutritional standards. The 2002 edition of the *Camp Program and*
Property Management book (Boy Scouts of America, 2002 & 1996) had many updated portions in the foodservice chapter that helped to further clarify what the BSA wanted the camps to do in the area of foodservice.

When the literature search focused on nutritional research about all summer camp menus, only information about what was on menus and the nutritional quality of menus was found (Spain, 1999; Spain 2002; and Ball and Ball, 2000). No research appears to have been conducted on the importance of ensuring that the nutritional needs of the campers are being met through the menus developed for summer camps.

As a part of their advancement requirements, scouts need to know basic nutrition and energy needs for adolescents of their age. This need for nutritional information is reinforced by the campers receiving nutritious meals at camp (Boy Scouts of America, 1998). When contacted, Mr. Bates stated that the national office did not keep records on the nutritional analysis of the menus. The National BSA’s lack of nutritional information about BSA camps’ menus was a primary reason for undertaking this study (D. Bates, personal communication, February 22, 2002).

Due to the lack of prior research regarding the nutritional composition of summer camp menus and factors that might influence the nutritional value of these menus, whether for BSA camps or other types of youth camps, it was thought that if the nutritional composition of the menus from one Council could be explored in depth, in a case study format, then any concern about the nutritional value of the camp menus might be expanded to a more national scope at a later time. This study was undertaken in anticipation of gaining a basic understanding of the nutritional composition of one Council’s summer camp menus. It was also anticipated that this study would indicate
whether the ownership of the foodservice management, either contract or council-hired, would affect the nutritional value of the menus served to the campers at summer camp.

Hypothesis

BSA camp menus should be carefully planned to provide campers with a nutritionally balanced meal and the energy necessary to participate in the activities of camp. The researcher anticipates determining the actual nutritional value of the planned menus and whether the nutritional background and knowledge of the contract or council-hired foodservice personnel determines the nutritional value of summer camp menus.

The following hypothesis is the basis for this study. The sub-hypotheses are derived from this hypothesis.

Hypothesis: The nutritional content of Boy Scout Camp menus from a selected BSA Council will vary according to the ownership of the foodservice delivery system.

Sub- H1. The nutritional composition of the Boy Scout camp menus developed by the foodservice management contract company will be in greater accord with the BSA national nutritional guidelines and with nutritional standards for adolescent nutritional intake than the menus developed by foodservice personnel hired directly by the BSA Council.

Sub- H2. The managers of the foodservice management contract company will have a more comprehensive educational background on nutrition than will the Council’s camp directors.
Sub - H3. The managers of the foodservice management contract company will have a more comprehensive educational background on nutrition than will the Council's camp administrators.

Sub - H4. The managers of the foodservice management contract company will have a more comprehensive educational background on nutrition than will the Council's foodservice directors.

Sub - H5. The camp directors of the Council's camps included in this study will have a working knowledge of the nutritional guidelines of the BSA program.

Sub - H6. The foodservice directors at the Council's camps included in this study will have a working knowledge of the nutritional guidelines of the BSA program.

Sub - H7. The menus utilized by the foodservice administrators for the Council's camps included in this study are reviewed by a registered and/or licensed dietitian prior to being used as summer camp menus.

Delimitations

The camp experience offers adolescents a variety of opportunities to explore and increase their understanding of the world and plays an important role in the development of adolescents (American Camping Association, 2003). Such opportunities at camp including hiking, sports related activities, ropes courses, horseback riding, and numerous other activities (American Camping Association, n.d. h; American Camping Association, 2003). In addition to these activities and the learning opportunities at camp, foodservice plays a role in the daily lives of the campers. In fact, Ball and Ball (2000), Spain (1999),
and Rodney and Ford (1971) all agree that camp foodservice is important when compared to the rest of the camp activities. Ball and Ball (2000) discuss how a camp runs on its stomach; it is because of these discussions by those persons involved in the camping community that this case study will look specifically at the ideals of camp foodservice and how important it is to the overall operation of camp.

Limitations

The main limitation to this research is the fact that there are many councils and council summer camps in the U.S. This research will focus on one BSA Council’s summer foodservice operations in the form of a case study. This particular Council will be useful to study because it operates two camps: one camp where the foodservice is operated by Council-hired foodservice personnel, and another camp which has a contract foodservice company operating the foodservice. The two camps and the personnel working at each will be discussed in detail in chapter three.

All managers involved in this Council’s foodservice operation will be questioned as a means of ensuring that the manager’s nutritional responsibilities for this Council’s foodservice operation are discussed. However, because the study is of only one Council’s camps, the results may not be applicable to other councils’ camps.

An additional limitation would be respondents not answering the survey. Non-response would most likely come from the employees of the contract foodservice company because of their proprietary concerns. To help lessen this rate of non-response, the endorsement of the CSD within the Council where the research was to be conducted
was obtained. This endorsement may alleviate any concerns that the contract foodservice managers may have about responding to the survey.

A third limitation is that the menus that are analyzed by a dietitian may not be prepared and cooked by the same persons who developed the menus. This preparation variance may mean that the menu items analyzed for nutritional quality may not be the actual menu items served. The calculated nutritional intake may vary with actual scout intake; therefore, the actual nutritional intake of the scouts at camp may vary from the nutrition results discussed later in this paper. In addition, since each food service director develops his own menus, there may already some unique variances in the data being collected.

Definitions

Backpacking Meals – Meals that a small portion of the campers receive for trail hikes during the camp day (Boy Scouts of America, 2002).

Boy Scout Camp – Any camp that supports a BSA summer program for a week and provides food, programs, and other needs to the scouts (Boy Scouts of America, 2002).

Boy Scout Standards – The policies and procedures that are set forth in the BSA’s Camp Program and Property Management book (Boy Scouts of America, 2002).
Cafeteria Served Meals – Meals that the scouts receive at the dining hall. Here the scouts go through the serving line choosing what food items they want, and then they may have some alternative menu options (like a salad bar, peanut butter and jelly, and leftovers) available in the main dining room (Boy Scouts of America, 2002).

Camp Director – The person at each camp who is solely responsible for all aspects of the camp from food, to inventory, to staffing, to the needs of the campers, any other issues that may need to be addressed at camp. This person is usually either a full-time employee of the council or someone who volunteers full-time with the council (Boy Scouts of America, 2002).

Camping Services Director – This is the full time council employee who is responsible for the maintenance, programming needs, staffing needs, and budgets of the camps within the council. The Assistant Camping Services Director has the same general responsibilities but reports to the Camping Services Director (DCS, personal communications, May 10, 2003).

Commissary – A centralized place for production and procurement of food items for distribution to other areas of the property (Spears & Gregoire, 2003).

Commissary Issued Food – Food that is distributed by the commissary to the scouts in either patrol or unit sized portions. From there the scouts prepare the food within their campsites (Boy Scouts of America, 2002).
Council – A division of the national organization that is independently responsible for the daily operations of the BSA program within a designated geographical territory of the United States (Boy Scouts of America, 1998).

Foodservice Director – Person at camp that is directly responsible for the development and implementation of the developed menus at the summer camp operations (Boy Scouts of America, 2002).

Menu – The food plan to feed the scouts the dietary requirements that they need at this stage in their life (Boy Scouts of America, 2002).
CHAPTER TWO

LITERATURE REVIEW

Introduction

Various aspects of summer camp foodservice will be examined in this study. This chapter is divided into three sections. The first section discusses the basic ideals of camping for general summer camps and then considers the specific ideals of Boy Scouts of America (BSA) camps. The next section discusses research about comparable foodservice programs in K-12 schools and colleges. The review will present research regarding the professional foodservice. The research will then focus on K-12 school foodservice professionals because their administrative responsibilities are similar to that of BSA foodservice administrators. The final section describes adolescents' energy needs, food preferences, activity levels, nutrient needs, and the Food Guide Pyramid recommended servings.

Ideals of Camping

General Camp and Camp Foodservice Information

Eleanor Eell's (1986) wrote that summer camps started in the United States as a response to the urbanization of cities. She indicated that camping offered people an
opportunity to return to nature and experience a mix of educational and leadership opportunities. Eells’ thoughts on camping illustrate the roots of the camping movement. By Eells’ definition, camping is any sustained activity in the outdoors that leads to recreational, creative, and educational opportunity. It also means that administrators within the camp are trained and that the camp environment allows for the campers to grow mentally, physically, spiritually, and socially (Eells, 1986). This definition, supported by the American Camping Association (ACA), indicates that camp is not a way for girls and boys to waste time, but rather is a way for them to enrich and enhance their educational and social understanding of the world (American Camping Association, 2003). Even though camp provides the opportunity for adolescent to get back to nature, the camps’ foodservice operations remains one of the vital parts of camp. Camp foodservice operations are what make the camps run; without foodservice, adolescents would not be able to accomplish the things that they do at camp (Ball & Ball, 2000). For these reasons, camp foodservice will be the focus of this research.

Although there is published research on camps, there is limited research on camp foodservice. Ball and Ball (2000) stated that a camp runs on its stomach in a way similar to an army. This statement indicates the importance of campers receiving good, wholesome foods. Ball and Ball (2000) also wrote about the director’s responsibility for looking at the energy needs of campers early in the planning process and ensuring that the foodservice staff is properly prepared to deliver foods that meet the camper’s needs. Hiring a foodservice manager early in the planning process, and letting her/him know what the camp director wants helps to ensure proper camp foodservice (Ball & Ball, 2000).
The foodservice element should be something that all camp directors consider before, during, and after camp as they plan for each experience. In *Camp Administration*, Rodney and Ford (1971) discussed the importance of the camp commissary and how it played a large role in the health of the campers. They also discussed the effect of good meals on camper happiness and noted that a substantial part of a camp’s operating budget is spent on food (Rodney & Ford, 1971).

**ACA National Standards**

The American Camping Association has put into place a 300-point standard system that covers the health, safety, and program needs of campers (American Camping Association, n.d. g). This system of standards is similar to the BSA standards and is reviewed in much the same way through volunteer teams going to the camps and making sure that the camps comply with the standards. The main difference is that the ACA is a larger accrediting body than the BSA in that the BSA only reviews BSA camps whereas, ACA reviews all types of camps from charity, to non-profit, and for-profit (Boy Scouts of America, 2002 & American Camping Association, n.d. i). Eleven of these 300 camp standards pertain directly to foodservice. Within the eleven standards for foodservice, no requirement discusses the fact that the menus should be reviewed by a registered/licensed dietitian. Additionally, no standard tells the camp foodservice personnel how many calories the meals should include to be beneficial to the campers (American Camping Association, n.d. d). The only references to the menu are made by Ball and Ball (2000) and Spain (2004) in their respective publications that state that a registered/licensed dietitian should review the camp’s menu.
ACA accreditation and use of the ACA logo require that the camp meets the majority of the standards in their 300-point standard system. These standards are used as a means to rate individual camps during accreditation visits done at the camps. During these compliance visits, the visitation team makes sure that the camp is meeting the 300 standards as set forth by the ACA. These standards allow individual camps to know where they need improvement, and they help parents determine which camps to send their adolescents to (American Camping Association, n.d. a). During individual camp visits, every aspect of camp is reviewed by the evaluation team; often these visits include interviews with the campers. Camp foodservice, of course, is one of the areas visited (American Camping Association, n.d. f).

Site visits are the only means for camps to have their camp accredited by the ACA, an independent accrediting board. The results are released the November after the summer visitation to camp, and accreditation is good for three years. If, for some reason, the camp does not pass, the individual camp is notified via certified mail shortly after the visitation team leaves (American Camping Association, n.d. c; American Camping Association, n.d. e). Only 25% of all camps are ACA accredited by the volunteer teams. ACA has been reviewing camp standards for the last 50 years and is the authority on camping (American Camp Association, n.d. c; American Camping Association, n.d. e; American Camping Association, n.d. g). These visits are meant to assist the camps with complying with the ACA standards, and the volunteer visitors are there to help, not to penalize, the camps (American Camping Association, n.d. b). The ACA does not require camps to comply with the eleven foodservice section standards, which indicates that the
ACA does not place the same importance on camp foodservice operations as Ball & Ball (2000), Vicki Spain (2004), or Rodney and Ford (1971).

**BSA Camping Program and Guidelines**

**Foodservice Guidelines**

The concept of nutrition and the need for nutritious food is evident in the BSA handbook which states that food is more than relieving hunger; it has more to do with fueling the scouts' bodies and preparing them for the activities they do at camp. Providing the correct dietary intake for the scouts allows the scouts to be "physically strong and mentally awake" (Boy Scouts of America, 1998). A meal at camp helps to energize scouts when they are feeling weak, and a meal helps make sure that the scouts feel better when the skies turn cloudy (Boy Scouts of America, 1998).

The authors of the *Camp Program and Property Management* book (Boy Scouts of America, 2002) discuss how a properly prepared meal in camp helps teach the scouts about the rewards of healthy eating and how healthy eating allows scouts to partake in camp activities. The nutritional fundamentals discussed in the book are designed to help the scouts accomplish goals while at camp and encourage them to continue a proper diet at home (Boy Scouts of America, 2002).

The *Camp Program and Property Management* book (Boy Scouts of America, 2002) also states that the average camper should consume from 3,600 to 4,000 calories a day. In the preliminary stages of this research, three dietitians and one nutritionist were asked about this daily caloric intake figure. Most did not understand why it was so high (Johnson, L. personal communication, March 15, 2001; McCool, A., personal communication, April 4, 2003; Downer, N., personal communication, March 18, 2004;
and Lednicky, S., personal communication, September 5, 2003). When Mr. Bates was
asked about the reason for the caloric intake requirement being 3,600 to 4,000 calories,
he could give no specifics but said that the book was undergoing revisions (Bates, D.,
personal communication, February 22, 2002).

The 2002 edition of the *Camp Program and Property Management* book (Boy
Scouts of America, 2002) contained many new items not included in the 1996 edition
(Boy Scouts of America, 1996). The section talking about the nutritional analysis of the
menus was expanded and provided far more information than the previous edition,
published in 1996. Included in the new section were the Food Guide Pyramid and
information regarding the basic nutritional needs of campers (Boy Scouts of America,
2002; Boy Scouts of America, 1996). One item that did not change was the suggested
caloric intake of 3,600 to 4,000 calories per camper per day (Boy Scouts of America,
2002).

*Benefits of Camp*

In 2001, the BSA national council asked the research firm of Harris Interactive to
study the benefits of camping for scouts within the BSA program. The research
determined that summer camp offered an environment that enhanced the scouts’ healthy
youth development (Boy Scouts of America, 2001). At camp, the boys were able to
increase their social adeptness through group activities such as cleaning up after meals
and preparing meals during camp. The scouts said that they gained positive self worth
and usefulness through meal service activities (Boy Scouts of America, 2001). These
ideals, learned by the boys, allowed them to enhance their development through the
scouting program and aided them in reaching their scouting goals. While these ideals,
learned from participating in various aspects of meal preparation and service at camp, are helpful in teaching adolescent boys at camp many things, foodservice was not the sole aspect of the Harris study.

The parents of the scouts stated that they felt that camp had a positive impact on their sons. In fact, one commonly mentioned statement about camp was that “You took my boy and he came home more like a young man” (Boy Scouts of America, 2001). Parents support the summer camp experience because of the development their sons undergo at camp. When that development is added to the fact that foodservice plays a key role in camp, the importance of nutritious meals at camp is underscored (Boy Scouts of America, 2002).

Comparable Programs

*Nutritional Knowledge of Foodservice Employees*

Another aspect of the camp foodservice operations that should be addressed is the background and knowledge of the people who work in foodservice. Francese and Marple (1994) surveyed culinarians’ attitudes toward nutrition and the culinary profession. Their findings showed the need to help educate persons employed in the field of foodservice. They found that 50% of the food dollar is spent outside the home, which means that the culinary professionals of today have a direct influence on the nutritional intake of the U.S. population. Among the primary sources of information that culinary professionals use to gain a better understanding of nutrition are trade publications, college courses, and colleagues and staff (Francese & Marple, 1994). Professional development through continuing education is viewed as a need of professionals (Francese and Marples, 1994).
The respondents to Francese & Marples' (1994) survey also stated that, if they had the chance to increase their nutritional knowledge, they would be able to make thoughtful changes to their menus. They also stated that the changes in nutritional standards and practices were most likely to start in institutional foodservice, and such change would lag behind in commercial foodservice. The respondents mentioned that the ability to get information about nutrition from their suppliers and vendors was becoming more important as they started to make nutritional changes. The research showed the increasing need for culinary professionals to be properly educated about nutrition (Francese & Marple, 1994).

School Foodservice Programs

Research about school foodservice was reviewed because the age groups and concerns of these foodservice administrators matched the age groups and the perceived concerns that camp foodservice administrators would have. This review discusses the professional knowledge of school foodservice employees and how they are qualified to develop menus for this age group.

Demicco, Palakurthi, Sammons, and Williams (1994) stated that the motivation and competency of the foodservice staff were the main drivers in their ability to produce nutritious meals that were agreeable to the students who consumed them. Kendrick and Gangadharan (2001) stated that the success of a school foodservice program is based on the skill level of the employees that are hired for the food program. Conklin, Sneed, and Martin (1995) discussed the importance of the educational background of foodservice administrators. They also found that educated managers were important in making the
changes needed to ensure that foodservice programs meet the nutritional needs of the participants (Conklin, et al., 1995).

The success of a foodservice program at any institution can be judged on the basis of whether or not the food meets the satisfaction of the diners and whether the production and service of that food is cost effective. Swanson and Barnett (1998) addressed these issues when they stated that food quality was the most important factor in school foodservice programs. In addition, they stated that people who worked in these programs were best suited to determine what the consumers of this foodservice will or will not eat. Purchasing foods that meet the preference needs and dietary needs of adolescent groups are key determining factors in the ability of these school foodservice programs to be successful (Swanson & Barnett, 1998). Murphy, Sawyer, Hoerr, Youatt, and Andrews (1995) stated that even in foodservice programs operated on college campuses, the students' preferences are influential in the menu development and purchasing of food items. The article also noted that even if nutritious food is purchased, the production of the food must follow nutritional preparation standards (Murphy et al., 1995). Thus it is important that nutritional standards are communicated from the time of purchasing to the time of service.

Adolescents' Energy Needs, Food Preference, Activity Level, Nutrient Needs, and Food Guide Pyramid

Energy Intake

According to the BSA guidelines, while at camp, scouts aged 11 to 18 years should consume from 3,600 to 4,000 calories per day (Boy Scouts of America, 2002).
The scouts' caloric intake is set at this level because of the perceived level of activity the scouts will be engaging in while at camp. The *Camp Program and Property Management* book does not provide an explanation for this caloric intake or relate it to the activities in which the scouts will participate while at camp (Boy Scouts of America, 2002). In the informal interviews of dietitians and nutritionists, no one agreed with the caloric intake standards that the BSA stated; in fact, all said that the BSA standards were higher than they would suggest (Johnson, L., personal communication, March 15, 2001; McCool, A., personal communication, April 4, 2003; Downer, N., personal communication, March 18, 2004; and Lednicky, S., personal communication, September 5, 2003).

According to Williams (1999), the average, active teenage boy should have about 2,800 calories per day. In *Food and You: A Guide to Healthy Eating Habits*, Bijlefeld & Zoumbaris (2001) stated that the intake for boys age 11 to 14 years should be 2,500 calories and that boys age 15 to 18 should have an average intake of 3,000 calories per day. The average of these caloric intake recommendations is 2,750 calories per day, a level which is 850 calories below the minimum that the BSA *Camp Program and Property Management* book advocates (Boy Scouts of America, 2002). Sizer and Whitney (2000) stated that the average teenage boy's consumption should be about 2,800 calories per day, or 800 calories less than the minimum BSA recommendations but in general agreement with the caloric intake recommendations of both Williams (1999) and Bijlefeld & Zoumbaris (2001).

These variances in caloric intake recommendations raise serious questions about how the BSA obtained its recommended daily caloric intake numbers. Mr. Bates, the
National BSA Director of Camping and Conservation, stated that these numbers were developed through discussions with dietitians who looked at the activity level of the boys while at camp. Mr. Bates did not reference any particular study or reasoning for this level of calorie intake (Bates, D., personal communication, February 22, 2002).

Activity Level and Energy Usage

The energy intake research discussion reviewed the calories needed for the scouts at camp; this research did not account for the amount of energy the boys were expected to use during a typical day of camp. According to the BSA Camp Program and Property Management book, specific amounts of energy usage can be established for certain activities (Boy Scouts of America, 2002; Boy Scouts of America, 1996). Wiseman (2002) discussed how energy expenditure is not an exact science. He also stated that only the average amount of energy usage for a person can be calculated because energy usage is based upon a person’s weight. An example of this concept would be that a heavier person will use more energy doing the same exercise than will a person weighing less. Wiseman did state that people doing heavy work required about 3,000 to 3,500 calories per day (Wiseman, 2002). These caloric intake numbers are still approximately 100 to 600 calories below what the minimum BSA recommendations for youths attending BSA camps. Further, the BSA does not indicate the average amount of activity of boys at camp to justify their recommendations (Boy Scouts of America, 2002).

Nutrition researchers frequently cite caloric requirements in terms of the expenditure of calories per pound per hour. The BSA nutritional standards, however, describes energy expenditures in terms of per pound per minute. Although the BSA method of calculation was different, the other energy expenditure numbers were adjusted
to facilitate comparison. To make the caloric recommendations of other authors comparable to the recommendations published by the BSA in their *Camp Program and Property Management* book (Boy Scouts of America, 2002) the recommendations were converted to caloric expenditures per pound per minute. The estimate of caloric energy used during certain exercises, as estimated by the BSA and several nutritionists, is shown in Table 1. The estimates indicated in Table 1 are based on the lowest body weight (100 pounds) for the energy expenditure in the charts and tables in each of the selected texts. The lowest body weight was selected for making these estimates in order to provide the most uniform measure of caloric expenditures and because the BSA table (2002) did not give a reference weight for individual caloric energy expenditure per activity.

Table 1 provides a basic idea of how the BSA numbers compare with published nutritional research about caloric intake and expenditure. As noted in Table 1, the energy expenditure values per activity indicated by the nutrition researchers tended to be similar. In contrast, 37.5% of the energy expenditure calculations of the BSA, including the figures for sitting, swimming, and rowing showed higher calorie expenditure per pound per minute. Of these three, rowing would be the least likely activity in which a majority of the boys would engage, and swimming is the next least likely activity as the scouts only have a limited time per day that they can go to the waterfront. Sitting, however, would be the one activity in which the scouts would be most likely to engage as they all attend classes which requires a large amount of sitting in most cases. The low time of engagement in rowing and swimming means that the overall amount of energy expended doing these activities would be low. Since rowing and swimming require the first and third highest amount of energy expenditure per pound per minute, it would be useful to
review the data used in calculating the total calories needed to make sure that the amount of time the scouts spent engaged in these exercises was not overstated. If they were found to be overstated, then the BSA would also need to review the calculations on expended energy and then compare those calculations to the energy that they felt the scouts needed to gain from meals at camp.

The energy expenditure of the other five activities listed in Table 1 were compared to the BSA nutritional standards and the nutritional experts standards. Of these five activities, sleeping, walking slowly, and running constitute a large portion of the daily activity of the boys attending BSA camp. The BSA’s lower estimates of energy expenditures than the estimates of the nutrition researchers could be proof that the BSA nutrition standards and guidelines do not actually reflect the scouts’ total energy expenditure at camp. However, without reviewing and analyzing the BSA research used to establish energy needs and expenditures, it is not possible to conclusively understand this area of research.

This variance between the BSA standards and Sizer & Whitney (2000), Williams (1999), and Bijlefeld & Zoumbaris (2001) recommendation may be part of the reason that the BSA numbers for energy needs are so high. The increased estimates of the energy needed output by scouts for swimming and sitting, according to the BSA numbers, could be reason that they feel the scouts need an increase of calories per day as recommended by the BSA standards.

**Food Preferences and Activity Level**

Food preferences and activity levels of adolescents were also studied. According to Reinhardt and Brevard (2002), the diets of children are, in general, lacking nutrients.
Table 1

**Exercise Energy (calories) Expenditures per Minute for a 100 lb. person**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleeping</td>
<td>.40</td>
<td>n/a</td>
<td>.60</td>
<td>n/a</td>
</tr>
<tr>
<td>Sitting</td>
<td>.90</td>
<td>.66^b</td>
<td>.72</td>
<td>n/a</td>
</tr>
<tr>
<td>Standing</td>
<td>1.20</td>
<td>n/a</td>
<td>1.62</td>
<td>n/a</td>
</tr>
<tr>
<td>Dishwashing</td>
<td>1.30</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Walking Slowly</td>
<td>1.50</td>
<td>2.10</td>
<td>2.36^c</td>
<td>n/a</td>
</tr>
<tr>
<td>Swimming</td>
<td>4.80</td>
<td>3.20^d</td>
<td>2.95^e</td>
<td>3.84</td>
</tr>
<tr>
<td>Running</td>
<td>5.00</td>
<td>5.77^f</td>
<td>5.92^g</td>
<td>3.84^h</td>
</tr>
<tr>
<td>Rowing</td>
<td>8.50</td>
<td>5.82</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Recommend Caloric Intake</td>
<td>3,600 to</td>
<td>2,800</td>
<td>2,800</td>
<td>2,750</td>
</tr>
</tbody>
</table>

Note: BSA figures did not give a weight for the individual used. *Energy usage was adjusted from hours to minutes for these figures. ^Energy usage for studying was used as a comparison. ^An average number calculated from the eleven calculations presented in Williams (1999, p. 426-431) text. ^Three calculations given for swimming in Sizer & Whitney’s text (2000, p. 330-331) were averaged for this number. ^The five average energy usages for the front crawl from Williams text (1999, p.426-431) were averaged for this number. ^The six energy usages given in the Sizer and Whitney (2000, p.330-331) text were averaged for this number. ^Calculated by averaging the nine estimates for running given in the Williams (1999, p. 426-431) text. ^Averages based on information given in the book through charts (Bijlefeld & Zoumbaris, 2001).
Additionally, the activity level of this group has decreased, which often leads to a
decrease in adult activity when these inactive adolescents grow older. The authors
discuss how several governmental groups have worked together to make an “activity
pyramid” similar in scope to the Food Guide Pyramid to help educate people. These
governmental groups will provide information to the public to assist in educating the
public about nutrition and physical fitness, which they, in turn, hope will assist the public
in reducing the obesity problems facing US adolescents and adults (Reinhardt & Brevard,
2002).

In the BSA Camp Program and Property Management book (Boy Scouts of
America, 2002) the need for the scouts to be engaged in physical activity throughout their
time at camp is discussed. Specific activities and the requirement of the camp to provide
facilities for these sports are discussed in the Camp Program and Property Management
book. The book also communicates the purpose of these activities and how the scouts
should learn about physical fitness and the need to make fitness a daily routine (Boy
Scouts of America, 2002). Thus, the BSA summer camp program is not only concerned
with feeding the boys nutritious meals, but it is also concerned with educating the scouts
about physical fitness and how fitness leads to a healthy lifestyle.

The importance of slowing the obesity trend can not be overstated because
adolescents who eat unhealthy today are on track to an unhealthy adult life. Lytle
confirmed this correlation between childhood and adult eating habits (Lytle, 2002).

Important Nutrients for Adolescents

Adolescence (ages 9 -13) is an important growth period for teenagers. During this
time, teenagers start their developmental growth period and other transformations as they
physically develop into adults. Adequate nutrition for ensuring proper growth at this stage in their lives is critical to long term health. Not only are nutrition and the other health needs of adolescents important at this stage in their lives, but adolescents are also struggling to gain independence. With increased independence comes the expectation that adolescents will make more of their own decisions (Patchell, 2000). Adolescents however, remain dependent on others at this stage to provide the nutrients that they need to grow and develop in everyday life (McLaughlin, 2002). Adolescent growth rates are important as 20% of adult weight and 30% of adult height are gained in these formative years (McLaughlin, 2002). Key nutrients needed at this stage in an adolescent male’s life are energy (calories), protein, calcium, iron, zinc, and other minerals (Rees & Pipes, 1997; Tamborlane, Weiswasser, Fung, Held, & Liskov, 1997).

Protein is a well-studied nutrient needed in adults, but little is known about the protein needs of adolescents. Currently, it is recommended that adolescents derive 15% to 20% of their total energy (calories) from protein (Rees & Pipes, 1997). Calcium has long been noted as an important nutrient required by this group. In fact, while 1,200 mgs. of calcium per day is the current recommended intake, some believe that this number should be increased (Rees & Pipes, 1997). Iron is another nutrient required by growing adolescents. To ensure a balanced diet with enough iron, the average adolescent boy should include 12 mgs. of iron in his daily diet (Tamborlane et al., 1997). Zinc is a key nutrient in the development of healthy adolescents. Growth, including sexual maturation, requires 7.75 mgs. of zinc in the daily diet to be able to use nutrients efficiently at this stage in life (Rees & Pipes, 1997; National Academic Press, 2003).
Food Guide Pyramid and Adolescent Male Needs

While both the amount and types of nutrients are important for adolescent growth, the amount of certain foods from the various food groups is also essential for a healthy diet. The basic food groups presented in the Food Guide Pyramid are meat and poultry; dairy; bread and cereal; vegetables; fruits; and sweets, fats, and oils; this pyramid is listed in the Camp Program and Property Management book (Boy Scouts of America, 2002) as part of the standards for nutritional meals. The pyramid presents the sixth group more to identify items that people should eat sparingly instead of a group from which an individual must eat something everyday (Boy Scouts of America, 2002).

The recommended amount of meat and poultry is two servings of 2-3 ounces. Foods in this category include all meats, poultry, fish, nuts, eggs, and beans. In the dairy group, recommended daily consumption is four 8-ounce servings of dairy products. Not all dairy products contain the same amount of calcium; careful reading of labels may be necessary to ensure that the proper amount is consumed daily (Boy Scouts of America, 2002). Six to eleven servings per day are recommended from the bread and cereal group. These servings include, but are not limited to, one slice of bread, ½ to ¾ cup of pasta, grits, cornmeal, or noodles or an ounce of cold cereal (Boy Scouts of America, 2002). In the vegetable group, consumption of three to five servings of a ½ cup of vegetables or 1 cup of leafy greens will satisfy the per day requirement. On average, a person should eat about two to four servings of fruits per day. These servings could include unpeeled fruits and those with seeds. Serving sizes vary from a piece of fruit to ¼ cup of dried fruit or ½ cup of canned fruit (Boy Scouts of America, 2002). The final group listed in the pyramid - the fats, oils, and sweets group - is not a recommended
group. Since this group is not required, no serving sizes are suggested (Boy Scouts of America, 2002).

Conclusion

As Spain (1999) wrote, ensuring that adolescents at camp have a well-balanced meal and the necessary energy to do the projects and tasks that they have during camp will help them to enjoy the experience. Camp foodservice research illustrates what camps have done to feed adolescents who attend camp. Information about what is reviewed during accreditation visits by the visitation volunteers is incorporated into this research.

The BSA requirements and program research demonstrate how important this discussion of nutrition is to this organization. By setting specific food intake requirements, the BSA national leadership is helping to ensure that the scouts get the proper intake of the right foods.

The research on comparable foodservice programs is useful in discussing what foodservice professionals see as important areas for evaluation and where they see the need for education within the profession. Evaluation of the K-12 foodservice programs and learning more about them assists in understanding the needs and wants of adolescent foodservice consumers.

Energy needs, food preferences, activity levels, nutrient needs, and Food Guide Pyramid research help to highlight an understanding of the nutritional needs of adolescent males, ages 11 to 18. This information will be beneficial to the discussion of the BSA
nutrition policies and how closely these are followed through the menus developed for BSA camps. All this research will culminate in a better understanding of BSA foodservice.
CHAPTER THREE

METHODOLOGY

Introduction

For this research, a Boy Scouts of America (BSA) Council based in southeast Texas was chosen as the test site because the council operates both contracted and self-managed foodservice operations. This particular Council operates two camps in the state of Texas. One of the camps utilizes two separate campsites. In this section, background information on the camps will be provided; the organizational structure of the chosen Council's foodservice staff will be addressed; an analysis of the development of the study will be presented; and the administration of the mail survey, menu distribution, and the follow-up phone survey used as a part of the study will be outlined.

Description of the Camps and the Corresponding Foodservice Directors

Camp One

Camp One is located approximately 30 miles outside a major metropolitan area in Texas. At this camp, both winter and summer camp operations take place. The same dining hall/kitchen facilities are used for both operations. During the summer, the camp has, on average, 300 to 350 campers and staff per week. When used for winter camp, the
dining hall/ kitchen facility feeds about 700 to 750 people per meal. Both the paid (summer camp) and the volunteer (winter camp) Foodservice Directors (FSDs) work directly for the Council.

*Summer Camp Foodservice Director*

The summer operation is run by a foodservice director (FSD) who the Council employs to manage the foodservice operation. This person works full-time in the foodservice profession. Generally, the FSD and one or two assistants are the only paid employees who work in foodservice year round. The Camp Director (CD) hires all of the support staff for the FSD at this camp; thus, the FSD does not have control over who is hired. The support staff hired to assist the FSD is usually composed of scouts who are typically 16 to 21 years old. Some of these scouts have had limited work experience at local foodservice outlets, but most have no prior foodservice experience.

*Winter Camp Foodservice Director*

This Council also runs a camp operation for one week each winter. The volunteer FSD for the winter camp operation was also included in this study. The current winter camp FSD is not a full-time foodservice professional. However, this FSD has worked with the Council for almost thirty years, cooking for weekend events several times a year. The FSD is assisted by volunteer “employees” who are both adults and scouts, and are usually individuals who work in fields other than foodservice. These two FSDs, as well as the FSD for Camp Two, are all directly responsible for ordering the food at their designated camps.
Camp Two

Camp Two is located in the Texas Hill Country. This camp, utilizes two separate campsites, is thirty minutes from the closest town, and the kitchen is five miles from the nearest paved, rural road. This facility has a centralized kitchen used to service the two campsites on the property. In this central facility, the meals for all of the staff and the majority of the campers are prepared. The meals are then delivered to the dining facilities located at each of the two campsites via a catering truck. The remainder of the campers’ meals are distributed via the camp commissary. The camp commissary distributes breakfast and lunch to some of the campers at these campsites. Most of the food distributed at the commissary is ready-to-eat food and requires either no cooking or very little preparation. These meals are vital for the campers engaging in activities that will take them away from their campsite each day.

At Camp Two, the foodservice is administered by a contract foodservice company that also administers the foodservice for a nearby university during the academic year. All aspects of the foodservice, from the purchasing of the food, to the management of the operation and the daily clean-up, are operated by the contract company. The foodservice contract itemizes the specifics of the arrangements between the foodservice company and the Council (DCS, personal communication, May 10, 2003). The Council employs a Reservation Foodservice Liaison (RFSL), who in 2003, was both a trained foodservice professional and a Chef Instructor at a hospitality college. The RFSL ensures that the foodservice company follows BSA national policy. The person in this position reports to the CDs of Camp Two. The FSD at Camp Two is an employee of the contract foodservice company and has been in the foodservice industry for 18 years.
Organizational Structure of the Council Foodservice

The Case Study Participants

The importance of each individual to the study will be discussed, and the order in which the respondents are discussed is directly related to their importance to the Council's foodservice operation. The FSDs are the “front line” managers directly responsible for the foodservice at their camp. The next people interviewed were the Camp Directors (CDs). They are above the FSDs in the chain of command and are the on-site supervisors of both the council FSD and the contract FSD. The CD reports to the Camping Services Director (CSD) and Assistant Director of Camping Services (ADCS), who are responsible for over-all camp operations. The administrators from the contract foodservice company are the middle managers between the FSD, who works for the contracted company, and the ADCS, who is in charge of the contract foodservice company at Camp Two. The RFSL is a position that is responsible to both the ADCS at Camp Two and the two CDs at camp two. The Reservation Food Service Director (RFSL) in turn is responsible for insuring that the contracted FSD meets the foodservice needs of the camps.

Foodservice Director

In the data collection process, the researcher worked individually with the FSDs at the two properties to make sure that the data collected represented the Council’s camp operations. These individuals are in charge of the day-to-day operations of the camps’ foodservice. These directors order the food, manage the staff, and are responsible for any necessary paperwork.
Camp Directors

The Camp Directors (CDs) are responsible for the day-to-day operations of their respective camps. They are in charge of the staff, programmatic concerns of the camp, the management of the FSD and their staffs, and the well-being of all the people at the camp. The two CDs responsible for two summer camp’s operations are full-time Council employees; during summer camp, they delegate their responsibilities for foodservice to the FSDs at their camp. The third CD, who is responsible for the winter camp operation, is a volunteer for the Scouts; he has voluntarily managed the winter camp operations numerous times, and he was employed to run one of the two campsites at Camp Two during the summer of 2003.

As part of their required training, CDs must attend BSA National Camp School. This week-long training exposes the CDs to all aspects of camp operations, including the information contained in the *Camp Program and Property Management* book (Boy Scouts of America, 2002). In addition, they have attended a one- to three-hour long session on camp foodservice during their required training at camp school (Bates, D., personal communication, February 22, 2002). A recent camp school, held in March, 2004, included a small food show presented by a foodservice distributor to help the CDs formulate ideas for their camp foodservice plans (ADCS, personal communication, March 22, 2002).

Camping Services Directors

Both the Camping Services Director (CSD), as well as the Assistant Director of Camping Services (ADCS), are included in this survey. These two directors are responsible for all operations of the two camps, including the maintenance required and
all the budgetary needs of the camps. In addition, they oversee the staffing of the camps, and are responsible for oversight of the camps’ programs. The Council CSD, a full-time Council employee, is responsible for Camp One. The ADCS, also a full-time Council employee, is responsible for Camp Two.

Contract Foodservice Company Administrators

The administrators from the contract foodservice company are responsible for many aspects of their particular operation. The site administrator (SA1) of the contract foodservice operation is responsible for the foodservice operation of a local university during the academic year. This university campus has a population of approximately 30,000 students and has numerous foodservice outlets ranging from cafeteria-style service to quick-serve. The SA1 supervises all the managers of the individual outlets as well as the other administrative staff that maintains the campus foodservice operation. This same person supervises FSD2 at Camp Two where the contractor operates the foodservice. The regional administrator (RA1) from the contract foodservice company is responsible for making sure that the individual contract sites, including the BSA Council, are satisfied with the contractor’s services.

Figure 1 illustrates each individual’s role in the overall foodservice program. While the majority of the people who were surveyed/interviewed for this study did not have direct daily interaction with the foodservice operation, they should, in theory, have a working understanding of foodservice to make sure that the foodservice operation was being operated according to BSA standards. Since all of these individuals should know about the camps’ foodservice operations, they are vital to any survey effort to understand this Council’s camp foodservice operations.
The Survey

This case study focused on ten people. These people included the three CDs, the three FSDs, and the four CAs. Although these ten people were mailed surveys, only nine surveys were returned. The regional administrator for the contract foodservice company did not return the survey. Each person was sent a mail survey and asked to respond to the survey in a timely manner. In addition to the survey, there was a cover letter and a copy of the menu specific to the camp at which the respondent worked. The camp specific menus were obtained from the CSD for the Council reviewed in this case study. The respondent was asked to answer the questions on the written survey and to complete the portions of the menu that corresponded to the camp at which the respondent worked.
Construct validity for the survey was obtained by having several people in the field of foodservice review the survey for content. This review was done by a Chef/Instructor, a council camping services director, a registered dietitian, and a practicing chef. They were asked their opinions and thoughts about the way the questions were asked, if the questions seemed to address the issues being raised, and if they felt that the terms were appropriate for the survey audience. Changes to the draft were made to reflect this feedback.

Research Used to Formulate Survey Questions

During the literature review stages of this project, numerous articles were located discussing various forms of survey research in the foodservice field. While some surveys were longer than needed for this study, they did provide useful background information for the construction of various survey questions. Some of the studies consulted in the development of this survey were Sneed and Gregoire (1995) for their discussions of recipe and menu development; DeMicco, Palakurthi, Sammons, and Williams (1994) for the discussion of the training needs of foodservice employees; Swanson and Barnett (1998) for the discussion of the importance of food quality and preparation; Conklin, Sneed, & Martin (1995) for the discussion of education as a key for future foodservice professionals; and Kendrick and Gangadharan (2001), whose study of the training needs of professional foodservice personnel was useful in the development of the training related questions.

The Kendrick and Gangadharan (2001) survey looked at foodservice directors' needed skill set from the perspective of the directors and their managers. Murphy, Sawyer, Hoerr, Youatt, & Andrews (1995) discussed the importance of an interest in
nutritional education and the means of receiving nutrition education. This research was incorporated into the survey to get some background on where the respondents got their foodservice information. The survey developed for this research is presented in Appendix A.

Sections of the Survey

The survey was divided into seven sections. The first section dealt with the BSA National Nutritional standards as discussed in the Camp Program and Property Management book (Boy Scouts of America, 2002 & Boy Scouts of America, 1996). In this section, questions were asked about the respondent’s understanding of the guidelines set forth by the BSA. The first question is about the respondent’s awareness of the BSA’s National Foodservice Standards; if the respondent’s response was “no,” he was directed not to answer the rest of the questions in that section. These questions were used in the evaluation of sub-hypotheses one, two, and three.

The next section, Menu Planning and Development, consisted of five questions. These questions were used to determine the person(s) responsible for development of the menus. In turn, section two served to address the respondent’s work on the menus and how that work related to sub-hypotheses six and seven.

The third section dealt with Portion Control and Menu Design. From this information, the researcher hoped to learn about the importance the individual respondents placed on portioning and the menu process. In addition, he wanted to determine who the administrators felt were responsible for ensuring that the portion sizes developed for the menus were actually served to the scouts at the various camps. Questions about portion sizes, serving sizes, and preparing meals were used to determine...
if the managers at the camps did adequate jobs of communicating nutritional information to their staffs. The eight questions listed in section three can be applied to sub-hypotheses one, five, and six.

Budget was the focus of the next section. Budget is always a concern with any foodservice operation and an even bigger concern for non-profit organizations such as the BSA due to limited funding. These questions addressed the relationship between labor and food cost. Five questions in section four asked about the camp foodservice’s budget and its perceived impact on the menus. These questions served as a means to help evaluate all the hypotheses except sub-hypotheses one and six.

Section five focused on the nutritional education background of the survey respondents and the managers’ method of administrating nutrition education to their employees. Questions in this section were asked to determine whether the people administering the foodservice at BSA camps made an effort to see that the employees who were on the production/service line knew and followed the nutritional standards.

The final section pertained to the foodservice background of the respondent. General demographic information about each respondent was collected. The last question in the section dealt with the participant’s understanding of what he felt was the caloric intake need of scouts at camp. While relevant to the research, this question should have been placed in the first section of the survey with questions about the BSA guidelines for nutritional make-up of menus. Since this error was found after the survey was mailed, no changes could be made to the survey sent to the respondents. After the background questions, the researcher asked each respondent to provide contact information so that follow-up could be done at a time most acceptable to the respondent.
The Approval of the Survey

Once the survey (see Appendix A) and the follow up questions (see Appendix B) were formulated, they were submitted to the University of Nevada, Las Vegas – Office for the Protection of Research Subjects (OPRS) and were approved for use in this study (see Appendix C). The packet sent to the proposed respondents included copies of the cover letter (see Appendix D) and consent form (see Appendix E) approved by the OPRS office. These materials were provided to the participants to ensure that they understood that the information they provided in the survey would not use their name or company affiliation. In addition, the researcher sent a menu (see appendices F-H) to each respondent asking him to fill in the portion sizes served for each menu item. This menu was obtained from the CSD from the Council being studied.

Survey Mailing and Response Time

To help ensure quick delivery to each individual, the letters were sent via confirmed priority mail. The surveys for all the respondents were the same; however, the menus varied. Each respondent associated with one of the camps was sent the menu developed by the camp's FSD. In addition, the researcher included a return addressed, postage paid envelope in each mailing. After the mailing, the researcher confirmed the receipt of each individual package by the respondent. All participants were requested to finish the survey within a two week period so that the researcher would be able to do the follow-up questioning over the phone in a timely manner.

When a week had passed after the two-week deadline, emails were sent to the survey respondents who had not answered, reiterating the need for return of the survey. One FSD was employed on an oil rig during the non-camping season, and his response
was not received until he returned from the rig three months after the original surveys were sent. The regional administrator from the contract foodservice company did not respond. The overall response rate for the survey was 90%.

The Menu Analysis and Software Used

The nutritional composition of the commissary and cafeteria-style meals were analyzed as stated on the menus; therefore, any variations from the menus that the foodservice staff made on-site were not considered. The menus included commissary issued foods that were issued to a majority of the campers at the camps and thus were a major part of each camp’s foodservice program. Some of the campers who attended camp had the opportunity to eat backpacking meals while on hiking trails. The backpacking meals are less frequently used and are not the basis of the scout’s food intake at camp; thus, these meals were not evaluated in this study.

The menus that were sent to the respondents were the ones used in the analysis of the caloric content of the menu items. The menus are listed in Appendices F, G, and H. The menu in Appendix F is from FSD1, the menu in Appendix G is from FSD2, and the menu in Appendix H is from FSD3. Nutritionists Pro™ software was used for the analysis of the menus. Each menu was divided into meal times and days of the week, and each meal was analyzed individually. The same food specifications were used for similar menu items on the various menus.

After each meal was entered into the computer, the analysis of that meal was saved in an Excel™ file. The file names were labeled with a designator for the camp administrator who filled in the food portions, the type of meal, and the day of the meal.
The code for the first responding Food Service Director's Sunday night dinner would be `fsdlinsun`. Table Two lists the codes for each respondent that submitted a menu that was analyzed.

Table 2

*Survey Respondents' Codes*

<table>
<thead>
<tr>
<th>Menu Code</th>
<th>Camp Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSD1</td>
<td>Foodservice Director One</td>
</tr>
<tr>
<td>FSD2</td>
<td>Foodservice Director Two</td>
</tr>
<tr>
<td>FSD3</td>
<td>Foodservice Director Three</td>
</tr>
<tr>
<td>CD1</td>
<td>Camp Director One</td>
</tr>
<tr>
<td>CD2</td>
<td>Camp Director Two</td>
</tr>
<tr>
<td>CD3</td>
<td>Camp Director Three</td>
</tr>
<tr>
<td>DCS</td>
<td>Director Camping Services</td>
</tr>
<tr>
<td>ADCS</td>
<td>Assistant Director Camping Services</td>
</tr>
<tr>
<td>SA1</td>
<td>Site Administrator</td>
</tr>
</tbody>
</table>

The winter camp menu posed an issue because winter camp is one day shorter than summer camp. Also, the days of the camp are not Sunday to Saturday like summer camp operations. The researcher, having been a part of the winter camp operation, decided to change the days of the week the meals were served to days that better corresponded with the summer camp operations. This change entailed taking the first day
of the winter camp week and making it the first dinner meal on Sunday night. By making these changes, menus were matched from Sunday through Wednesday night dinner. Thursday is by-passed because there is no comparable day in the winter camp schedule. The last full day of camp was changed to Friday with the last day's breakfast being Saturday. These changes to the days of the week were made to better organize the names of the files used in the data analysis.

The data was then entered into an Excel™ spreadsheet and the daily calorie counts were compared with the recommended daily intakes that the researcher presented in the literature review. In addition, the servings per food group were compared with the BSA recommended levels and the amount of servings found in each daily set of meals for each FSD. Differences noted will be discussed in the next chapter.

Coding of the Survey Responses

The returned surveys were coded in a similar method to the menus, as indicated in Table 2. For example, FSD1's survey was coded as FSD1. All of the subsequent survey responses used this same coding method. The follow-up questions were coded in the same way as the respondents' written answers. When the information was gathered from the surveys and put into the Excel™ spreadsheets for analysis, the same codes were used to distinguish the survey respondents within the Excel™ spreadsheets.

Follow-up Phone Interviews

After receiving the completed surveys, follow-up interviews were conducted. The questions for the follow-up interviews can be found in Appendix B. These questions
were subjected to the same protocol assessment as the surveys and cover letter. Of the first interviews, three of the nine were conducted in person due to the schedules of the interviewees and the interviewer. These interviews included two of the FSDs and one of the camp directors. The remaining six interviews were conducted via telephone. In general, the interviews were each approximately 15 minutes in length, and they were very helpful in gathering additional information pertinent to the written survey answers. In several of the interviews, some questions were omitted because the respondent lacked direct involvement in the portion of the operation being covered in these questions. These questions included the way in which the food was prepared or purchased. In addition, some questions were asked of various participants due to the responses that they gave in their written responses.

Analysis of Survey Data

Excel™ was used to consolidate the data. Various tables, graphs, and charts were used in the analysis of the information gathered, and the results are presented in chapter four.

Conclusion

This chapter presented the methodology through which this study was conducted. The structure of the two camps being evaluated was reviewed and discussed. The roles of the FSDs were defined within the camp structure, and then the overall structure of the Council's camp administration was discussed. This discussion of the camp structure included the responsibilities of the various CAs who were interviewed for this survey.
The survey was the second major part of the methodology section. First, the research that assisted in the formulation of the questions was discussed. Next, the survey coding was discussed. Sections of the survey were discussed with detailed explanations about how each set of questions related to the various sub-hypotheses. Fourth was the section about the survey's approval by the Office for the Protection of Human Subjects. The survey's mailing and response time was discussed in the fifth section of this chapter. The next section dealt with the coding of the surveys as they were received. The second to last section explained how in person and telephone interviews were conducted. The final section explained menu analysis and the software used in the analysis of the nutritional value of the menus.
CHAPTER FOUR

RESULTS

Introduction

Upon return of the surveys, the data were entered into Excel™ for analysis. After the data were compiled, they could be reviewed and used to evaluate the hypothesis and sub-hypotheses. In this chapter, the individual sub-hypotheses will be reviewed, and the results will be discussed for each sub-hypothesis. Additionally, how these sub-hypotheses affect the hypothesis will be noted. The interview data will be introduced as needed in the discussions of the sub-hypotheses and the hypothesis.

Survey Response Rate

The survey was mailed to ten camp affiliated personnel, and nine responses were received including responses from managers at various levels of the summer camp foodservice operations. While the hope of any researcher is to get a 100% response from the population contacted for a survey, it is understood that this response level rarely happens. In this case study, a 90% response rate was achieved; the regional manager for the contract foodservice company was the only one who did not return the survey. While it is unknown why this person did not respond, his lack of response will not be a critical
detriment to the results as his employees did respond with adequate information for the purpose of this case study.

General Background

Despite the limited number of participants for this case study, the individual respondents will still be grouped by function for analytical purposes. While this grouping may skew the averages, it will better represent any differences among the three groups of managers responsible for camp foodservice operations. Group 1 will include the three Foodservice Directors (FSDs); Group 2 will include the Camp Directors (CDs); the final group of managers, Group 3, includes the Camp Administrators (CAs). This group includes the Camping Services Director (CSD), Assistant Camping Services Director (ACSD), and Site Administrator (SA) from the contract foodservice company. While it will be important to look at some of the survey results from the perspective of the function of the respondent, occasionally the total group averages will be used as well.

Years Associated with Camp Foodservice and General Foodservice

In any work situation, the number of years that someone has worked in a particular field may make a difference in her/his level of knowledge. The survey found that the average number of years that individuals had been involved with camp foodservice was 21.27 years. The average number of years in general foodservice was 20.67 years. The unusual circumstance that the specific years of camp foodservice had a higher average than general foodservice can be explained two ways. First of all, one of the FSDs mentioned during the interview process that he grew up working at camps with his mother and then went into foodservice. Also, one of the FSDs had worked in camp
foodservice since the early 1970s, but his main career field was not in general foodservice.

These questions were asked because the work environments of camp foodservice as compared to regular foodservice are very different. In the case of the Council studied, one or two meals at each of the camps were issued commissary style. Commissary-issued food is issued to the scouts in either bulk or some pre-packaged form and then prepared at the campsites. Commissary issued food differs from general foodservice where food is completely prepared by the staff in the restaurant or establishment and then served.

The differences in the length of time each of the respondent groups has been associated with camp foodservice can be noted. (see Figure 2 and Table 3) The results indicated that the FSDs and the CAs tended to have the longest involvement with both camp foodservice and foodservice in general.

As depicted in Figure 2, one can see that the FSDs tended to have the highest average number of years of involvement with both camp and general foodservice. However, when the standard deviation is reviewed for camp foodservice tenure, it shows that, while the FSDs may have the highest average number of years in camp foodservice, the variance in this group's responses is the highest among the three groups of people surveyed. The statistics for this question are noted in Table 3.
Figure 2. Averages for years in camp and general foodservice.
Table 3

*Years in Camp Foodservice*

<table>
<thead>
<tr>
<th></th>
<th>FSDs</th>
<th>CDs</th>
<th>CAs</th>
<th>Total Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>25.00</td>
<td>16.33</td>
<td>23.67</td>
<td>21.27</td>
</tr>
<tr>
<td>Median</td>
<td>13.27</td>
<td>5.61</td>
<td>33.00</td>
<td>17.29</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>23.00</td>
<td>9.71</td>
<td>19.73</td>
<td>17.48</td>
</tr>
<tr>
<td>Range</td>
<td>46.00</td>
<td>19.00</td>
<td>36.00</td>
<td>33.67</td>
</tr>
<tr>
<td>Coefficient of Variance</td>
<td>.92</td>
<td>.59</td>
<td>.83</td>
<td>.82</td>
</tr>
</tbody>
</table>

The large standard deviation and range for all three of the groups caused concern and reason to review the original data. In reviewing the survey responses from the individuals within the three groups, it was found that each group had two of the three people respond with a high number of years of involvement with camp foodservice while one of the respondents indicated a low number of years of camp foodservice involvement.

The responses to the survey question about the number of years the respondent was associated with foodservice in general shows a more stable result as noted in Table 4. These measures are, therefore, less variable than the responses regarding the number of years in camp foodservice.
Table 4

*Years in General Foodservice*

<table>
<thead>
<tr>
<th></th>
<th>FSDs</th>
<th>CDs</th>
<th>CAs</th>
<th>Total Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>30.33</td>
<td>9.00</td>
<td>22.67</td>
<td>20.67</td>
</tr>
<tr>
<td>Median</td>
<td>25.00</td>
<td>0.00</td>
<td>30.00</td>
<td>18.33</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>15.69</td>
<td>15.59</td>
<td>15.37</td>
<td>15.55</td>
</tr>
<tr>
<td>Range</td>
<td>30.00</td>
<td>27.00</td>
<td>28.00</td>
<td>28.33</td>
</tr>
<tr>
<td>Coefficient of Variance</td>
<td>.52</td>
<td>1.73</td>
<td>.68</td>
<td>.75</td>
</tr>
</tbody>
</table>

The respondents’ averages indicate that they have more years in camp foodservice than in general foodservice which raises another concern. An explanation may be that the respondents had first worked in camp foodservice and then started to work in general foodservice after their initial experience. Thus, they had more years of experience in camp foodservice than in general foodservice.

The majority of the respondents stated that they had not been formally trained in foodservice. This corresponds to the responses to the survey question in which the majority of the respondents indicated they either received on-the-job training (three respondents total) or were trained at camp school (two total). The other respondents had no training in foodservice at all (four total). When asked directly about having taken a nutrition class, 67% of the CDs and CAs had taken a class while only 33% of the FSDs had taken a nutrition class. This background information will play a key role in the acceptance or rejection of the sub-hypotheses.
Menu Analysis Results

The menus that were analyzed came from the two camps used as research sites. These menus were collected from the CSD, and distributed to each individual who was asked to respond to the survey. All the menus were representative of the meals served during the 2003 summer camp season. The respondents were asked to list the portions for each menu item according to what they planned to serve in the summer of 2003. The three FSDs returned their menus with the portions served documented (see Appendices F, G, and H). One of the CDs responded with a menu with documented portion sizes while the remaining CDs did not. One of the three CAs responded with portions marked on the menu. Since not all of the respondents in the other two sub-groups returned menus with documented portions, only the FSDs menus were used for analysis purposes. This portion information was then entered into Nutritionists Pro™ software, and the necessary calculations and comparisons were made.

Hypothesis Testing

As stated in Chapter One, there is one overall hypothesis with seven sub-hypotheses. In the following section, each individual sub-hypothesis will be examined and compared with the data collected to determine the rejection or acceptance of each sub-hypothesis. To better understand and interpret the data from the menu analysis, the daily averages for calories, portions, and nutrients were used. The Sunday and Saturday meals were not reviewed because on these days the camps' foodservice staffs did not provide three full meals for the campers.
Sub-Hypothesis One:

Sub - H1. The nutritional composition of the Boy Scout Camp menus developed by the foodservice management contract company will be in greater accord with the BSA national nutritional guidelines and with nutritional standards for adolescent nutritional intake than the menus developed by foodservice personnel hired directly by the BSA Council.

The menu analysis and the questions from sections one, three, and four of the survey were used to determine if this sub-hypothesis could be accepted. Overall two-thirds of the respondents in all three categories understood that the BSA had national standards for foodservice. Although six of the nine returned surveys stated that the respondents knew of the BSA standards, only the Camp Directors responded in majority that they had seen the national BSA standards since the 2002 revision. These results are depicted in Figure 3.
From the follow-up interviews, it was found that the CDs, during Camp School, spent one to three hours learning the BSA nutritional standards and how they affected individual operations. This one to three hour training is different from what Mr. Bates indicated during his interview, where he discussed a one hour training (Bates, D., personal communications, February 22, 2002; CD3, personal communications, July 14, 2004). Part of the difference may be attributed to more training now being done on camp foodservice nutrition than when Mr. Bates was interviewed about this class, but this study could not verify the reason for the difference in length of training sessions.
This training session for the CDs explains why the FSDs and CAs knew less about the 2002 revisions than did the CDs. However, one of the CDs stated that his training was not as comprehensive as he would have liked and he did not feel that adequate nutritional training was covered. He suggested that the class was being taught by someone that was just given the materials or by someone that worked on the supplier side of the foodservice business, who tended to try to sell the products to the CDs during the training session (CD3, personal communications, July 14, 2004).

Some of the questions in section three of the survey, Portion Control and Menu Design, were used to determine how closely the FSDs tried to follow the menu that they produced. Although the respondents had several choices regarding portion control, the majority of the responses indicated that the Chef was responsible for communicating portion sizes to their serving staff and that two-thirds of the FSDs preferred having the camp foodservice staff prepare and portion the foods served instead of purchasing pre-packaged, pre-portioned foods. This preference means that, because of these portioning policies, the majority of the FSDs placed responsibility for nutritional portions upon their personnel. This decision could lead to portioning error, which was not covered in this case study.

In addition to the survey, menu analysis was used to determine the FSDs’ compliance with the nutritional standards set forth by the BSA and U.S. government agencies. In reviewing the caloric counts of the three menus submitted by the FSDs, only FSD1 met the daily caloric requirements as stated by the BSA. In Table 5, some basic statistics for caloric content of the individual FSDs’ menus are shown.
Table 5

*Daily Caloric Averages for FSDs*

<table>
<thead>
<tr>
<th></th>
<th>FSD1</th>
<th>FSD2</th>
<th>FSD3</th>
<th>Daily Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3793.43</td>
<td>3230.55</td>
<td>3486.88</td>
<td>3503.62</td>
</tr>
<tr>
<td>Median</td>
<td>3687.51</td>
<td>3155.57</td>
<td>3527.23</td>
<td>3569.87</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>504.37</td>
<td>574.69</td>
<td>327.34</td>
<td>468.80</td>
</tr>
<tr>
<td>Range</td>
<td>1091.17</td>
<td>1521.49</td>
<td>897.08</td>
<td>852.40</td>
</tr>
<tr>
<td>Count</td>
<td>4.00*</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Coefficient of Variance</td>
<td>13.30%</td>
<td>17.79%</td>
<td>9.39%</td>
<td>13.38%</td>
</tr>
</tbody>
</table>

Note. *This count is lower by one because FSD1 served three meals one less day during the camp than the others.*

As indicated in Table 5, FSD1’s average calories per day was 3,793, within the 3,600 to 4,000 calorie per day recommendation of the BSA. FSD2’s and FSD3’s menus were below the lower recommended number by 369.55 and 113.13 calories respectively. From these results, it can be seen that the contract FSD, who was FSD2, was the least likely, on average, to have met the recommended BSA guidelines for caloric intake. It must also be noted that when reviewing the data, the contract FSD had the largest standard deviation and range. This variance seems to indicate that he had the least reliable menu.
Calories served are just one of three major factors reviewed in the menu analysis conducted for this study. The level of nutrients found in the menus that were used was also reviewed. Table 6 represents the major nutrients that were discussed in the literature review in regards to their importance in the development of young men. As can be seen in Table 6, an analysis was done to determine how well the individual FSDs included these key nutrients in the menus that they prepared. Table 7 shows the FSDs’ variances on an individual and a group basis.

When these five key nutrients were examined for what was recommended versus what was on camp menus, it was observed that in the case of energy (calories), iron, and zinc, the menus were over the recommended daily averages. In the case of protein, FSD2 met the lower requirement for percentage of calories from protein while the rest of the FSDs were within 5% to 6% of the correct amount of proteins served. In regard to calcium, it can be noted that the contract FSD was 8.2% away from meeting the daily recommended allowance for this nutrient while the remaining FSDs were 25% away from meeting this daily nutrient need. To get a better understanding of these numbers, the standard deviation was divided by the mean to determine the coefficient of variation (C.V.). By doing this, it was hoped that if any percentages were 15% or higher, it would illuminate areas of the analysis that needed to be reviewed. Table 7 shows the descriptive statistics for the average nutrients and the C.V. of each nutrient.
Table 6

FSDs Daily Average for Significant Nutrients Average Difference for Significant Nutrients

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Recommended</th>
<th>FSD1 Actual</th>
<th>FSD1 Difference&lt;sup&gt;a&lt;/sup&gt;</th>
<th>FSD2 Actual</th>
<th>FSD2 Difference</th>
<th>FSD3 Actual</th>
<th>FSD3 Difference&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Average Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>2,875&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3,034.74</td>
<td>+159.7412</td>
<td>3,230.55</td>
<td>+355.55</td>
<td>3,478.21</td>
<td>+603.2134</td>
<td>3247.83</td>
</tr>
<tr>
<td>Protein&lt;sup&gt;c&lt;/sup&gt;</td>
<td>122.19 gm&lt;sup&gt;d&lt;/sup&gt;</td>
<td>90.39 gm</td>
<td>-37.93 gm</td>
<td>118.14 gm</td>
<td>Within The Guidelines</td>
<td>97.81 gm</td>
<td>-52.17 gm</td>
<td>102.11 gm</td>
</tr>
<tr>
<td></td>
<td>14% to 20% of total calories</td>
<td>or 12%</td>
<td>or -5%</td>
<td>or 15%</td>
<td>or 11%</td>
<td>or 12.6%</td>
<td>or -6%</td>
<td>or -4.4%</td>
</tr>
<tr>
<td>Calcium&lt;sup&gt;e&lt;/sup&gt;</td>
<td>1,300 mg</td>
<td>963.38 mg - 336.62 mg</td>
<td>-25.89%</td>
<td>1,193.41 mg - 106.59 mg</td>
<td>- 8.20%</td>
<td>965.19 mg - 334.81 mg</td>
<td>-25.75%</td>
<td>1040.66 mg - 259.34 mg</td>
</tr>
<tr>
<td>Iron&lt;sup&gt;f&lt;/sup&gt;</td>
<td>6.8 mg</td>
<td>18.81 mg + 12.01 mg + 177%</td>
<td>19.03 mg + 7.03 mg + 279.85%</td>
<td>17.81 mg + 11.01 mg</td>
<td>162%</td>
<td>18.55 mg + 11.75 mg + 173%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc&lt;sup&gt;f&lt;/sup&gt;</td>
<td>7.75 mg</td>
<td>13.61 mg + 5.86 mg + 75.61%</td>
<td>13.55 mg + 5.80 mg + 74.84%</td>
<td>15.76 mg + 8.01 mg</td>
<td>103%</td>
<td>14.31 mg + 6.56 mg + 85%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. <sup>a</sup>Protein difference based on a 17% average  <sup>b</sup>2,875 calories is the average recommended from the research conducted in chapter two.  <sup>c</sup>Percentage of protein was calculated by multiplying the grams of protein by 4 and then dividing by the daily amount of calories and multiplying by 100 to get a daily percentage.  <sup>d</sup>Number of grams based on a 2,875 calorie daily recommended intake.  <sup>e</sup>Average based on age groups 9 to 13 and 14 to 18 (Trumbo, Schlicker, Yates, Poos, 2002, p. 1624).  <sup>f</sup>Average based on age groups 9 to 13 and 14 to 18 (National Academic Press, 2003, p. 231).
Table 7

Descriptive Statistics of Nutrients

<table>
<thead>
<tr>
<th></th>
<th>Energy</th>
<th>Protein</th>
<th>Calcium</th>
<th>Iron</th>
<th>Zinc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of the Three FSDs</td>
<td>3247.83</td>
<td>102.11</td>
<td>1047.33</td>
<td>18.55</td>
<td>14.30</td>
</tr>
<tr>
<td>Median</td>
<td>3230.55</td>
<td>97.81</td>
<td>983.38</td>
<td>18.81</td>
<td>13.60</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>222.24</td>
<td>14.37</td>
<td>126.84</td>
<td>0.65</td>
<td>1.26</td>
</tr>
<tr>
<td>Coefficient of Variance</td>
<td>7%</td>
<td>14%</td>
<td>12%</td>
<td>3.5%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Table 7 illustrates that the C.V. for protein and calcium is equivalent to 12% or more for these nutrients; thus, the C.V. is high compared to the overall mean for these nutrients. Energy and zinc have a smaller C.V. which indicates that the variation relative to the mean for all the FSDs for these nutrients is not as great. Iron had the lowest C.V.; thus, iron was the one nutrient that proved to fluctuate the least among the FSDs. This analysis shows that while a nutrient value average may be calculated for the group of FSDs, the C.V. varies greatly among the groups studied. While the contract FSD did come close in a few of the nutrient categories, his menu still did not indicate comprehensive coverage of the nutrient needs of campers.

The BSA recommends that camp foodservice personnel provide the proper amount of foods from the five basic food groups as defined in the Food Guide Pyramid. For this portion of the study, the researcher took an Excel™ spreadsheet and went through the individual meals as documented in Nutritionalists Pro™ and determined which items went into which groups within the Food Guide Pyramid. The totals for the
individual meals and days were calculated, and then the daily and weekly averages were analyzed. These calculations are summarized in Tables 8 to 11.

The results of the menu analysis determined that all three FSDs over-portioned the protein and the fats, oils, and sweets groups. Tables 8 through 11 give the Food Guide Pyramid Analysis for each FSD with Table 11 covering the average for all three FSDs.

Table 8

FSD1's Food Group Analysis

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Number of Daily Recommended Servings</th>
<th>Daily Average Servings on the Menu</th>
<th>Under/ (Over)</th>
<th>Percent Under/ (Over)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and Poultry</td>
<td>2.00</td>
<td>3.65</td>
<td>(1.65)</td>
<td>(82.5%)</td>
</tr>
<tr>
<td>Dairy</td>
<td>4.00</td>
<td>1.07</td>
<td>2.93</td>
<td>73.25%</td>
</tr>
<tr>
<td>Bread and Cereal(^a)</td>
<td>8.50</td>
<td>4.71</td>
<td>3.79</td>
<td>44.59%</td>
</tr>
<tr>
<td>Vegetable(^a)</td>
<td>4.00</td>
<td>2.21</td>
<td>1.79</td>
<td>44.75%</td>
</tr>
<tr>
<td>Fruits(^a)</td>
<td>3.00</td>
<td>.86</td>
<td>2.14</td>
<td>71.33%</td>
</tr>
<tr>
<td>Fats, Oils, Sweets</td>
<td>0.00</td>
<td>6.21</td>
<td>(6.21)</td>
<td>(621%)</td>
</tr>
</tbody>
</table>

Note. *Recommended servings are the average of the servings recommended in the Food Guide Pyramid.*
Table 9

**FSD2's Food Group Analysis**

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Number of Daily Recommended Servings</th>
<th>Daily Average Servings on the Menu</th>
<th>Under/Over Servings on the Menu</th>
<th>Under/Over Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and Poultry</td>
<td>2.00</td>
<td>4.21</td>
<td>(2.21)</td>
<td>(111%)</td>
</tr>
<tr>
<td>Dairy</td>
<td>4.00</td>
<td>1.21</td>
<td>2.79</td>
<td>69.75%</td>
</tr>
<tr>
<td>Bread and Cereal$^a$</td>
<td>8.50</td>
<td>4.86</td>
<td>3.64</td>
<td>42.82%</td>
</tr>
<tr>
<td>Vegetable$^a$</td>
<td>4.00</td>
<td>1.96</td>
<td>2.04</td>
<td>51%</td>
</tr>
<tr>
<td>Fruits$^a$</td>
<td>3.00</td>
<td>1.07</td>
<td>1.93</td>
<td>64.33%</td>
</tr>
<tr>
<td>Fats, Oils, Sweets</td>
<td>0.00</td>
<td>5.14</td>
<td>(5.14)</td>
<td>(514%)</td>
</tr>
</tbody>
</table>

Note. $^a$Recommended servings are the average of the servings recommended in the Food Guide Pyramid.
Table 10

FSD3’s Food Group Analysis

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Number of Daily Recommended Servings</th>
<th>Daily Average Servings on the Menu</th>
<th>Under/ (Over)</th>
<th>Percent Under/ (Over)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and Poultry</td>
<td>2.00</td>
<td>5.11</td>
<td>(3.11)</td>
<td>(156%)</td>
</tr>
<tr>
<td>Dairy</td>
<td>4.00</td>
<td>1.32</td>
<td>2.68</td>
<td>67%</td>
</tr>
<tr>
<td>Bread and Cereal*</td>
<td>8.50</td>
<td>3.81</td>
<td>4.69</td>
<td>55.18%</td>
</tr>
<tr>
<td>Vegetable*</td>
<td>4.00</td>
<td>1.64</td>
<td>2.36</td>
<td>59%</td>
</tr>
<tr>
<td>Fruits*</td>
<td>3.00</td>
<td>2.36</td>
<td>0.64</td>
<td>21.33%</td>
</tr>
<tr>
<td>Fats, Oils, Sweets</td>
<td>0.00</td>
<td>5.29</td>
<td>(5.29)</td>
<td>(529%)</td>
</tr>
</tbody>
</table>

Note. *Recommended servings are the average of the servings recommended in the Food Guide Pyramid.
Table 11

**FSDs’ Food Group Analysis**

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Number of Daily Recommended Servings</th>
<th>Daily Average Servings on the Menu</th>
<th>Under/Over</th>
<th>Percent Under/Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and Poultry</td>
<td>2.00</td>
<td>4.32 (2.32)</td>
<td>(116%)</td>
<td></td>
</tr>
<tr>
<td>Dairy</td>
<td>4.00</td>
<td>1.20 2.80</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>Bread and Cereal²</td>
<td>8.50</td>
<td>4.46 3.54</td>
<td>41.65%</td>
<td></td>
</tr>
<tr>
<td>Vegetable²</td>
<td>4.00</td>
<td>1.94 2.06</td>
<td>51.5%</td>
<td></td>
</tr>
<tr>
<td>Fruits²</td>
<td>3.00</td>
<td>1.43 1.57</td>
<td>52.33%</td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Sweets</td>
<td>0.00</td>
<td>5.55 (5.55)</td>
<td>(555%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. *Recommended servings are the average of the servings recommended in the Food Guide Pyramid.

Table 10 shows FSD3 was only 21.33% below serving the proper number of fruit portions while, on average, the FSDs were under portioning this group by 52.33%. When compared to the other FSDs, FSD2 (contract FSD) did a 41% better job of meeting the nutritional standards for fruits being served to the campers. On average, the FSDs over portioned the meat and poultry group by 116% and the fats, oils, and sweets by 555%. For the remaining three groups, the FSDs were under the recommended portions by 70% in the dairy group, 41.65% in the bread and cereal group, and 51.5% in the vegetable group.
While compiling this study's results, an article was found that discussed on-going research about the Food Guide Pyramid (Associated Press, 2004). This article discussed how the United States Government is considering revising the Food Guide Pyramid. One of the main reasons for revisions would be to get away from the "one size fits all" idea that most people using the Food Guide Pyramid tend to perceive (Associated Press, 2004). The article gives a specific example of how the bread and cereal group calls for six to eleven servings per day. The BSA standard for the bread and cereal group calls for six to eleven daily servings. This new research, however, states that 11 daily servings of the bread and cereal group are recommended for teenage boys. With this new research, all FSDs had an increased deficiency of the amount of bread and cereal portions served (Associated Press, 2004).

In general, FSD2, the contract foodservice company, was in the middle of the three FSDs in regard to the number of food group portions served in comparison to the recommendations of the Food Guide Pyramid. The one exception was the bread and cereal group for which he served the least amount of portions of the three FSDs surveyed. FSD2 also served the least number of portions in the fats, oils, and sweets group. While the decreased servings from the fats, oils, and sweets group is commendable, it is not sufficient evidence that the overall menu FSD2 developed and implemented during camp met the Food Guide Pyramid recommendations better than the menus of the other two FSDs. The inability of FSD2 to meet the Food Guide Pyramid requirements indicates that the contract foodservice company will not provide nutritionally better meals. While the contract FSD did come close in one or two of the nutrient categories, his menus still did not indicate comprehensive coverage of the nutritional needs of campers.
A three-tiered analysis of FSDs' menus was used to reach a conclusion about accepting or rejecting sub-hypothesis one. The survey responses indicated that the FSDs, as a group, were less likely than the CDs to know about the revised BSA nutritional standards (Boy Scouts of America, 2002). CDs properly placed responsibility for the foodservice program on the FSDs. The FSDs were also responsible for communicating portion sizes to their staffs. This delegation of responsibility shows the importance of the management skills of the FSDs, as well as the need to understand nutrition. The CDs, according to the survey responses, had more nutrition education than the other camp personnel surveyed. It is important to note this higher level of nutrition education because, according to another portion of the survey, the FSDs are responsible for the development and serving of nutritional menus as delegated to them by the CDs. This means that the trained people are relying on the untrained people to do their jobs, because FSDs do not have all the information about proper nutrition. This observation can also be used to justify why the FSDs menus do not meet the nutritional needs of the scouts as presented in the Camp Program and Property Management book (Boy Scouts of America, 2002).

The menus provided by the FSDs were analyzed by Nutritionists Pro™ to determine the level of calories served, nutrients served, and portions from the six food groups in the Food Guide Pyramid that were served each meal. It was determined that, in all three cases, two out of the three menus lacked the calories required by BSA standards. It was also determined that the nutrient requirements, as set forth by Wiseman (2002); Sizer and Whitney (2000), Bijefeld (2001), Reinhardt and Brevard (2002), Patchell (2000), McLaughlin (2002), Rees and Pipes (1997), Tamborlane, Weiswasser, Fung,
Held, Liskov (1997), and the Boy Scouts of America (2002), were not adequately provided for by any of the FSDs. The final analysis of the serving portions showed that the FSDs, on average, served too much meat and poultry and fats, oils, and sweets. This analysis also showed a deficiency in the recommended number of servings in the dairy, vegetable, fruit, and the bread and cereal groups. Therefore, with no conclusive results to show that the contract FSD was doing a better overall job in meeting the scouts’ nutritional requirements than the Council-hired FSDs, sub-hypothesis one was rejected.

Sub-Hypothesis Two

Sub - H2. The managers of the foodservice management contract company will have a more comprehensive educational background on nutrition than will the Council’s camp directors.

From the survey results, the Council CDs and the contract foodservice company FSD all responded by saying that they had not taken a formal foodservice class. In addition, more of the CDs than FSDs say that they had attended a nutrition class. Because the CDs are required to attend Camp School and the FSDs are not, explains why more CDs have nutritional education than the FSDs (DCS, May 2003). From this information, the sub-hypothesis that the contract foodservice company FSD had more training than the council CDs has to be rejected.

Sub-Hypothesis Three

Sub – H3. The managers of the foodservice management contract company will have a more comprehensive educational background on nutrition than will the Council’s camp administrators.
When reviewing survey responses, two of the three CAs had been trained in foodservice, one of whom was from the contract foodservice company. Again, the foodservice management company FSD was not trained in nutrition. The same result was noted when addressing whether or not the respondent had taken a nutrition class. Sub-hypothesis three was rejected on the grounds that half of the CAs from the council and half of the contract foodservice company managers had been formally trained which meant that, between the two groups, no group had a better record of nutritional education.

Sub-Hypothesis Four

Sub – H4. The managers of the foodservice management contract company will have a more comprehensive educational background on nutrition than will the Council’s foodservice directors.

To properly assess whether the contract foodservice company managers or the Council-hired foodservice managers had the greatest educational knowledge, two survey questions were used to determine the FSDs’ nutritional education background. In reviewing the FSDs’ responses about attending a nutrition class, FSD3, who was Council-hired, was the only FSD to have taken a nutrition class. When attending a nutrition class is compared to training in foodservice, the contract FSD was the only FSD formally trained in foodservice. The majority of the respondents to the survey stated that the responsibility for the nutritional composition of the menus is the responsibility of the camp’s FSD. The importance of this sub-hypothesis is indicated by the fact that the respondents place the sole responsibility of the menu being nutritionally sound in the hands of the FSD for the camp. Sub-hypothesis four is rejected because the only FSD to have had limited formal nutritional education is Council-hired.
Sub-Hypothesis Five

Sub – H5. The camp directors of the Council’s camps included in this study will have a working knowledge of the nutritional guidelines of the BSA program.

The CDs’ knowledge of the BSA guidelines was evaluated by examining the CDs’ responses to several survey items. All the CDs responded that they understood and comprehended the BSA standards for foodservice operations and that they had seen the 2002 revisions. The CDs also stated that they followed the standards. These directors felt that their respective foodservice staffs followed the BSA nutritional standards as outlined in the BSA policies. For these reasons sub-hypothesis five is accepted.

Sub-Hypothesis Six

Sub – H6. The FSDs at the Council’s Camps included in this study will have a working knowledge of the nutritional guidelines of the BSA program.

From the results of the questions and the menu analysis as discussed in Sub – H1, it would seem that the FSDs know about the BSA policies. For the most part, the calories, as determined by the menu analysis from Nutritionists Pro™, were within a few hundred calories below or 3% to 10% below the recommended BSA intake for two of the FSDs while FSD1 was in between the BSA recommendation of 3,600 to 4,000 calories based on his averages. This number, however, is well above the number of calories that is suggested by the research presented in the literature review. There was a 150 calorie range between the highest and lowest average calories served according to the comparisons of menus. While this caloric range alone is not necessarily alarming, when considering the daily averages of the FSDs, a range of 563 calories is shown; which is
14.08% to 15.64% of the total calories that the BSA nutritional standards state the scouts should receive each day.

When comparing the managers' menus with the Food Guide Pyramid serving suggestions, as indicated by the *Camp Program and Property Management* book, the FSDs on average are within .25 to 1.5 servings of each other (Boy Scouts of America, 2002). These serving ranges are illustrated in Table 12. The FSD with the lowest number of portions served and the FSD with the highest number of portions served are within one serving portion of each other.

Thus, the nutritional analysis of the planned menus indicates that the range of the portions served is not overly different; this consistency suggests that, on average, the FSDs all served approximately the same portions from each of the five groups represented in the Food Guide Pyramid. In addition to portions, the previously discussed calories and nutrient counts presented in Tables 5 to 11 show that the contract FSD's menus were better able to meet the nutritional needs of the scouts than were the menus of his Council-hired FSD counterparts. Since the FSDs from both the Council and the contract foodservice company had similar serving portions from each group within the Food Guide Pyramid, sub-hypothesis six is rejected.

**Sub-Hypothesis Seven**

Sub – H7. The menus utilized by the foodservice administrators for the Council's camps included in this study are reviewed by a registered and/or licensed dietitian prior to being used as summer camp menus.

During the follow-up interview process, the FSDs were asked about whether or not a registered and/or licensed dietitian reviewed their menus. FSD2, from the contract
Table 12

*Average Number of Portions Served for Food Guide Pyramid Groups*

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Meat and Poultry</th>
<th>Dairy</th>
<th>Bread and Cereal</th>
<th>Vegetable</th>
<th>Fruits</th>
<th>Fats, Oils, Sweets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.32</td>
<td>1.20</td>
<td>4.46</td>
<td>1.94</td>
<td>1.43</td>
<td>5.55</td>
</tr>
<tr>
<td>Median</td>
<td>4.21</td>
<td>1.21</td>
<td>4.71</td>
<td>1.96</td>
<td>1.07</td>
<td>5.29</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.74</td>
<td>0.13</td>
<td>0.57</td>
<td>0.29</td>
<td>0.81</td>
<td>0.58</td>
</tr>
<tr>
<td>Range</td>
<td>1.46</td>
<td>0.25</td>
<td>1.05</td>
<td>0.57</td>
<td>1.50</td>
<td>1.07</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.65</td>
<td>1.07</td>
<td>3.81</td>
<td>1.64</td>
<td>0.86</td>
<td>5.14</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.11</td>
<td>1.32</td>
<td>4.86</td>
<td>2.21</td>
<td>2.36</td>
<td>6.21</td>
</tr>
<tr>
<td>Count</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

foodservice company, responded that the menu given for analysis was reviewed by a dietitian. FSD1 and FSD3 did not state if their menus were reviewed by a registered and/or licensed dietitian. The CD who supervised FSD3 did state during the follow-up interview that FSD3's menus were reviewed by a registered and/or licensed dietitian. Since two of the three menus were reviewed by a registered and/or licensed dietitian, this sub-hypothesis is accepted.
Conclusion

In this case study, the intention was to determine if the type of foodservice management personnel affected the nutritional value of the meals served. The hypothesis for this study states that: The nutritional content of Boy Scout camp menus from a selected BSA Council will vary according to the ownership of the foodservice delivery system. From the analysis of the seven sub-hypotheses, the contract foodservice company managers did not demonstrate their abilities to produce a more nutritionally sound menus as compared with the Council-hired FSDs. Additionally, no evidence showed that the Council-employed FSDs had menus that were more nutritionally sound than the contract FSD. While both sides understood nutrition needs to some degree, in the end, the analysis highlighted many nutritional aspects of the two camps' menus that could be improved, and no conclusive evidence was found to accept the hypothesis that the contract company would do a better job providing nutritionally sound menus for the scouts than the Council-hired FSDs.
CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Camp foodservice is an integral part of the summer camp experience for the millions of adolescents who go to camp every summer. The Boy Scouts of America (BSA) has written a book in order to help the camp directors and others in management positions at BSA camps do their jobs with better focus. From the interviews conducted for this study, it was learned that, during the Camp Directors’ (CDs) and other camp administrators’ training for managing camps, one to three hours were spent discussing the camp’s foodservice.

Summary

In the end, no conclusive evidence was found to give any reason to accept the hypothesis as stated. This conclusion is a result of the rejection of five of the seven sub-hypotheses. In fact, the case study does not show that even one of the Foodservice Directors (FSD) served food that met all the nutritional needs of the scouts as set forth in the BSA guidelines. However, if the researched caloric intake average of 2,850 was used as a determining factor for compliance with the BSA nutritional guidelines, then each of
the FSDs' menus would meet these guidelines. However, the research discusses how just looking at calories is not an adequate measure of adolescents' nutritional needs. Indeed, all of the menus exceed the RDI's guidelines for caloric intake discussed in chapter two of this research (National Academic Press, 2003).

When observing the Food Guide Pyramid and the suggested servings, the findings indicate that none of the FSDs met all of the nutritional needs of the scouts. The meals did, however, meet the recommended protein needs of the scouts as indicated by the Food Guide Pyramid, and FSD3's menu did, on average, come within .64 servings or 78.67% of the recommended servings in the fruit group of the Food Guide Pyramid. FSD2, the contract FSD, was the FSD that came the closest to meeting the caloric intake recommendations, as discussed by the nutrition researchers in the literature review even though these are not the BSA standards. In the end, however, FSD2's calories, nutrients, and servings from the Food Guide Pyramid did not indicate that his menus were more nutritionally sound than the menus of the Council-hired FSDs.

Sub-hypothesis one discussed how the contract foodservice company FSD would have a menu that was more in compliance with the BSA standards than the Council-hired FSDs. From the survey and other research it was found that this sub-hypothesis had to be rejected because no evidence proved this hypothesis to be true.

The second sub-hypothesis explored the fact that the contract foodservice company FSD would have more nutritional education than the CDs of the Council camps. From the surveys and the interviews, it was determined that the CDs did, indeed, have the opportunity to learn about nutrition through various outlets; thus, they had more training
about nutrition than the contract foodservice company FSD. Sub-hypothesis two was rejected based on this information.

The third sub-hypothesis dealt with the nutrition education of the contract foodservice management managers as compared to the Council camp administrators. The results of this section of the survey showed that, of the two people from the contract foodservice company, only one attended a nutrition class. The two CAs from the Council had the same amount of training as the contract FSD. Thus, there was no difference found in the level of nutritional education of the managers from either the contract foodservice company or the Council managers. For this reason, sub-hypothesis three was rejected.

Sub-hypothesis four was used to compare the nutritional knowledge of the Council-hired foodservice directors versus the contract foodservice company FSD. In the analysis of the information for this hypothesis, it was found that the FSDs hired by the Council had more nutrition education than the contract foodservice company FSD. Thus, the fourth sub-hypothesis was rejected because the Council-hired personnel had more nutritional knowledge than the contract foodservice company FSD.

The fifth sub-hypothesis was formulated to determine if the CDs from the Council camps had a working knowledge of the BSA nutritional requirements. According to the survey responses, they did demonstrate a comprehensive knowledge of the BSA standards. When the interviews were conducted, all of the CDs stated, in one form or another that they were taught nutrition standards during the mandatory camp school that CDs must attend. It is interesting to note that the directors talked about the class being two to three hours while Mr. Bates, the National BSA Director of Camping and
Conservation, said that this class was about an hour (Bates, D., personal communications, February 21, 2001, and CD3, personal communications, July 14, 2004). This training was probably the key factor in raising the knowledge level of CDs regarding BSA camp foodservice standards. For this reason, the fifth sub-hypothesis was accepted.

Sub-hypothesis six was used to determine the FSDs' understanding and knowledge of BSA nutritional guidelines for foodservice directors. When reviewing the surveys, interviews, and the menu analysis, it was determined that there was insufficient evidence to accept this sub-hypothesis. This evidence included the fact that the number of servings that the FSDs provided campers did not meet the Food Guide Pyramid guidelines except for the meat and protein group. Only one of the FSDs came close to meeting the guidelines for the fruit group. Also, only one of the three FSDs provided calories that met the BSA guidelines of 3,600 to 4,000 per day. The FSDs did not meet the daily nutrient needs of the scouts. The menus provided an excessive number of servings from several nutrient categories and an insufficient number of other nutrients. For these reasons, the sixth sub-hypothesis was rejected.

The final sub-hypothesis, number seven, discusses whether or not the FSDs at the individual Council camps took the time to have their menus reviewed by a registered and/or licensed dietitian. From the survey results and interviews, it was determined that two of the FSDs had their menu analyzed by a registered and/or licensed dietitian. For this reason, sub-hypothesis seven was accepted.
Conclusions

A review of the sub-hypotheses of this case study shows that the nutritional content of the Boy Scout Camp menus from a selected BSA council does not vary according to the ownership of the foodservice delivery system. Since five of the seven sub-hypotheses were rejected, the primary hypothesis was also rejected.

From this case study, a Boy Scout council camp has an equal chance of getting a trained and educated manager from either a contract foodservice company or someone that they hire directly. In this particular case study, it was determined that the Council neither benefited nor lost by going with either FSD option.

This knowledge could be useful to apply to other BSA camps in the country, but it was gathered in a case study format; therefore, it cannot be applied to other camps. For this reason, it is suggested that future research be done to gather more information from a larger number of BSA councils to determine if, on a grander scale, these results can be replicated.

Future research could not only be beneficial to the thousands of BSA camps throughout the country, but the information could also be used and applied to the many American Camping Association (ACA) camps throughout the country. In fact, the ACA may be an excellent group with which to pursue future research. They not only have some BSA camps, but they also have numerous other types of camps. Thus a study of ACA camps would provide better representation of the various economic backgrounds of the thousands of summer camps that are currently operated in the United States (ACA, n.d. i). Future research could also focus on camps that work with the federal
government’s Summer Foodservice Program and how well those camps comply with that program’s guidelines.

Also, it would be interesting to note how many of the camps within the ACA follow the ACA guidelines and understand the ACA foodservice standards. This research indicates that, in this particular BSA Council, only the scouts at one of the three camps is receiving the BSA recommended amount of calories per day. Additionally, the scouts do not seem to be receiving all the nutrients from the five basic food groups as indicated in the Food Guide Pyramid or the nutrients needed by adolescent boys discussed in the literature review or Government RDIs. With this foundation of proper food group and nutrient representation, the Council is urged to re-examine their menus at all facilities and see how they can better provide the necessary nutritional requirements for their campers.

Recommendations

There are several recommendations for future studies that should be conducted because of the information presented in this case study. First and foremost would be to conduct a larger study based on this case study. The questions asked should be better structured in order to generate more conclusive responses from the surveyed individuals.

As with any research, there always seem to be additional questions that could have been asked. Additionally, better ways abound to ask the same questions. One major recommendation for improvement on this study would be to copy the standards in the Camp Program and Property Management book and include them with the survey to make sure that the participants know to which standards the researcher is referring (Boy
Scouts of America, 2002). Including the standards with the survey would enable the researcher to say with certainty that the respondent knew exactly about which standards the researcher was asking. In addition, this approach will help in providing better answers because several of the respondents, during the phone and personal interviews, mentioned that they did not recall the standards completely. By providing the various managers with a copy, they would be better able to give their personal opinion of the standards. One way to make sure that these copies of the standards did not directly influence the answers given by the respondents would be to send the standards after the respondent sent back the written survey but before the surveyor followed up with the phone and/or personal interviews. This approach would help provide better results without a biased response coming from those persons that first re-read the standards and then completed the survey.

In the written survey, the survey developer omitted the question that directly asked about the respondents’ use of a registered dietitian to review the menus. In the follow-up interviews, the researcher was able to correct this mistake, but it would have been better to include this item in the original survey.

Also, the last item in the written survey that dealt with the suggested caloric intake was asked incorrectly. The researcher applied his own scale and range system for this question without regard to the BSA’s recommendation of 3,600 to 4,000 calories a day. Instead, the survey contained ranges from 3,500 to 3,999 and so on. While this range was a hundred below the BSA lower recommendation and one calorie off from the BSA high recommendation, it could have potentially caused some respondents to mis-answer this question. With this in mind, the recommendation for properly asking this
question would be to use the BSA standard range of 400 calories and then apply that both above and below the 3,600 to 4,000 calorie range.

During the survey stages of this research, it was noted that while the information being gathered was useful, it could only be applied in terms of the Council being studied. This limitation meant that the study could not be applied on a national level. It would be recommended that this survey be taken to a national scale so that the results could be more applicable to all BSA councils and not just the one reviewed in this case study. However, the case study was useful in that it will assist future researchers in being better able to question BSA camp foodservice personnel. It also helped show the weaknesses of current camp foodservice research in regard to the nutritional knowledge of the camp personnel. The ACA has already shown interest in regard to having a copy of this research sent to them for their camping standards committee to review.

Another recommendation would be directed to the BSA national office. This recommendation would be to review the caloric intake numbers that are recommended for the scouts at camp. The research presented in the literature review shows that the BSA recommended caloric intake is 850 to 1,250 calories higher than the average recommended caloric intake for this age group. Since these numbers are so much above the recommended caloric intake numbers, the BSA should take the time to review these recommendations and make sure that they are requiring the correct number of calories for the scouts attending camp. The BSA should also look to consulting with several registered and/or licensed dietitians for assistance with creating a new recommended caloric intake, nutrient guidelines, and serving portions that are better suited for adolescent males at camp.
In addition, the calculations for the activity level and the amount of calories used should be review by the BSA because the BSA estimates of energy used during the various camping activities tended to be higher for some of the activities and lower for other activities as compared to the research in the area of energy usage per activity. This variance means, in turn, that the recommendations made by the BSA for calories could be incorrect.

Another recommendation based on the follow-up interviews would be for the BSA to re-examine the way in which they teach nutrition at Camp School. If they do not have trained personnel teaching the importance of nutrition, they may not be conveying the proper message to the CDs.

The survey also lacked any questions which tested the knowledge of the FSDs, CDs, or the CAs. This lack meant that while the respondents answered that they understood nutrition one can not say with certainty that they understood what they were taught. Not knowing the true nutritional knowledge of the respondents could lead to creditability issues in that the answer given may not correspond with the actual knowledge of the individuals. Therefore any future studies would need to include a nutritional quiz to test the knowledge of these managers.

Although the ACA was not the focus of this case study, during the literature review the ACA was used as a comparable organization to the BSA, and there were several areas that the ACA could review according to the following recommendations. One recommendation to the ACA would be to make the foodservice and nutritional standards a mandatory part of the camp accreditation visit as the BSA has in their separate standards. The need for adolescents to get the proper nutrients is key to their

85
development, whether they are at home or away at camp. As recommendations and not requirements, these guidelines may be standards that the camps may not see as important. If the ACA were to make these standards requirements of the accreditation process, it would cause the camps to take them more seriously. The ACA should require accreditation teams to review foodservice during their visits as indicated by the literature review and make it a required part of point system. Although not discussed at all in the research, the health and safety of the campers is at stake if the food is not properly handled and served to the campers according to commonly accepted sanitation practices.

Another recommendation would be to have the ACA set forth standards that require the acceptance of common sanitation levels. The BSA requires compliance with national, state, and local health codes and looks for such documentation during camp visits.

Both the ACA and the BSA should look at more rigorous review standards and policies to make certain camps have a registered and/or licensed dietitian review the menus. From the research, it was noted that, while the BSA requirements call for the review of the menus, the national organization had no evidence that the menus were reviewed nor did it keep such documentation on hand. In addition, the ACA standards recommend the review of the menus by a registered and/or licensed dietitian but do not require such a review. Thus both the BSA and ACA standards leave room for the individual camps not to comply with their standards. Non-compliance could mean that the meals that some of the campers are getting at either type of accredited camp could potentially, not be nutritionally sound.
All these recommendations should be reviewed by the appropriate organizations. In turn, these organizations should examine these ideas when reviewing or updating their policies and procedures about nutrition relative to their summer camp menus.

Final Analysis

While this research is unable to conclusively state whether or not the managers from the contract foodservice company served more nutritionally balanced meals than did managers employed directly by the BSA, it does indicate the importance of studying the nutritional value of summer camp menus. In addition, the BSA and the ACA need to review their standards about nutritional education and make them more consistent with the current research available about nutrition for adolescents.
APPENDIX A:

WRITTEN SURVEY
Name of Respondent: _____________________
Position: _____________________

Survey of XXXXXXXXXXX Council
Foodservice Staff and Administrators

BSA National Nutritional Standards (Camp Program and Planning Guide)

1. Before this survey did you know that the BSA had national standards for foodservice operations at the camps run by the local council? Yes or No

   If you answered no, proceed to question number 7.

2. Have you seen the national BSA nutritional standards for summer camp foodservice operations since their last revision in 2002? Yes or No

3. Do you follow the guidelines given in the BSA standards? Yes or No

4. Did your immediate supervisor give you the BSA nutritional standards at any time? Yes or No

   If yes, when did you receive them?
   A. Before Camp  B. During Staff Week  C. During Camp

5. Do you feel the BSA standards address the nutritional intake that is needed for the scouts that attend the camp that you work for? Yes or No

6. Do you and your foodservice staff follow the guidelines set forth in the standards book? Yes or No

Menu Planning and Development

7. Are you directly responsible for the development of the menu at summer camp? Yes or No
8. Who at camp is responsible for making sure that the menu meets the nutritional guidelines set up by the BSA national Office?
   A. Camp director  B. Foodservice director  C. Chef  
   E. The cooks  F. Camping services director  G. Foodservice company  
   H. Dietitian  I. Other: ______________________ 
   J. No one checks the menu to see that it meets the nutritional standards

9. When do the menus for camp get planned?
   A. Within two months before camp  B. During Camp  
   C. Within two months after camp for next year  D. Other: ________________

10. Do you follow up to make sure that the menu that is planned is served during camp?
   Yes or No

11. Does the camp have standardized recipes? Yes or No

Portion Control and Menu Design

12. What is the basis for determining the portion sizes for the foods to be served at your camp? (Pick all that apply)
   A. Nutritional guidelines from BSA  B. Based on cost factors 
   C. Personal understanding of USDA nutritional guidelines  D. Other: ________________

13. How is the planned portion of the food served at camp controlled? (Pick all that apply)
   A. What the chef tells the servers  B. Use of P.C. (portion control) packaging 
   C. Based on utensils that are available  D. Other: ________________

14. How are portion control (P.C.) issues communicated to the serving staff?
   A. The chef or person in charge of serving lines tells the servers  
   B. The correct serving utensil is placed on the line for each item 
   C. The correct utensil is placed on the line and serving sizes are communicated to the servers by the person in charge  
   D. None of the above
15. How do you determine the amount of a food item to make for a given meal?
   A. Use the amount made the previous meal as a deterring factor
   B. Use the nutritional standards set-up by the USDA
   C. Use the nutritional standards put in place by the national BSA
   D. Self determined by the person in charge of the production of each food item
   E. No real determining factor, just make a lot of food

16. Does the cost of menu items ever affect what you buy?  Yes or No

17. Is the cost of an item a determining factor in whether or not an item is included on
    the menu?  Yes or No

18. Do previous summer camp foodservice experiences determine what you plan for
    a menu?  Yes or No

19. Do you prefer to use prepackaged items or items that you make yourself and
    portion yourself?
    A. Pre-packaged and portioned  B. Self portioned and produced

Budget

20. How do you create your foodservice budget?
    A. Use actual recipe costs  B. Based on specials from suppliers
    C. A percentage increase from last year’s budget

21. Do you create menu ideas based on sales or special deals that you can get from your
    suppliers?  Yes or No

22. Does money play a role in the planning of menus for camp?  Yes or No

23. Do you analyze what you projected to spend during the summer and what you
    actually spent during the summer when reviewing food costs?  Yes or No

24. Are parts of the menu determined by your ability to use funding to buy certain
    products or equipment items that make the preparation of certain items easier for
    production within the facility that you work?  Yes or No
Nutritional Education

25. Do you communicate nutritional concerns to your foodservice staff about the foods that they are preparing? Yes or No

26. If you train your employees about the nutritional needs of the campers, by what means do you do this? (Select all that apply)
   A. Training classes
   B. Standardized recipes
   C. On the job training
   D. Posters
   E. Give them some form of nutritional quiz
   F. Assume that they understand nutritional needs of the campers
   G. Handouts and workbooks
   H. Ask to see that they have proof of taking a nutritional class
   I. Do not train
   J. Other (Please specify): __________________________

27. Who do you feel is responsible for nutritional education in your summer foodservice operation? (Select all that apply)
   A. The individual foodservice worker
   B. The person directly in charge of food production
   C. The foodservice contractor
   D. The camping services director
   E. The camp director
   F. Other (please specify): __________________________

28. Who is responsible for the nutritional composition of the menu at the camp you run or manage?
   A. Chef
   B. Foodservice director
   C. Camp director
   D. Foodservice company
   E. Camping services director
   F. Dietitian
   G. Other: __________________________

Respondents Foodservice Background

29. How many years have you worked in or around camp foodservice? ______

30. How many years have you worked in foodservice altogether? ______

31. Have you ever been formally trained in foodservice? Yes or No
32. If yes, what is your highest level of foodservice training?
   A. High school vocational classes  B. Community college classes
   C. Graduate of a community college or culinary school program
   D. Graduate of a bachelors program in foodservice
   E. On the job education
   F. Other (Please specify): ____________________________

33. Have you ever taken a nutrition class? Yes or No

34. What do you think is the daily caloric intake needs of the scouts that you prepare food for at camp?
   A. 1499 or less   B. 1500 to 1999   C. 2000 to 2499
   D. 2500 to 2999   E. 3000 to 3499   F. 3500 to 3999   G. 4000 plus

Day Phone Number: (______) ______-___________

Best time to Call you (Please indicate day, time, and time zone):

   Day of the Week: ____________________________
   Time: ____________________________
   Time Zone: ____________________________
APPENDIX B:

FOLLOW UP QUESTIONS
1. In the standards, it suggests that the menu be developed around the idea of having 3,600 to 4,000 calories of food on the menu per day. How do you feel about this number and would you change anything about this number?

2. If you have reviewed the standards, what did you think was helpful in the standards?

3. If you have reviewed the standards, what do you think that they should change?

4. Do you feel that your foodservice program that you provided to the campers was able to meet their needs?

**Menu Development and Planning?**

1. How many hours do you spend planning the menu?
2. Do you plan a menu then order or do you order certain items and then plan the menu?

3. If you plan the menu during camp, how many hours per week do you spend on planning the menu?

4. What procedures do you have in place to follow up on the menu and it's enforcement?

5. Are standardized recipes used in production in the kitchens at camp?

6. Who is responsible for development of these recipes?

7. Were the recipes revised since they were first developed?

8. If menus are review after camp, what is the process?

Portion Control and Menu Design

1. Do you look to P.C. packages as a means to insure that all scouts get the same menu item?

2. On protein items and other bulk served food, do you determine how much to make by the number of participants projected to be at each meal?

3. Do you watch the waste factor of food items on you menu and does that take a role in the development of future menus?

4. Do you survey or talk with the people that eat the food that you prepare?

5. What do you do for portion control items that come in small pieces?
Nutritional Training

1. What methods of training your staff on nutritional concerns do you feel is the most valuable?

2. Do you feel that your staff or you get the necessary amount of training to do their job when it comes to nutritional needs of the campers?

3. What is one means that you would like to see implemented to increase the nutritional education of yourself or your staff?

Respondents Foodservice Background

1. What school or culinary education program did you come from?

2. Did you formal education help with your career or was on the job training more helpful?
APPENDIX C:

OFFICE FOR THE PROTECTION OF
RESEARCH SUBJECTS (OPRS) APPROVAL FORM
This is an automatically generated email. If you already received this information from OPRS, please disregard.

Social/Behavioral IRB - Expedited Review
Approval Notice

DATE: March 12, 2004

TO: Dr. Audrey McCool
Food & Beverage Management

FROM: Office for the Protection of Research Subjects

RE: Status of Human Subject Protocol Entitled: Assessing the Nutritional Quality of BSA Camp Menus OPRS# 0403 - 1170

Notification of IRB Action by Dr. Paul Jones
Chair, UNLV Social/Behavioral Sciences Institutional Review Board

This memorandum is notification that the protocol for the project referenced above has met the criteria for exemption from full committee review by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in regulatory statues 45CFR 46.110. The protocol has been submitted through the expedited review process and has been approved.

The protocol is approved for a period of one year from the date of IRB review. Work on the project may proceed as soon as you receive written notification from OPRS.

Should the use of human subjects described in this protocol continue beyond March 10, 2005, it would be necessary to request an extension 30 days before the expiration date. Should there be any change(s) to the protocol, it will be necessary to request such change in writing through the Office for the Protection of Research Subjects.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at OPRSHumanSubjects@ccmail.nevada.edu or call 895-2794.

Office for the Protection of Research Subjects (OPRS)
4505 Maryland Parkway Box 451037
Las Vegas, NV 89154-1037
Office (702) 895-2794 Fax (702) 895-0805

Research Administration Building 103 M/S 1037
OPRSHumanSubjects@ccmail.nevada.edu
Website: http://www.unlv.edu/Research/OPRS/
March 15, 2004

Mr. XXXXXXX XXXXXXX
XXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXX

Dear XXXXXX,

I am writing you to ask for your assistance in my master's thesis research project. As part of my master's work I have decided to do a nutritional analysis of summer camp menus, looking at the differences between an in-house foodservice program and an outside foodservice company running and managing the foodservice facilities at camp. As you may be aware, some programs throughout the country do all dining room served meals while others do a patrol/commissary issued meals. Some offer food to be used on the trail while others simply use heat and serve food. Through this survey I hope to gain an insight into how the use of various forms of foodservice styles of operation play a direct role in the nutritional make-up of menus offered at camp.

I have chosen the XXXXXXX Council (XXXX) as my specific council to analyze because of my long term relationship with the council and the foodservice operations at its camps. I have identified you and others as key components of the XXXX foodservice operation. You have been chosen as a participant because of your ability to enhance the review and understanding of summer camp foodservice operations.

Enclosed you will find a short questionnaire asking about various aspects of the foodservice program that you either managed directly or for which you were responsible at the camp you helped administratively run. It should take you no more than 15 to 20 minutes to answer the survey questions. If you do not know the answer to a question, please skip that question. These questions will be used to gauge the understanding of persons involved in Boy Scout camps' foodservice decision making process.

In addition to the survey, I have enclosed a copy of the menu that was used at the camp for which you were directly responsible. I am asking that you indicate the portion size for each menu item as well as you can remember. In other words, for sausage at breakfast you would indicate that 2-1 oz. patties of sausage were served. I understand that you may have had to substitute other items at times during camp, but I will just be reviewing the items that you specifically called for in your menu planning.

I know that your time is valuable, so I do not want to take too much of your time. I have enclosed a self-addressed stamped envelope for your reply. If you would please send me your responses no later than March 24, 2004, it would be greatly appreciated. Once I receive the information from you, I will be doing follow up calls to ask some additional questions about some of your responses. On the bottom of the survey, please list the best phone number to use to contact you and the best time to reach you. I anticipate needing no more than 20 minutes of your time for these phone interviews. After I have completed this research and finished my paper I will make a copy of the paper available to you if you would care to see the research results.

101

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
I have been in contact with Mr. XXXXX XXXXXX, Director of Camping Services – XXXX, and he has approved the survey. Let me assure you that your name will not be a part of the final document and that the names of the companies that you work for will not be identified in any way. This information will be used solely for educational purposes. Your participation is up to you, but I ask for your assistance with this final master's project. If you have any other concerns please call me at 702-496-6614 or email me at scott6067@msn.com. In addition, you may contact Dr. Audrey McCool, my faculty advisor, at 702-895-3248 or the UNLV Office for the Protection of Human Subjects at 702-895-2794. Thank you again for your help with this project.

Sincerely,

Scott Ramin
APPENDIX E:

INFORMED CONSENT
TITLE OF STUDY: Assessing the Nutritional Quality of BSA Camp Menus
INVESTIGATOR/S: Gregory Scott Ramin and Dr. Audrey McCool
PROTOCOL NUMBER: 0403-1170

Purpose of the Study
You are invited to participate in a research study that will analysis the menus at the camp where you were a major part of the administrative team. The purpose of this study is to determine if the type of company or individual running the foodservice operation at BSA (Boy Scout of America) camps run by a southeast XXXX BSA council makes a difference in the nutritional value of the menus produced at each camp. In addition to the survey you will be asked to fill out; you may be contacted in the future by the researcher to follow up the survey that you have responded to. The menus that you send in will be analysed using a computer based nutritional program.

Participants
You are being asked to participate in the study because you were designated as a key component of the foodservice operation run by the southeast XXXX BSA council. Your direct responsibilities over the menu development or management of the foodservice program were determined by the administrative guidelines set forth by the BSA national camp standards.

Procedures
If you volunteer to participate in this study, you will be asked to fill out the enclosed survey which should take you about 20 to 30 minutes. You are also being asked to include portion information on the enclosed menu so that the researcher can do a nutritional analysis of the menus from each of the camps studied. Also after the researcher receives your survey he may contact you with follow up questions to the survey answers that you have given. It is anticipated that the follow up questions will take approximately 20 minutes of your time.

Benefits of Participation
There may be no direct benefit to yourself for your involvement in this survey. The benefits will be from a newer understanding of how BSA camps in general run their foodservice programs. The results should also demonstrate the reasons for going with a contract foodservice company or from doing foodservice in house.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. These minimal risks include the fact that you may become uncomfortable with the questions. If you do become uncomfortable you may choose not to complete the survey.
TITLE OF STUDY: Assessing the Nutritional Quality of BSA Camp Menus
INVESTIGATORS: Gregory Scott Ramin and Dr Audrey McCool
PROTOCOL NUMBER: 0403-1170

Cost / Compensation
There will be no financial cost to you to participate in this study. The study will take 30 minutes of your time. You will not be compensated for your time. The University of Nevada, Las Vegas may not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research study.

Contact Information
If you have any questions or concerns about the study, you may contact Scott Ramin at (702) 895-1330 or you may email him at scott6067@msn.com. In addition, you may contact Dr. Audrey McCool, the faculty advisor for the study at (702) 895-3248.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 895-2794.

Voluntary Participation
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant ________________________________ Date ________________________________

Participant Name (Please Print) ________________________________
APPENDIX F:

FSD1'S MENU
## Winter Camp 2003

### Breakfast
- **Friday, December 26th**
  - Scramble Eggs
  - Sausage Parties (2)
  - Seasoned Cubes
  - French Toast (2)
  - Breakfast Taco (2)
  - Western Omlets
- **Saturday, December 27th**
  - Smoked Break Fast Salads
  - Ketchup/Piante Sauce
  - Shredded Cheese (1.6)
- **Sunday, December 28th**
  - Orange Juice
  - Orange Juice
  - Western Omlets
- **Monday, December 29th**
  - Assorted Cereal
  - Assorted Cereal
  - Orange Juice
  - Orange Juice
- **Tuesday, December 30th**
  - Assorted Cereal
  - Assorted Cereal
  - Orange Juice
- **Wednesday, December 31st**
  - Assorted Cereal
  - Assorted Cereal
  - Orange Juice

### Lunch
- **Staff Only**
  - Tuna Salad (3)
  - Lettuce/Tomato
  - Tomato/Pineapple
  - Tuna Salad
  - Hot Dog (2)
  - Hoagies – Three Meat
  - Chopped BBQ Sandwich (2)
- **Movie Night**
  - Nachos
  - Cherry Punch

### Dinner
- **Staff Only**
  - Grilled Chicken Stew
  - Scalloped Potatoes
  - Seasoned Green Beans
  - Hot Rolls
- **Camp Wide Event (Opening Night)**
  - Powdered Donuts
  - 6 oz Juice

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### Staff Only Menu
- **Grilled Chicken Sandwich**
  - Buns/Swiss Cheese
  - Lettuce/Tomato
  - Sliced Cheese
  - Ruffles (6.9)
- **Tuna Salad**
  - Lettuce/Tomato
  - Sliced Cheese
  - Ruffles (6.9)
- **Hot Dog (2)**
  - Chili
  - Shredded Cheese
  - Fries
  - Mayo/Mustard/Ketchup
  - Fried Pie–Cherry
  - Can Beverage
- **Hoagies – Three Meat**
  - Sliced Cheese
  - Lettuce/Tomato/Onion/Pickle
  - Mayo/Mustard/Ketchup
  - BBQ Chips
  - Chocolate Cups
  - Can Beverage

### Movie Night Menu
- **Nachos**
- **Cherry Punch**

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<td>Fruit Roll-ups</td>
<td>Pudding 3 3/4</td>
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<td>Chips, 2 1/2</td>
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APPENDIX H:

FSD3'S MENU
### Camp Stake

#### 2003 Boy Scout Summer Camp Menu

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<th>Day</th>
<th>Breakfast</th>
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<tr>
<td>Sunday</td>
<td>Pancakes 3 oz.</td>
<td>Hamburger and Cheese, 12 oz.</td>
<td>Spaghetti with meatballs, 8 oz.</td>
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<tr>
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<td>Sausage 3 oz.</td>
<td>Chicken and Rice, 12 oz.</td>
<td>Fried Chicken, 8 oz.</td>
</tr>
<tr>
<td></td>
<td>Cereal 1.13 oz.</td>
<td>Soup, 12 oz.</td>
<td>Mashed Potatoes, 8 oz.</td>
</tr>
<tr>
<td></td>
<td>Juice 6 oz.</td>
<td>Salad Bar, 8 oz.</td>
<td>Coleslaw, 4 oz.</td>
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<tr>
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<td>Milk 6 oz.</td>
<td>Baked Buns, 8 oz.</td>
<td>Muffins, 4 oz.</td>
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<td>Dinner</td>
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<td>Sausage 3 oz.</td>
<td>Soup, 12 oz.</td>
<td>Fried Chicken, 8 oz.</td>
</tr>
<tr>
<td></td>
<td>Cereal 1.13 oz.</td>
<td>Vegetable, 12 oz.</td>
<td>Mashed Potatoes, 8 oz.</td>
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<td></td>
<td>Aed. Fruit 12 oz.</td>
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<td>Green Beans, 8 oz.</td>
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<td>Juice 6 oz.</td>
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<td>Coleslaw, 4 oz.</td>
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<td>Milk 6 oz.</td>
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<td>Muffins, 4 oz.</td>
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### All Dining Room Meals are served with Butter, Peanut Butter, Jelly, Bread and Water

Menu is Subject to Change
APPENDIX I:

FSD1'S FOOD GUIDE PYRAMID COUNT
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113

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**FSD1 - Saturday**

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**Weekly Totals**

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APPENDIX J:

FSD2'S FOOD GUIDE PYRAMID COUNT
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APPENDIX K:

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<td>0</td>
<td>2.00</td>
</tr>
</tbody>
</table>

**Weekly Averages**

<table>
<thead>
<tr>
<th>Food Guide Pyramid Item</th>
<th>Amount of Serving</th>
<th>Daily Averages</th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Over/ (Under)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and Poultry</td>
<td>2</td>
<td>5.11</td>
<td>10.5</td>
<td>11.2</td>
<td>14.05</td>
<td>3.11</td>
</tr>
<tr>
<td>Dairy Group</td>
<td>4</td>
<td>1.32</td>
<td>6.25</td>
<td>2</td>
<td>1</td>
<td>-2.68</td>
</tr>
<tr>
<td>Bread and Cereal</td>
<td>8.5</td>
<td>3.81</td>
<td>9.65</td>
<td>8</td>
<td>9</td>
<td>-4.69</td>
</tr>
<tr>
<td>Vegetable Group</td>
<td>5</td>
<td>1.64</td>
<td>1</td>
<td>1.5</td>
<td>9</td>
<td>-3.36</td>
</tr>
<tr>
<td>Fruits Group</td>
<td>3</td>
<td>2.36</td>
<td>8</td>
<td>6.5</td>
<td>2</td>
<td>-0.64</td>
</tr>
<tr>
<td>Fats, Oils, Sweets</td>
<td>0</td>
<td>5.29</td>
<td>7</td>
<td>18</td>
<td>12</td>
<td>5.29</td>
</tr>
</tbody>
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