ANALYSIS OF THE ROLE FUNCTIONS AND CONTINUING EDUCATION NEEDS OF OHIO, AS COMPARED TO OKLAHOMA CONSULTANT DIETITIANS IN HEALTH CARE FACILITIES

By

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CHAPTER I

INTRODUCTION

The personal nutritionist, like the personal physician and dentist, is becoming the latest status symbol among fitness-minded individuals in today's fast paced society. People from all walks of life, from teens to seniors, from professional athletes to homemakers, are engaging registered dietitians in private counseling regarding their dietary needs. Yet, with this tremendous rise in health consciousness, not everyone has access to the guidance and assistance of properly trained health care professionals. "Dietitians are the only professionally educated group whose primary concern is the application of nutritional science to the care of people" (Galbraith, 1980, p. 531).

According to the Select Committee on Aging, one out of nine American citizens is an older person (65+), and almost half of the nation's elderly population can be found in eight states: California, New York, Florida, Pennsylvania, Texas, Illinois, Ohio, and Michigan (House of Representatives, 1982). As the elderly population increases, the number of nursing home residents may also rise. There exists a possibility of a 55 percent increase in population over the next 20 years and a 132 percent increase (to almost three million elderly individuals) by the year 2030.

Life expectancy seems to increase with the advancement of science and an awareness of the individual's concern about their own health

and nutritional status. The population reflects growing percentages of elderly in the ranks surveyed. Possibly, with the increased popularity of preventative health care and also institutions to care for the critically ill, the need for consultants to advise these clients will also rise.

With the enactment of Public-Law 93-641, precise regulations of medical services, education, and private enterprise were established. Nursing facilities were required to provide a hygienic dietetic service to meet the nutritional needs of each patient (U.S. Department of Health, Education, and Welfare, 1974). Also, the supervisory responsibility of the overall dietetic service was to be headed by a qualified dietitian or a person who frequently and regularly consulted a qualified dietitian.

Dietitians serve multiple and/or varied roles within a society. They can be the Director of the Dietary or Nutrition Department, Director of a Health Care Delivery System, or they can direct the Nutritional Educational Programs, Test Kitchens, or Consumer Affairs Division of a food-related business and industry. They can also be a nutrition or foodservice systems educator in institutions of higher learning. They can work more directly with foodservice as Administrative Dietitians or as Foodservice Managers. Of the 24 American Dietetic Association (ADA) practice groups, however, the largest is the Consultant Dietitians in Health Care Facilities (CD-HCF), boasting a membership of 3,881 nationwide as of April, 1983 (Baldyga, 1983).

Since the establishment of Medicare, Title XVIII, and Medicaid, Title XIX, in 1965, many laws and regulations have been passed that affect both the dietitian and the health care facility.

> In order to promote the effective, efficient, and economical delivery of health care services . . . the Social Security Administration will conform to appropriate professional standards . . . payments for such services will be made . . . in the case of services provided by a hospital or other health care facility on an inpatient basis, only when and for such period as such services cannot, consistent with professionally recognized health care standards, effectively be provided on an outpatient basis or more economically in an inpatient health care facility of a different type, as determined in the exercise of reasonable limits of professional discretion (U.S. Statutes at Large, 1972, p. 1671).

As the field of service and the range of demand increases, so the need for information increases, including research regarding the dietitian, particularly the consultant dietitian. A limited number of studies on the functional role and continuing education needs of the consultant dietitian have been supported in the literature. Smith (1975) conducted a study of forecasting educational and training requirements and responsibilities for consulting dietitians in nursing homes. Spear (1978) did a study of the role of the consultant dietitian in nursing homes: perceptions of dietitians and administrators. Gilbride (1981) completed a study of role functions of dietitians employed in New York State nursing homes, and Faye (1982) studied the role functions and continuing education needs of the consultant dietitians in health care in Oklahoma. A study identifying the perceived educational needs and preferred learning activities of selected dietitians in Ohio was conducted by Vanderveen (1976). With an elderly population of over one million in Ohio (House of Representatives, 1982), a study of the role functions and continuing education needs of consultant dietitians need to be explored to assist in the growing demand for their services in Ohio.

Information gained from this study will hopefully benefit not only dietitians in Ohio but in other states as well. By evaluating the role functions and needs for continuing education of consultant dietitians, knowledge can be gained that will hopefully improve their professional services to elderly homes, hospitals, schools, correction facilities, city health departments, and in other work environments or community agencies where they are employed.

Purpose and Objectives

The purpose of this study was to carry out an analysis of the role functions and continuing education needs evaluation of consultant dietitians in Ohio, as compared to Oklahoma consultants. Specific objectives included:

1. Discover the role functions (activities, responsibilities, or duties) carried out by consultant dietitians in health care facilities.
2. Discover the continuing education needs and issues of concern to consultant dietitians in health care facilities.
3. Compare the role functions and continuing education needs of Ohio consultants with Oklahoma consultants, as reported by Faye, 1982.
4. Make recommendations for future studies involving dietitians who consult in health care facilities.

Hypotheses

The hypotheses postulated in this study were:

H_1: There will be no significant differences in the functional role (activities, responsibilities, or duties) of consultant dietitians in health care facilities (CD-HCF) in Ohio based on: (1) age,

(2) highest degree attained, (3) employment status, and (4) plan of work to establish priorities before consulting in a facility.

H_0: There will be no significant differences in the continuing education needs and issues of concern to CD-HCF in Ohio based on: (1) age, (2) highest degree attained, (3) employment status, and (4) plan of work to establish priorities before consulting in a facility.

Limitations and Assumptions

Only consultant dietitians in the print-out list provided by the Ohio Dietetic Association was surveyed. The January 1, 1983, list included 153 consultant dietitians in health care facilities. It was assumed in this study that respondents who completed the survey did so without bias and to the best of their knowledge. It was further assumed that the sample chosen was representative of most dietitians who consult in health care facilities.

Definitions

Dietitian: A term applied to persons who possess educational qualifications, work experience, and license or certification for employment in various fields of dietetics, such as research, consultation, administration, community, and clinical. Classifications are made according to specialized areas of employment (U.S. Bureau of Employment Security, 1980).

Consultant Dietitian: Advises and assists personnel in public and private establishments, such as hospitals, health-related facilities, child-care centers, and schools in foodservice systems and nutritional care of clients; evaluates and monitors all aspects of

foodservice operation, making recommendations for conformance level that will provide nutritionally adequate, quality food; plans, organizes, and conducts orientation and in-service educational programs for foodservice personnel; develops menu patterns; assesses, develops, implements, and evaluates nutritional care plans and provides for follow-up, including written reports; consults with health care team concerning nutritional care of client; confers with designers, builders, and equipment personnel in planning for building or remodeling foodservice units (U.S. Bureau of Employment Security, 1980).

Chief (Administrative) Dietitian: Directs activities of institution department providing quantity foodservice and nutritional care; administers, plans, and directs activities of department providing quantity foodservice; establishes policies and procedures and provides admininstrative direction for menu formulation, food preparation, and service, purchasing, sanitation standards, safety practices, and personnel utilization; selects professional dietetic staff, and directs departmental educational programs; coordinates interdepartment professional activities and serves as consultant to management on matters pertaining to dietetics (U.S. Bureau of Employment Security, 1980).

Food Service Supervisor: Supervises employees engaged in serving food in hospital, nursing home, school, or college foodservice department and similar institutions, and in maintaining cleanliness of foodservice areas and equipment; gives training to workers in methods of performing duties and assigns and coordinates work of employees to promote efficiency of operations; supervises serving of meals in dining room; oversees cleaning of equipment, according to sanitary methods; keeps records, such as amount and cost of meals served and

hours worked by employees; requisitions supplies and equipment to maintain stock levels; may direct preparation of foods and beverages; may assist clinical dietitian in planning menus; may interview and select new employees; may supervise food service worker, hospital, and may be designated as tray-line supervisor (U.S. Bureau of Employment Security, 1977).

Skilled Nursing Facility: An institution (or distinct part of an institution) such as a skilled nursing home or rehabilitation center which has a transfer agreement in effect with one or more participating hospitals and which is primarily engaged in providing to inpatients skilled nursing care and related services for patients who require medical or nusring care, or rehabilitation services for the rehabilitation of injured, disabled, or sick persons; has a physician, registered professional nurse, or medical staff respoonsible for the execution of such policies; provides appropriate methods and procedures for dispensing and administering drugs and biologicals (U.S. Department of Health and Human Services, 1983).

Intermediate Care Facility: A facility which is certified and meets federal standards and provides a lesser extensive health related care and service, but not around the clock. Most intermediate facilities carry rehabilitation programs with an emphasis on personal care and social services. These facilities primarily serve people who are not fully capable of living by themselves, yet are not necessarily in need of 24 hour nursing care (U.S. Department of Health and Human Services, 1980).

Function: "The nucleus of activities, responsibilities or duties so homogeneous in character as to fall logically into a unit for purpose of execution" (Tead and Metcalf, 1926, p. 59).

Analysis: "The separation of an intellectual or substantial whole into constituents for individual study" (Morris, 1981, p. 47).

Continuing Education: A lifelong, primarily self-directed, process aimed at maintaining professional competence in an ever changing environment. It should be based on the professional's real world needs and should offer a variety in learning opportunities (Vanderveen, 1976).

Consultant Account: A business relationship between a consultant dietitian and a health care facility which involves providing professional nutritional expertise on a fee-for-service basis (Faye, 1982).

CHAPTER II

REVIEW OF LITERATURE

Historical Perspective

The founding of the American Dietetic Association had its beginning in Cleveland, Ohio, in 1917 (Barber, 1959). It now seems appropriate to study a select group, the Ohio dietitians, and how they have progressed 66 years later. Before World War I, the dietitian was confined to a "diet kitchen" where she fed the ill and instructed nurses in feeding the ill (Barber, 1959). The dietitian has come a long way from the traditional role of being "only" the kitchen expert to her more liberated position presently as the nutrition expert or educator and manager of foodservices and/or nutrition departments. This liberation was not a product of chance, but rather a product of advancements in science, technology, and nutrition knowledge.

As in most organizations, the beginning years were the most crucial in forming a solid base and in determining the directions to be taken. The American Dietetic Association (ADA) was no different. It was faced with establishing its right to exist. Mary deGarmo Bryan, ADA president from 1920 to 1922, provided words of encouragemnt and direction to the dietitians:

> We are a large band of professional women, well organized, with a capacity for making definite contributions to the field of work for which we are trained . . . with all of us working together . . . each year can be

> one of constructive work toward the realization of the possibilities of the A.D.A. (Barber, 1959, pp. 29-30).

The early consulting dietitians took these words of encouragement to heart and began helping all segments of society with their knowledge and training. In 1918, dietitians were sent overseas to assist the armed forces in the proper and nutritional preparation of food. Dietitians also established themselves in civilian hospitals as well as in U.S. Army hospitals by 1919 (Barber, 1959). The president of the ADA was called upon in 1941 to utilize her expertise in Washington, D.C. for advising the U.S. Army's food program. Dietitians, or nutritionists, gained acceptance as members of public health departments by the American Red Cross in 1948 (Barber, 1959).

The need for consultant dietitians greatly increased due to crucial circumstances in the early 1950's, when the majority of hospitals (59%) were then primarily located in small towns of less than 5,000 population (Barber, 1959). Many of these hospitals were unable to afford trained, full-time dietitians. In 1955, the ADA and the American Hospital Association (AHA) collaborated in sponsoring a program that would provide the service of shared dietitians to these small hospitals.

As dietitians move into cosmopolitan areas, they recognized their need to further their education and training as additional knowledge and technical skills were expected of them. The main purpose of continuing education is to provide the dietitian with the best methods of problem solving available through psychology and education (Kirk, 1959). The ADA recognized that self-improvement was necessary for its

members. Thus, it broadened its membership requirements to encompass the growing demands of society (Smith, 1959).

In the 1930's, the federal government became involved in the area of human services, due to the effects of the Depression. Congress increased the need for the consultant dietitian with the passage of Public Law 89-97, which legally mandated and recognized the consultant dietitian's services in group facilities. Sessions of the 1971 White House Conference on Aging dealt with the development and recommendation of policies to immediately provide means of improvement of the quality of life for older people. The Conference recognized that a large number of elderly people live a deprived and isolated life in their homes because the assistance is not available to them. This included nutritional assistance that only the consultant dietitian can adequately provide (Matthewson, 1973).

Thus, long-term care was defined to involve both inpatient care and care in the homes of people. Recommendations were also made by the Committee to have long-run institutional care programs federalized; that is, to fund the program from federal general tax revenues. Congress supported these recommendations with Public Law 92-603, which requires conformance to professional standards (including dietetics) by those long-term care programs that were federalized (U.S. Statutes at Large, 1972).

An alarming report was disclosed in 1975 by the U.S. Senate Subcommittee on Long Term Care (1975). It was found through the Department of Health, Education, and Welfare's (HEW) study of 75 nursing homes, that many of the patients were taking from 7 to 12 drugs daily. Some patients received both psychotropic uppers and

downers at the same time. Also, one-third of the patients being treated for diabetes mellitus had no diagnosis of diabetes on their chart. Many had not had a fasting blood/sugar test in more than a year. Finally, there were no nursing care plans with respect to diets and fluids for 19 percent of the patients. In an Oklahoma study which focused on Oklahoma City area nursing homes, a range of 0 to 22 drugs was reported for patients at that time, while the mean drugs taken daily per patient was 6.4 (Barker, 1977).

These findings reflected the need for the expertise of the consultant dietitian in all types of health care facilities, both inpatient and outpatient. The benefits of modern medicine can be more fully experienced with the guidance of the dietitian in selecting proper nutritional diets. It seemed tragic to waste millions of dollars solely on medical care while ignoring the good to be gained by qualified dietetic care.

Although many of the nursing homes were having problems providing proper dietetic care to their patients, it was found in a long term care facility improvement study of the U.S. Department of HEW in 1975 that 90 percent of the skilled nursing homes received some consultation or supervision from a qualified dietitian (U.S. Department of HEW, 1975). This percentage still leaves room for the increase of the role of the consultant dietitian. Information provided by the nutritionist team member revealed in this study that the quality of dietetic service provided by the facility related to the amount of time spent by the dietitian in the facility. It is not surprising, considering the limited amount of time spent by the dietitian, that they were more likely to provide assistance with policy development and inservice

education for dietetic service employees than to provide the more time consuming responsibilities of continuing collaboration with medical and nursing staff and counseling of patients.

It is evident from these reports that society and the medical field specifically has a need and demand for consultant dietitians. Many feel that the dietitians of the future will be mainly consultants (Johnson, 1974).

The ADA Manpower Study was conducted to project the demand for dietetic services by various employer groups in 1985 and in 1990 (Fitz and Baldyga, 1983). The study revealed that the changes in the utilization and payment for health care services will create a demand and growth for consultant dietitians in other health care facilities such as: ambulatory clinics, health maintenance organizations (HMO), and home health care.

An HMO is a prepaid medical care program which provides services for regular checkups, eye examinations, and laboratory tests. A monthly insurance cost is the usual procedure in this plan. In return, the HMO will guarantee to provide all services written on the contract, excluding large deductibles and patient payments. HMOs are of two basic types: (1) individual practice associations and (2) group practice plans. The individual associations offer services at the private offices of professionals such as: physician services, outpatient services, inpatient hospital services, medically necessary emergency services, diagnostic laboratory and therapeutic radiological services, and home health and preventative health services; while the group plan provides these services at a centrally located facility.

Both types can assist families and elderly people in receiving pro-professional nutritional care from consultant dietitians.

Growth was projected by Fitz and Baldyga (1983) for the development of private practice nutrition care services. "Overall, the demand for the self-employed/consultant group is seen as rising at a substantial rate. . . ." (Fitz and Baldyga, 1983, p. 188).

Role of the Consultant

The consultant dietitian has been defined as:

> A registered dietitian with a minimum of four years' recent clinical experience with at least one year of clinical work within the past three years with responsibility for assisting the physician in nutritional assessment of the patient and in recommending modifications of diet indicated (Scialabba, 1982, p. 68).

A mere definition is not adequate in establishing the standards for the professional consultant dietitian. Thus, ADA conducted a role delineation for the community dietitian, which includes consultants in health care. A role delineation involves identifying responsibilities and supporting skill and knowledge components which the dietitian demonstrates while delivering quality services (Baird, 1981).

The ADA supported the view that every individual in a group care facility has the right to proper nutritional care and quality foodservice (ADA, 1975). In this paper, three main functions for the consultant dietitian were presented:

> (a) Evaluating and making recommendations regarding kitchen design, menu preparation and implementation, budget planning, staff competency and adequacy.
>
> (b) Interpreting and/or suggesting adjustments of physician's dietary order; initial and continued assessment

as needed, of individual residents or patients; integration of recommendations in the total care plan; nutritional counseling; and discharge planning.

(c) Providing staff education, participation in appropriate facility committees and conferences, promotion of good nutritional practices, and writing reports on current status of goals (ADA, 1975, p. 579).

In 1981, the ADA presented a Position Paper on Recommended Salaries and Employment Practices for members. The paper listed 14 responsibilities for the consultant dietitian:

1. Evaluates and monitors foodservice systems, making recommendations for a conformance level that will provide nutritionally adequate quality food.

2. Develops budget proposals and recommends procedures for cost controls.

3. Plans, organizes, and conducts orientation and in-service educational programs for foodservice personnel.

4. Plans layout design and determines equipment requireents for new or renovated foodservice facilities.

5. Recommends and monitors standards for sanitation, safety, and security in foodservice.

6. Develops menu patterns.

7. Assesses, develops, implements, and evaluates nutritional care plans and provides follow-up, including written reports.

8. Consults and counsels with clients regarding selection and procurement of food to meet optimal nutrition.

9. Develops, maintains, and uses pertinent record systems related to the needs of the organization and to the consultant dietitian.

10. Develops, uses, and evaluates educational materials related to services provided.

11. Consults with the health care team concerning the nutritional care of clients.

12. Provides guidances and evaluation of the job performance of dietetic personnel.

13. Interprets, evaluates, and utilizes pertinent current research relating to nutritional care.

14. Maintains effective verbal and written communications and public relations, inter- and intradepartmentally (ADA, 1981b, p. 471).

The consultant dietitian has been described as a "critical link" in the assurance of the availability of new concepts of dietary care for long-term care facilities (Lanz, 1983). A technical expert, adviser, teacher, and liason are roles the consultant fills in different settings. The skills of the consultant provide not only quality nutritional care, but also effective interdepartmental and intradepartmental communication with the medical staff, nursing service, foodservice supervisor, clients/patients, and significant others (Lanz, 1983).

Consultation can be described as a professional contractual agreement concerning a work-related problem between two or more people. The consultant is utilized to provide help from his/her specialized competencies to the other party. Both short term and long range goals are entwined with the agreement. Initially, the recipient needs recommendations for the solution of the problem. The long range goal is for the consultant to somehow convey or leave part of his/her knowledge with the recipient for future use by the recipient (Lanz, 1983).

The consultant is not seen as the director of the facility, nor does he/she assume management responsibilities. Consultants are assistants to the administration and foodservice supervisor of a facility to maintain proper nutritional care for clients/patients, proper foodservice standards, and quality management procedures (Lanz,

1983). Montag (1969) described the consultant's role of rendering advice and service as a "staff" function. In contrast, a full-time dietitian's role to plan, direct, and control foodservice or nutrition service can be described as a "line" function. Montag and Emerson (1971) further characterized the "staff" function of a consultant dietitian as one with time restraint and lack of jurisdiction in implementing programs and modifying faciltiy procedures. Smith (1982) believed that the dietitians of today will shape the role of dietitians in the future:

> The role of the dietitian will ultimately be defined by the way the profession responds to the challenge presented by the enormous opportunities in the field of nutrition today. Or it will be defined by default--the role that is left over after others who recognize the opportunities have responded (p. 650).

The public is interested in nutrition education concerning protective health care concept and long lives. The medical profession is realizing that proper nutritional care is needed in cooperation with medical care. Long-term care facilities and nursing homes recognize the need for trained dietitians in rendering quality care to their patients and clients. The media has even opened its doors to nutritional advice for its viewers through special nutrition programs. Dietitians have expanded their own range of practice through the following ways: (1) by evaluating and assessing their skills and knowledge to identify needed changes, (2) by defining obstacles to change (3) by establishing goals for themselves and their profession, and (4) by developing strategies to meet these changes and goals (Calvert, Parish, and Oliver, 1982). All the nutrition areas of human need and knowledge can and must be filled by the registered dietitian,

and specifically the consultant dietitian, before some other nutritional expert emerges.

Issues Facing the Consultant

As with any profession, the consultant must answer to issues and problems that arise in his/her specialized field. Issues include: quality of work life, quality assurance, continuing education, and licensure.

Quality of work life has been defined as: "Individual affective responses to working in a system" (Ebro, 1983). Quality of work life has been measured in the following ways: training development; benefits; job satisfaction; motivation; social reference of work life; absenteeism; turnover; mental well being; availability of new employees; safe, healthy, working conditions (OSHA); and organizational climate.

Numerous studies have been undertaken to assess the key elements of job satisfacton among employees. Stone, Vaden and Vaden (1981) found that dietitians with higher degrees than a bachelor's degree believed a professional challenge to be an important indicator of their career motivation and satisfaction. Many felt that they were not being challenged appropriately and sufficiently by their present employers. This could be a result of stereotyping dietitians into certain roles and functions. Employers may not take into account the advanced education and variety of skills that the dietitian possesses. The autonomy that the consultant holds may be the leverage needed to broaden career opportunities and create challenges for all dietitians.

A career challenge appears to be the only factor identified thus far to significantly affect the job satisfaction of consultants. In 1982, Johnson reported that no significant differences were found between job satisfaction scores and any of the job-related variables used.

Quality of work life is also influenced by fringe benefits. Employer-paid fringe benefits are received from the job other than salary, wages, compensation, or commission. Benefits include: medical and dental coverage, educational benefits, scholarships, meals and lodging for employees, van pools for commuting, group legal insurance, day care for dependents, contributions to pension plans, life insurance, and death benefits. The shrewd and business-minded dietitian will seriously and conservatively analyze his/her fringe benefits. It is important to receive a reasonable and adequate exchange for his/her expertise.

Motivation for the consultant dietitian can be affected by his/her ability to adapt to various facilities and situations. Kirton (1978) notes that companies prefer management who seem to adapt rather than innovate. By adapting, one arrives at solutions within the current policies instead of innovation, which implies radical or anti- "current logic" solutions. Bureaucracies who tend to be very methodical and precise also expect employees to react in accordance with the company's goals and objectives. It is evident that adaptors and innovators are needed by organizations for the survival and versatility of the institution (Kirton, 1978).

Consultants, who are described as taking shortcuts to corporate achievement, face the balance of frustrations and rewards in the

selection of their employment (Franklin, 1981). Frustrations for the consultant include: failure of clients to follow through with the consultant's recommendationsk or perhaps the follow through did not result in desired changes due to other events.

Thompson (1981) suggested two keys for successful consultation: (1) commencing with a modest project producing noticeable results in a short period of time, and (2) using this project to accomplish the objective of supporting the client's performance improvement while assisting in achieving results. These two key principles--short term success and client development--are the basis for consulting for results which may become more dominant in the 1980's when consumers demand more visible results for their investments (Thompson, 1981). Turner (1982) also discusses effective consulting and noted that consulting is a process encompassing commitment, learning, and future effectiveness.

Rewards for the consultant far outweigh the frustrations. The consultant dietitian is able to use creativity and problem solving skills to cope with the problems of the environment. Being one's own boss, autonomy, gives the consultant the privilege to accept or reject accounts and work at his/her convenience. Raffel (1982) stated that often a company hires a consultant because it is cost effective to rent the consultant's expertise. The variety of facilities a consultant works in provides many methods and ideas to assimilate into her existing knowledge. An altruistic consultant receives both psychic income and money income (Becker, 1981). The altruism of consultants can be seen in those who charge below-market prices for their services.

From job satisfaction to fringe benefits, to frustrations and rewards, the consultant dietitian is faced with the dilemma of weighing the forces of his/her career. He/she can have a quality career if he/she will use his/her expertise leverage in establishing favorable conditions for consulting.

Another issue facing the consultant dietitian is quality assurance, which involves assessment and evaluation to improve health care outcomes. Quality assurance has been and continues to be an important consideration and thrust of the ADA since its founding. Stringent academic, accreditation, and credentialing programs of the ADA support this aspect (ADA, 1982). Quality assurance requires an examination of one's values, the assessment process, and, ultimately, the quality of health care in relation to established standards. Self-assessment has been described as identifying individual strengths and weaknesses (Adamov, 1982). It helps improve dietetic practice through constant evaluation and subsequent upgrading of skills. There should be a self-directed study to improve areas of weakness.

The consultant is responsible for affecting improvement of the foodservice in the facility he/she serves. This is accomplished through effective communication with the administration, foodservice supervisors, and other departments of the organization. The clinical and administrative aspects of dietetics are joined by two links or communication channels: food, which is their speciality; and the universality of management, because successful dietitians are also successful managers (Zallen, 1983).

> Management is the coordination of available resources for decision-making to achieve specified goals. . . .

> The dietitian recognizes that one of his most important resources is himself" (ADA, 1969, p. 91).

Quality care given to a facility by the dietitian is affected by the time the consultant spends in that facility. Quality assurance can be monitored by audits, peer review, and the previously mentioned method of self-assessment (Adamov, 1982). An audit is a form of evaluation having characteristics of purpose, critique, procedures, and personnel. The audit can provide a basis for dietetic accountability by assessing the outcome of effects of nutritional care of patients (Schiller and Behm, 1979). A peer review committee assists the dietitian in providing adequate care:

> . . . the ethics of a profession establish its credibility as far as the public is concerned and ultimately may be the deciding factor as to whether the recipient will continue to accept the services of that profession's practitioners . . . (Winterfeldt, 1973, p. 47).

Quality assurance also consists of building a hierarchy of goals and purposes so consultants and managers may work toward mutual interests. Turner (1982) listed and explained five traditional goals of the consultant and three additional purposes.

The consultant is initially called upon to provide information of his/her knowledge of dietetics to those who lack his/her training and skill. "The dietitian is a specialist educated for a profession responsible for the nutritional care of individuals and groups" (ADA, 1969, p. 91). The information needed by clients ranges from general to specific dietetics. Solving immediate problems of an organization is the second purpose for the consultant dietitian. His/her expertise gives her the ability to adequately assess the problem and arrive at a solution. A third goal of the consultant is to provide effective

diagnosis of situations that may arise or have already arisen within the organization. The consultant locates problem areas and works out solutions before organizational suffering occurs. Recommending actions for improvement and correction of problems is yet another way the consultant assists organizations. The creative and problem solving skills of the consultant enables him/her to formulate effective solutions. A final traditional purpose of consultant dietitians is to implement the changes which he/she presented to the administration. The consultant oversees the changes made and evaluates their success. These are similar to plans of organizational development. Beckhard (as cited in Plovnick, 1982) of MIT defines organizational development as:

> An effort: (1) planned, (2) organization-wide, and (3) managed from the top, to (4) increase organization effectiveness and health through (5) planned interventions in the organization's 'processes,' using behavioral-science knowledge (Plovnick, 1982, p. 8).

Turner (1982) not only believed organizations established the five traditional goals for implementing organizational development, but that they also provided three additional goals for consultants. One purpose is to build consensus and commitment among the organization's departments. The consultant can provide quality assurance by uniting departments to work together for better health care of the patient/client. The consultant is also a teacher who facilitates the learning of clients. As the expert in his/her field, the consultant dietitian is able to transfer some of his/her knowledge to the client or patient in order for that person to continue proper nutritional care of themselves and their families. The consultant further assists the organization by promoting organizational effectiveness, which is

the ". . . ability to adapt future strategy and behavior to environmental change and to optimize the contribution of the organization's human resources" (Turner, 1982, p. 128).

> Organization development is a process of behavioral science technology, research and theory. More specifically, for an intervention in an organization to be organization development, it must (1) respond to a felt need on the part of the client, (2) involve directly and collaboratively the client in the planning and implementing of the intervention, and (3) lead to change in the organization's culture (Plovnick, Fry, and Burke, 1982, p. 8).

This reflects the trend in modern business organization where the consultant intervenes as the change agent (Plovnick, Fry, and Burke, 1982). These additional goals are in no way substitutes for the traditional purposes. They are, hopefully, the outcome of any effective consultant.

Establishing goals and purposes is seen as part of the overall picture of quality assurance. It is a way to improve health care outcomes. The Long Term Care Facility Improvement Study of the U.S. Department of HEW (1975) reported a positive correlation between a patient's menu being planned in writing and the nutritional adequacy of his/her meals; also, between written menu and the accuracy in preparing and serving the meal as ordered. This information provides the conclusion that quality assurance is a planned effort to make a positive difference.

"Knowing how and where energy is used in a foodservice operation is a prerequisite for establishment of controls" (Romanelli, 1979, p. 77). The cost and availability of energy resources affect the cost of foodservice operations. Managers in foodservice systems need to know the energy consumption and costs associated with preparation of

various food products using various types of equipment. In a study performed in U.S. Army hospitals containing 100-550 beds, four food preparation techniques were researched to operate the hospital foodservice more efficiently. These four concepts of conventional, convenience, cook-chill, and frozen ready, should be combined for more efficient, cost-saving hospital foodservice. Findings indicated that advanced preparation reduced labor and food cost, but these reductions must be compared with costs of additional equipment, energy, and space required by equipment intensive systems to determine whether there is an advantage for a particular mode of operation (Hertz and Souder, 1979).

With new discoveries and developments in the field of nutrition, the demands for continuing education were evident to the members of the ADA. In 1969, continuing education participation became a mandatory requirement for registered dietitians (Del Vescovo, 1982). Continuing education is defined as that which follows the basic preparation for the profession of dietetics and that it is a lifelong process with the following objectives:

1. To enhance the knowledge of the individual member, thereby improving his/her competency.

2. To enable the individual member to contribute to the advancement of the profession of dietetics (ADA, 1974).

This is summarized by Chernoff (1983, p. 649): "Continuing education must be a continuing effort because the problems it addresses do not remain the same." The ultimate aim of continuing professional education is to improve the performance of professionals.

The ADA shares this responsibility with its members. Continuing education programs and products are conceived, defined, developed, promoted, managed, and evaluated by the Department of Meetings and Continuing Education (Del Vescovo, 1982). The consultant dietitian is able to recognize his/her professional goals through her self-development and intellectual stimulation provided by continuing education.

The dietitian benefits him/herself, clients, and the profession through continuing education.

> As a profession, we should be looking at our educational goals and our training program to develop these character traits (self-awareness, commitment, creativity, confidence, and a high degree of security) in our young dietitians. It is time to plant the seeds of self-assessment in our practice and to reinforce it through our continuing education (Adamov, 1982, p. 62).

The consultant dietitian has a dual purpose in continuing education. He/she must be a generalist who knows of recent developments in all areas of nutrition, health, science, and psychology. This is not only met through a variety of courses, but also through reading professional literature from all walks of life. A consultant must also be a specialist in his/her particular area of knowledge. What use is he/she to the employer if he/she has only broad common knowledge? This will require considerable time devoted to the study and reading of professional literature relevant to his/her focus.

Marshall (1971) wrote about a general framework which suggested that the individual professional workers must be more aware of his/her educational stance. Theory versus practice were two separate yet interdependent aspects of education. In the day-to-day world of making judgments and trying to accomplish one's educational tasks,

certain discontinuities are to be expected; however, the more congruence there is between one's philosophical and operational bases, the more likely it is that one will accomplish what one wishes to accomplish. Education, by definition, implies change (Marshall, 1971). Nutrition education is certainly one of the most significant issues of our time.

The need for knowledge and skills multiply daily in all areas of human life. The consultant dietitian must maintain knowledge and expertise. Planned continuing education is the only way to assure professional status and future employment. Continuing education is described as self-help, self renewal, professional advancement, or self improvement (Halleran, 1976).

A final and recent issue facing the consultant is licensure. Licensure protects the title and practice of the dietitian as defined in the scope of the law. Those licensed in a state are the only ones allowed to practice dietetics and use the title. Some states, however, seek licensure of the term "dietitian" through voluntary title acts rather than scope of practice. The Oklahoma Dietetic Association (1984) proposed the following statement to their state legislature:

> We seek licensure of our title (dietitian) rather than our scope of practice. This is because practice varies across a wide spectrum. We envision licensure of dietitians to be based on education and experience qualifications like those required to become a Registered Dietitian (Oklahoma Dietetic Association, 1984, p. 1).

The purpose of this licensure law is to protect the health and safety of the public by assuring professional competence of the practitioners (Ohio Dietetics Association Newsletter, 1983). These laws prohibit persons who are unlicensed from performing the scope of

practice limited to the licensed. It is a way to protect those dietitians who have met the requirements of the ADA from having their profession misrepresented to the public and other professions solely because an unregistered dietitian claims to be a nutrition specialist.

The Ohio Dietetic Association believes that licensure will not only protect the public but may make it easier to: (1) secure third-party reimbursement for nutritional care, (2) get dietitians written into federal and state legislation, and (3) get licensed dietitians/nutritionists written into state health agency job descriptions, which currently do not recognize national certification (R.D.) (Ohio Dietetic Association Newsletter, 1983).

California was the first state to achieve entitlement (mandatory), while Texas was the first to enact the voluntary licensure act in June of 1983 (ADA, 1983). Several other states are currently pursuing legislative action. Ohio and Oklahoma are included in these ranks. Oklahoma dietitians are taking an active interest in a voluntary licensure bill (H.B. 1821). Sponsored by Representative David Riggs and Senator John Clifton, the bill successfully passed the House and Senate, with some amendments. The bill will then become law with the Governor's signature, effective November, 1984 (Stadler, 1984).

Related Research to Role Functions and Continuing Education Needs of Consultants

This section includes studies which are related to the role functions and continuing education needs of consultant dietitians. Eighteen Albany, New York consultant dietitians were interviewed to

identify the actions, functions, and continuing education needs of these professionals in nursing homes and health care facilities (Brenner, 1971). Findings of Brenner's study noted that many tasks in larger facilities currently performed by dietitians are equally well performed by support personnel who are guided by the consultant dietitian's direction. Consultants reported three areas which occupy a large percentage of their time. These include: therapeutics, menu planning, and education. Half of the dietitians operating in the line functional capacity for the menu planning and therapeutics activities might be delegated to the trained foodservice supervisor. Continuing education needs indicated by the Albany, New York, consultant dietitians were: geriatric nutrition, personnel administration, and adult education.

The Delphi technique utilizes a process which derives and clarifies group judgments through systematic questioning of the opinions of knowledgeable individuals on the subject(s). Smith (1975) used this technique of three rounds of mailed questionnaires. In essence, this forecasting Delphi technique achieves communication and cooperation between the groups questioned. Forty-two consultant dietitians in Tennessee and 100 administrators formed the expert panels to investigate the future responsibilities, along with education and training needs of consultant dietitians. Future educational needs were seen as: management science; personnel management; verbal and written communications; safety and sanitation; and equipment, layout, and design. The writing of menus and menu planning were the primary activities performed. Smith's study also forecast the responsibilities for

consultant dietitians to remain unchanged over the next 10 years. Training personnel and nutrition care plans were seen as important.

Spear (1978) surveyed 252 consultant dietitians in nursing homes and their corresponding administrators in 12 north central region states. These 12 states were: North and South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Illinois, Wisconsin, Michigan, Indiana, and Ohio. The purposes for the study were to compare and contrast education, experience, find major problem areas, and critique activities and responsibilities of consultants in comparison to the foodservice supervision and administration of the facility.

Some major differences in the perceptions of problem areas between consultant and administrator were delineated. Administrators listed personnel, selection, training and attitude, operational costs of department, and equipment storage and adequacy as problem areas. In contrast, dietitians listed as problem areas: menu planning, diet modifications, organization and management, and education and training. Activities which occurred on every visit included: resident visitaton and diet consultation, nutritional assessment, communication with other departments, checking foodservice, and sanitation procedures. Activities of least importance when rated by consultants were: food purchasing, food preparation, maintaining records and reports, and hiring and firing of personnel. Important contributions made by consultants (independent of foodservice supervisors) as rated by administrators were: therapeutic diets, menus, sanitation, and inter- and intra-departmental communications. Personnel employment activities and development and maintenance of records and reports were

tasks that were frequently not the responsibility of either the consultant or the foodservice supervisor (Spear, 1978).

A study of role functions of dietitians employed in New York nursing homes was completed by Gilbride (1981). Forty specific role functions helped to determine the role consensus within and among groups of part-time (125 consultant dietitians), 200 full-time dietitians, and 210 nursing home administrators. The study also included role performance for the two types of dietitians, and time allocation for six selected role segments. Three different questionnaires were sent to the three groups mentioned.

Results noted role perception differences for the full-time dietitian and the consultant. Consultants' work was characterized as autonomous, while full-time dietitians worked more closely with others, denoting a line and staff difference. (See section containing issues facing the consultant.) High consensus on two role functions was noted for general monitoring of nutrition care and identifying residents at risk. Allocation of time on the six selected role segments for the consultant were as follows: nutritional assessment (31%), communication (20%), diet therapy (16%), organization and management (13%), education (10%), and interpretation (10%). Gilbride (1981) also recommended courses in administrative leadership and cost controls for the dietitian interested in nursing home positions. Increasingly important for the 1980's will be management of people, time, money, food, and energy resources.

Direct assessment of the continuing education needs of dietitians in practice as opposed to only the use of role analysis was discussed by Vanderveen (1976) Ohio dietitians in her study listed personnel

administration, adult education, geriatric nutrition, and equipment layout and design as needs in continuing education. Vanderveen also noted cost and time as important factors, along with the policy and practices question of whether the employer will pay for the costs of education. Some health care institutions were supporting dietitians' participation in professionally beneficial activities. These dietitians would hopefully encourage sustained support for continuing education by indicating its importance through active communication and maintenance of high quality nutritional care. Perhaps this importance to nutritional care might be measured via improved patient care.

Another area into which dietetics has expanded is the field of computers. Computers serve many functions for the consultant dietitian. They are used in nutritional teaching of elderly and mothers-to-be; research; management information systems in hospitals; and calculation of diets for patients/clients in health care facilities, athletes, and caterers (Gamble, Gentry, and Kipps, 1980). The Massachusetts General Hospital has used a computer-based management information system and has proved it to be an effective system to better coordinate the maintenance activities of the hospital (Tanverdi and Clemons, 1979). A computer-managed instruction system was also seen as a positive method for dietetic education (Argo, Watson, and Lee, 1981).

Dietetic or nutrition education, either taught by dietitians or through computer-assisted instruction (CAI), is important to many people (such as the elderly) who need the proper information to adequately take care of their bodies. Those who are concerned with nutrition education experience many problems, the two major ones

being: how to present nutritional information in a manner that will motivate people to achieve adequate nutrition through adapting good food habits, and how to utilize the existing educational systems to spread nutritional information to all segments of society (Sipple, 1971). The major difficulty in dealing with nutrition education that intensifies the other problems is that many people have false information about nutrition.

Research related to consulting is beginning to increase, such as the possible use of computers in consulting. But there is still a limited amount of research concerning the consultant dietitian specifically. For instance, in the mentioned studies regarding the consultant, there are differences found in their results. Some trends exist that need to be researched. The dietitians seem to be placing a greater emphasis on quality care, nutritional assessment, and business management. The literature supports this notion by distinguishing the differences between line and staff positions. This gives the consultant the autonomy he/she needs to fully use his/her skills and knowledge. Since Vanderveen's study in 1976, some research has been directed towards assessing continuing education needs of consultants instead of developing them solely from role analysis (Vanderveen and Hubbard, 1979; Faye, 1982). Several continuing education issues that need further assessment include: equipment layout and design, adult education, geriatric nutrition, and personnel administration.

CHAPTER III

METHOD

There is an increasing need for consultant dietitians as the population continues to expand and to recognize the importance of preventative health care. This research, therefore, was conducted to discover the role functions (activities, responsibilies, or duties) and the continuing education needs and issues of concerns of Ohio consultant dietitians in health care facilities. This chapter includes the research design; sample; data collection, which includes planning and development, instrumentation, and survey procedure; and data analysis used in this study.

Research Design

The research design used in this investigation was the descriptive status survey. The purpose of descriptive research is ". . . to describe things the way they are, rather than to investigate a cause-and-effect relationship" (Huck, Cormier, and Bounds, 1974, p. 18).

> Descriptive surveys systematically describe a situation, an area of interest, a series of events, opinions, attitudes or other variable or set of variables in a factual or accurate manner (Joseph and Joseph, 1979, p. 18).

Sample

The 153 Consultant Dietitians in Health Care Facilities (CD-HCF)

in Ohio as of January 1, 1983, as provided by the Ohio Dietetic Association, comprised the invited sample in this investigation. Inferences drawn from the data can only be generalized to this group of consultant dietitians.

Data Collection

Planning and Development

The planning and development of the research was done during the Spring, Summer, and Fall semesters of 1983. The president of the Ohio Dietetic Association was contacted on March 25, 1983 (Appendix A). Data collection procedures were determined and data analysis techniques appropriate to examine the research objectives were selected.

Instrumentation

The research instrument was an eight page questionnaire adapted from Faye (1982), Brenner (1971), Smith (1975) Vanderveen (1976), and Spear (1978) with updated additions; and consisted of multiple choice questions, checklists, and short answers. The questionnaire was divided into three sections. The first section concentrated on general demographic information. The second section concentrated on role functions (activities, responsibilities, or duties) performed by the consultant dietitian and/or the foodservice supervisor. Continuing education needs and issues of concern comprised the third section. Participants were also asked to explain the responses or offer comments to certain questions (Appendix B).

An expert panel made up of three Ohio consultants and three graduate faculty members at Oklahoma State University (Food, Nutrition and Institution Administration and Statistics Departments) were chosen to examine the questionnaire for content validity, clarity, and format. Suggestions given by the expert panel were incorporated into the final draft which was printed on ivory paper. A letter of endorsement by the Ohio CD-HCF president accompanied the cover letter from the researcher to explain the survey (Appendix B). The questionnaire was designed to facilitate refolding, stapling, and returning of the instrument to the researcher. Postage, in the form of stamps affixed to the questionnaires, was provided for the respondents to return the completed questionnaires.

Survey Procedure

The questionnaires were mailed to the 153 members of the Ohio Dietetic Association-Consultant Dietitians in Health Care Facilities on November 7, 1983. The respondents were asked to return the questionnaires on or before November 21, 1983. A handwritten follow-up letter, plus another first page of the survey was sent to respondents who returned the questionnaires without the first page. Stamps affixed to the surveys were also provided for the respondents to return the missing first page.

Data Analysis

Collected data were coded and transcribed onto computer worksheets, then entered directly into an IBM terminal (Series 3101 20) using the time sharing option (TSO). This interaction system provided

the user direct access to the mainframe computer (IBM 3081D). Appropriate programs were selected to analyze the five datasets created using the Statistical Analysis System (SAS) (Helwig, 1979). Standard statistical procedures including t-Test, Analysis of Variance (ANOVA), and Chi Square were used to analyze the data (Steel and Torrie, 1980).

CHAPTER IV

RESULTS AND DISCUSSION

This study assessed the variety of activities, responsibilities, or duties (role functions) of Ohio consultant dietitians in health care facilities, and sought to determine their perceived continuing education needs. An eight page questionnaire containing 74 functional activities and 47 continuing education concerns, along with relevant demographic information, was developed and adapted from similar studies described in Chapter II.

The sample was composed of registered dietitians who were members of the Consultant Dietitians in Health Care Facilities (CD-HCF) affiliated with the American and Ohio Dietetic Association as a Dietetic Practice Group. Copies of the research instrument were sent to 153 consultant dietitians in Ohio, and 64 completed questionnaires were returned (42%). Data from 60 of the responses (40%) were analyzed. Four other returned questionnaires were unusable for the following reasons: dietitians no longer practiced in Ohio, had changed positions, retired, or returned to full-time employment other than consultation work. A second mailing of the complete questionnaires was not sent to non-respondents, due to financial restrictions.

This chapter delineates the general characteristics of the respondents, their professional practices, and their work environment. In addition, an analysis is given of their role functions and

perceived continuing education needs. Finally, data analysis necessary to test the null hypotheses are presented.

Characteristics of the Respondents

Participants in this survey were 100 percent female. Their ages ranged from 20 to over 70 years. Age groupings of the respondents were collapsed into two categories. The 20-49 year old respondents were 54.5 percent (n=30) of the sample, while the 49-70 year old respondents were 45.5 percent (n=24). Six respondents did not indicate their age category. In contrast, Faye (1982) reported that the majority of consultant dietitians in Oklahoma (81%) were in the age category of 30-59 years.

The percentage of respondents holding the bachelor's degree was 72.73 percent (n=40), the master's degree was 25 percent (n=14), and only one dietitian had completed a doctoral degree. The distribution in the Oklahoma study was similar. Approximately 70 percent held bachelor's degrees, while nearly one-third held advanced degrees.

Characteristics of Professional Practice and the Consultant Work Environment

Three-quarters of the respondents graduated with a Foods and Nutrition degree (n=43), while five percent each reported that their major was Allied Health Science-Education and Home Economics-Business. The balance of the respondents (one to two persons each) fell into the following categories: Coordinated Undergraduate Program (CUP)-Medical Dietetics, Nutrition Education, Home Economics-Biology, Public Health Nutrition, and Institution Management.

Work Experience

The respondents' total number of years of experience for full-time consulting were 0 to 7 years with a mean of 0.84 year, while part-time consultant experience ranged from 0-20 years with a mean of 6.45 years. Full-time "other dietetic experience" ranged from 0-30 with a mean of 5.83. Part-time "other dietetic experience" had a mean of 1.02 with a range of 0-11 years. In comparing the means, it was found that the Oklahoma consultants had more experience, overall, than the Ohio consultants (Faye, 1982). The Oklahoma full-time consultant experience was 8.13 (n=8), part-time consultant experience was 7.57, full-time "other dietetic practice" was 8.18 years, and part-time "other dietetic" was 7.64 years (Table I).

Employment Status

Only 57 respondents indicated their current employment status. Of these, 51 percent (n=29) indicated that they were employed less than half time, 28 percent (n=16) indicated full-time (35 hours or more) work status, while 21 percent (n=12) were employed half-time or more but less than full-time. In contrast, the majority of Oklahoma consultants (43%) were employed less than half-time, 40 percent were employed half-time or more but less than full-time, only 7 percent were working full-time, and 10 percent worked as consultants as a second occupation (Figure 1).

Work Arrangement

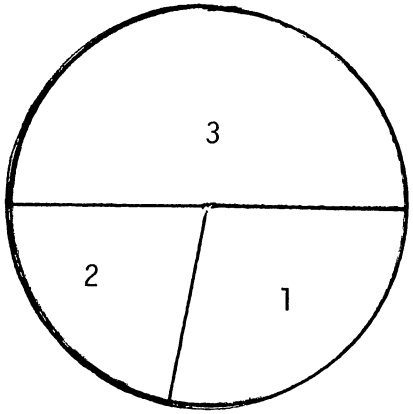
The majority (n=44) of the respondents described their work

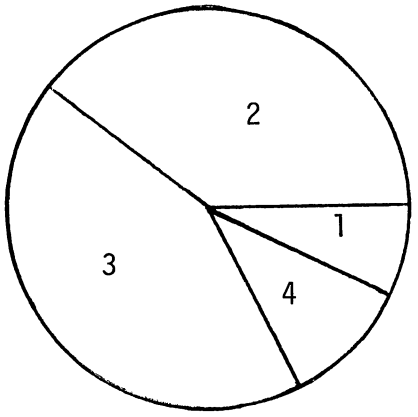
TABLE I

CONSULTANT EXPERIENCE IN YEARS

Type of Experience	n		Range		Sum		Mean		Standard Deviation	
	OH	OK	OH	OK	OH	OK	OH	OK	OH	OK
Full-time consultant*	57	8	0-7	3-16	48	65	0.84	8.13	1.78	4.61
Part-time consultant	51	36	0-20	5-20	329	272.7	6.45	7.57	5.53	4.50
Full-time "other" dietetic	52	28	0-30	2-26	303	229	5.83	8.18	7.13	7.67
Part-time "other" dietetic	56	7	0-11	15-25	57	53.5	1.02	7.64	2.62	4.82

*Full-time equals 35 hours per week or more.

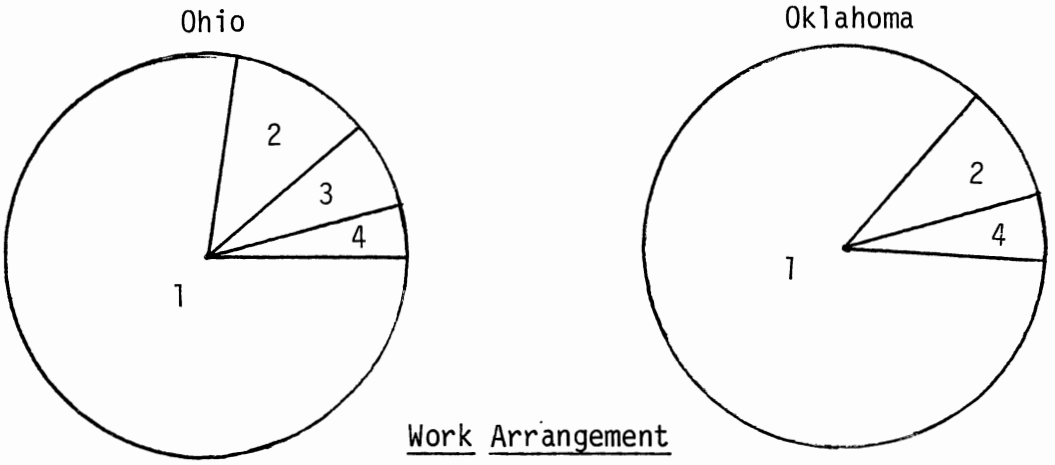




Employment Status	Ohio (n=57)	Oklahoma (n=42)
1. Full-time	28 (n=16)	7 (n=3)
2. Half-time or more, but less than full-time	21 (n=12)	40 (n=17)
3. Less than half-time	51 (n=29)	43 (n=18)
4. Second occupation	0	10 (n=4)
	100%	100%

Figure 1. Employment Status

arrangement as an independent practice (78%), 11 percent (n=6) indicated "other" arrangement, 7 percent of the respondents (n=4) were corporate dietitians, and 4 percent were engaged in a partnership or group work arrangement. The percentages were fairly similar for Oklahoma consultants; however, no corporate dietitians were reported in Oklahoma. This probably reflects Ohio's industrialized work environment (Figure 2). In an analysis of the 2,133 ADA CD-HCF members in 1983, it was found that 60 percent were in private practice for 10 or fewer hours a week, while only 15 percent were engaged in private practice for 31 hours or more (Baldyga, 1983).



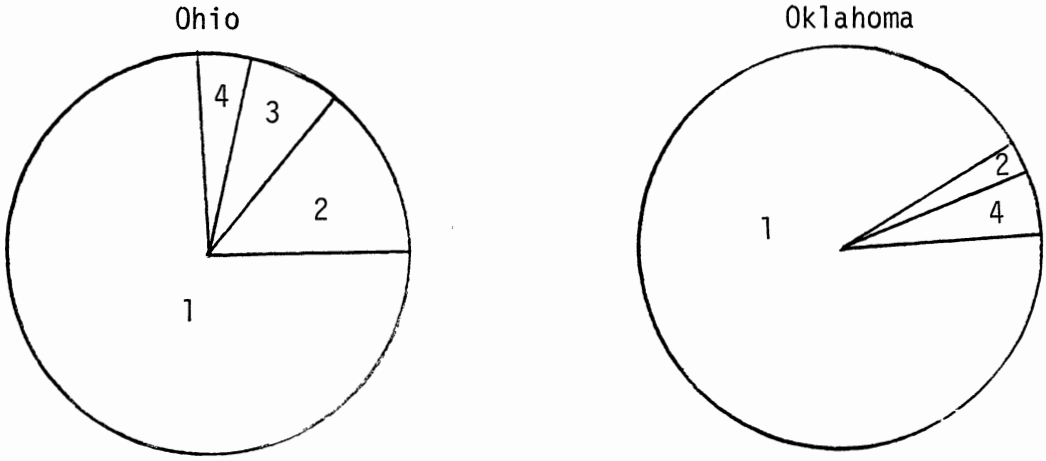
Work Arrangement

	Percentage	Ohio	Oklahoma
1.	Independent	78	86
2.	Other	11	9
3.	Corporate	7	0
4.	Group	4	5

Figure 2. Work Arrangement

Business Base Location

Three quarters (75%) of the respondents (n=42) use their private residences as a business base location, while 14 percent (n=8) indicated "other" as their location. Seven percent listed corporate offices (n=4), and 4 percent (n=2) indicated the use of a separate business office. Similarly, the majority (93%) of consultants in Oklahoma use their private residences as offices, and only 5 percent use separate offices (Figure 3).



Percentages

Location	Ohio	Oklahoma
1. Private residences	74 (n=42)	93 (n=33.5)
2. Other	14 (n=8)	2 (n= 7.2)
3. Corporate offices	7 (n=4)	0
4. Separate offices	4 (n=2)	5 (n=1.8)
	100%	100%

Figure 3. Business Base Location

Activities Performed Before Accepting an Account

The respondents were asked to indicate the activities they performed before accepting a new account. Eighty percent (n=44) of the Ohio consultants reviewed the complete facility, while only 57 percent of the Oklahoma consultants performed this activity prior to acceptance (n=44). In Ohio, consultants responded that 16 percent (n=9) reviewed only the dietary department, while consultants in Oklahoma ranked this as occurring 31 percent (n=13) of the time. Seventy-six percent of the consultants observed the foodservice, which is very similar to Oklahoma's response (74%). Acquaintance with foodservice personnel usually occurred 40 percent (n=22), while this occurred 48 percent (n=20) for Oklahoma consultants. Almost 90 percent (n=49) of the consultants evaluated the foodservice, but only half of the Oklahoma consultants accomplished this task. While three-quarters (73%, n=40) discussed problem areas with the foodservice supervisor, more Ohio consultants discussed problems with the administrator (90%, n=49), and almost half (47%, n=26) discussed problem areas with the director of nurses.

The percentage of Oklahoma consultants who discussed problems with the foodservice supervisor were comparable; however, fewer discussed problems with the director of nurses. Oklahomans usually checked mileage from the business base location (83%), while only a little more than half (57%, n=31) of the Ohio consultants checked their mileage (Figure 4). About 12 percent of the Ohio consultants acknowledged performing any other activity before accepting an

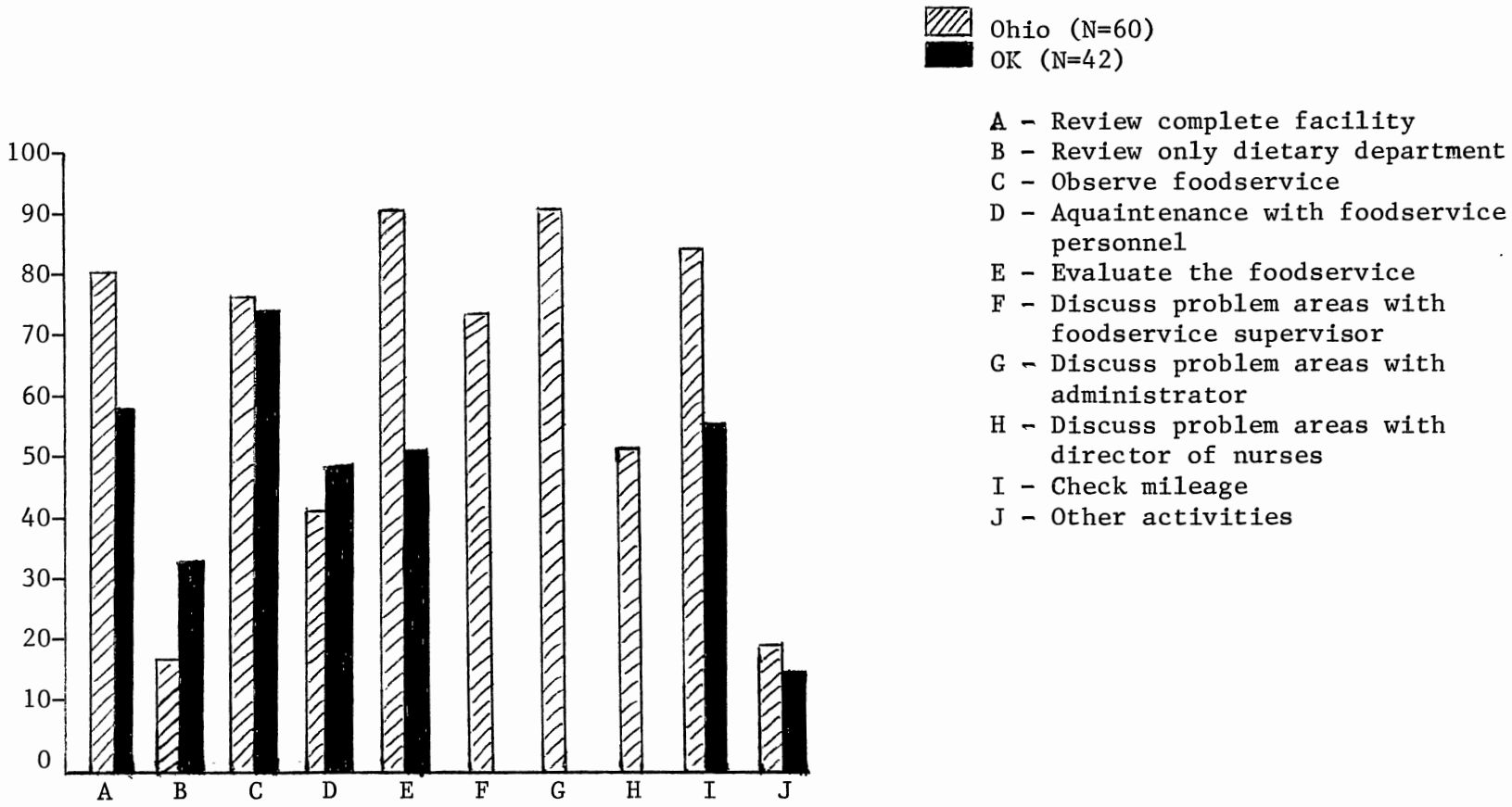


Figure 4. Preliminary Activities Performed Before Accepting an Account

account. Faye (1982) reported that 7 percent reported other activities (Figure 4).

When professional consultants are engaged, the type of working arrangement has to be mutually agreed upon by consultant and facility before any services were rendered. The most popular form of working arrangements listed by the Ohio respondents was the written agreements (63%, n=34). Oklahoma consultants reported 46 (n=19) have written agreements. One-third (28%, n=15) of the Ohio consultants have legal contracts. Oklahoma consultants preferred this style a little more (44%, n=18). Seven percent of the Ohio consultants have corporate contracts.

Plan of Work

Dietitians in both Ohio and Oklahoma were very similar relative to writing or not writing priority plans of work for foodservice before starting consultation. In both states, 54 percent did not prioritize tasks, while 44 percent prepared a plan of work. Others reported weighing the circumstances before making decisions about plans of work for certain facilities.

Time Spent on Accounts

The time spent in the facilities by Ohio consultants (n=49) in dealing with new accounts varied considerably, ranging from 0 to 50 hours, with a mean of 16 hours. Consultants in Oklahoma were somewhat more consistent, with a mean of 9 hours and a range of 8 to 16 hours. After working with the accounts for one year, the mean decreased to 14 hours (n=49) in Ohio, while the mean remained at 9 hours for Oklahoma

consultants. Although the Ohio consultants spent less time working while away from the facility, they did work longer hours while in the facilities (Table II).

Reading Professional Literature and Computer Application

The consultant's expertise is perhaps a major factor to consider in the procurement of the dietitian by most facilities. One's expertise, along wth the maintenance of the registration status, requires updating periodically, since the acquisition of the knowledge is a lifetime goal of a dietitian. One source to update knowledge is the reading of professional literature. Respondents in this study reported reading the professional literature from 0 to 15 hours, with a mean of 3 hours per week. The total number of hours reported by 57 Ohio consultants was 173. Oklahoma respondents (n=38) reported a range of 0 to 10 hours per week reading professional literature. Holli (1982) reported 4.1 hours per month in a study conducted among 230 Illinois dietitians.

Computer use was reported by 13 percent of the respondents, which is up from the 5 percent use reported by Oklahoma consultants. This could be attributed to the rising popularity and availability of home computers for personal and business application in the two years between the two studies.

Malpractice Insurance and Fringe Benefits

Slightly more than half (54%, n=29) of the Ohio consultants were covered by malpractice insurance, whereas only one-fourth of the

TABLE II

TIME SPENT WITH ACCOUNTS ON A MONTHLY BASIS

Hours Spent	n[1]		Range		Mean[2]		Standard Deviation		Sum	
	OH	OK	OH	OK	OH	OK	OH	OK	OH	OK
New Account	49	39	4-50	8-16	15.88	9.14	10.85	2.25	778	356.5
After one year	49	39	2-45	6-24	13.96	8.77	9.52	2.94	684	342
Work performed away from facility	50	37	0-42	0-30	4.50	6.71	6.50	8.21	225	248.25

[1]Number of sample size may vary due to failure of some respondents to answer.

[2]Respondents' answers given in ranges were recorded as the mean for the range.

Oklahoma consultants reported this coverage. Less than one-fourth of the consultants (22%, n=12) reported fringe benefits as part of their hourly consultant fees. Only 13 percent (n=7) reported reimbursement for mileage as part of fringe benefits. Seven percent (n=4) received both hourly fees and mileage, while 4 percent (n=2) received hourly compensation only.

Consultant Fees

The April, 1981, issue of the Journal of the American Dietetics Association suggested that entry-level, full-time consultants should earn approximately $16,000 ($8/hour), and hopefully higher, commensurate with experience and an advanced degree. Contrarily, Ohio consultants reported a mean of $16.76 per hour. Oklahoma consultants reported a $15.47 per hour, with 8.13 years of experience as full-time consultants (part-time consultants' mean was 7.57 years (see Table I). The approximated income for the upcoming year was a mean of $18.75 per hour (Table III). For the current fees, the Ohio consultants were making almost $1.30 more per hour than those in Oklahoma; however, for both groups, the projected increased in fees is similar. The difference in fees may be attributed, at least in part, to the effects of inflation and cost-of-living differences between Ohio and Oklahoma. Another reason for fee differential might be attributed to the time lapse between the two studies, which is about two years (Ireland, 1984). Approximately one-third of the consultants experessed an interest in acquiring additional accounts in the near future.

TABLE III

HOURLY FEES

Fee Information	n		Range		Mean		Standard Deviation	
	OH	OK	OH	OK	OH	OK	OH	OK
Current fee	50	40	6-40	10-60	16.76	15.47	5.37	7.53
Fee projected for next year	50	40	6-40	20%	18.15	18.56	5.33	21.25

[1]Respondents' answers, given in ranges, were averaged and the mean was used in calculation.

Function of the Consultant, Time Required to Accomplish Tasks, and Experience Required Prior to Consultation

"The consultant dietitian, R.D., with experience in administrative or clinical dietetic practice, affects the management of human effort and facilitating resources by advice or services in nutritional care" (ADA, 1981b, p. 468). Most respondents indicated that their function was to advise and counsel the various dietary departments (90%, n=51), while a concurring view of opinion was noted by those in Oklahoma (93%, n=39). Interestingly, 11 percent (n=6) believed that a consultant's responsibilities included both advice, counsel, and direct supervision. One Oklahoma consultant agreed with these, while two others stated that supervision, which is a line function, was the consultant's responsibility. This finding concurred with those reported by Brenner (1971) and Gilbride (1981).

Almost two-thirds of the consultant dietitians (64%) reported needing more time to successfully accomplish their tasks. This concurred with Faye's (1982) results. The definition of the consultant in the aforementioned paragraph discussed prior years of experience. The ADA position paper on consultant dietitians (1975) mentioned a minimum of three years of experience in a variety of settings (therapeutic, administrative, and educational). In this study, half (n=30) of the respondents indicated that five years of experience in dietetics was necessary before commencing a career as a consultant (Table IV). However, two-fifths of those responding indicated that only two or three years of experience was necessary to become a consultant.

The mean number of years was four. Smith (1975) noted a low ranking of the statement requiring dietetic consultants to have a minimum of two to five years of experience before assuming the responsibilities of a consultant dietitian. The New York State Dietetic Association recommended a minimum of four years of recent experience (Scialabba, 1982).

TABLE IV

EXPERIENCE RECOMMENDED BY RESPONDENTS

Minimum Experience Recommended	Frequency	Percentage
1	1	1.75
2	11	19.30
3	11	19.30
4	1	1.75
5	30	52.63
10	3	5.26

Mean	Range	Standard Deviation	Sum
4.21	1-10 years	1.88	240

Job Satisfaction of Ohio Consultants

The study of quality of worklife dimensions such as attitudes toward careers and job satisfaction is a very popular issue in manpower development today. The literature abounds with studies

correlating performance with job satisfaction (Agriesti-Johnson and Broski, 1982; Bowditch and Buono, 1982; Dowling, 1981; Goodman, 1980; Smith, Kendall, and Hulin, 1969).

Ohio consultants in general are currently satisfied with their careers. About one-half (49%, n=28) of the respondents were moderately satisfied in their careers as consultants, while a little over one-third (42%, n=24) claimed to be highly satisfied. Five other dietitians indicated either dissatisfaction with their current jobs or did not respond to this question. Oklahoma consultants paralleled those in Ohio, in that 53 percent reported being moderately satisfied, 45 percent as highly satisfied, and only one dietitian indicated dissatisfaction with their present positions (Figure 5).

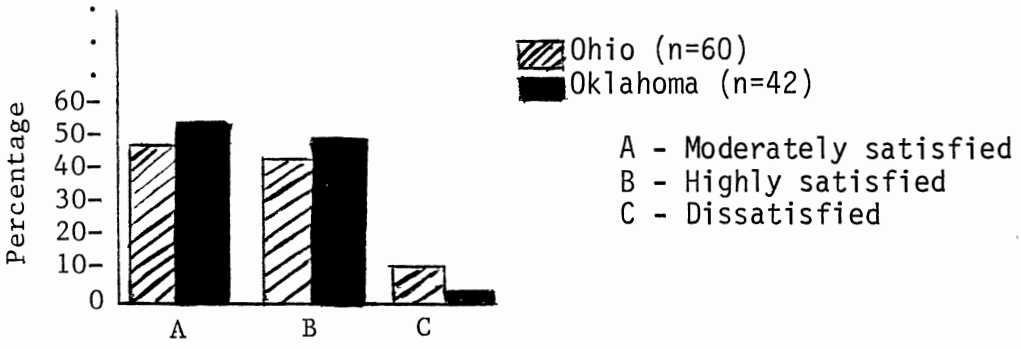


Figure 5. Career Satisfaction

Adequacy of Education and Training

It is probably true that education and training in preparation for one's career could have an effect on job satisfaction. Over half (53%, n=30) of the respondents believed that their educational preparation was very inadequate in certain areas to function as consultants, and only 5 percent (n=3) indicated adequacy of education and training, requiring only little improvement. Perhaps some of the feelings consultants conveyed towards their educational preparation was valid. "The primary objective of professional education in dietetics is preparation for entry-level employment in dietetic practice" (Lanz, 1983, p. 65). While Plan IV academic requirements are expressed in terms of knowledge areas and basic competencies, education is planned to meet the entry-level position, which is usually in a health care institution as a generalist dietitian, clinical dietitian, or perhaps as an assistant administrative dietitian, and not the specialized role of a consultant. Smith (1975) reported the mean score of the dietitians' ratings of how well their education and training prepared them was 2.33, based on a rating scale of 1 to 5, with 5 being completely adequate.

At the present time, some careers in community dietetics require not only an advanced degree, but also experience as a practitioner in some field of dietetics. Is the reason why they are not overwhelmingly satisfied with their careers as consultants the fact that they are not adequately trained for the rigor and responsibilities of consultants? Or do they have adequate educational preparation and training but both are geared towards working in critical care versus

preventative care? Should courses containing consultation processes and community management be required for entry-level positions? Perhaps these are areas that need further investigation.

Number of Accounts and Work Environment

The 57 consultant dietitians in Ohio have a total of 194 accounts compared to a total of 280 accounts reported by 39 Oklahoma consultants (Faye, 1982). The mean number of accounts per dietitian in Ohio is only half that of the Oklahoma consultants. In terms of tenure at each account, the Oklahoma dietitians have a slight edge over the Ohio consultants (Table V). The Ohio consultants, with a mean of 3.4 accounts, traveled an average of 35 miles to each account, spending an average of 14 hours per month at the facility, serving 90 people. In comparison, Oklahoma consultants have 7 accounts, traveled an average of 37 miles to each account, and spent 9 hours serving an average of 78 clients (Faye, 1982) (Table V). The density of populations might be attributed to these differences. Ohio (10.746 million population) is approximately three times as dense as Oklahoma (3.298 million) (The Daily Oklahoman, 1984), and has approximately 2,500 dietitians to Oklahoma's 500 (Ohio Dietetic Association Newsletter, 1983b). The Ohio consultants have fewer accounts; however, they tended to spend more time at the facility, probably due to a larger number of residents to serve. The predominant accounts taken by Ohio consultants were in skilled care nursing facilities (44%, n=85), followed by intermediate care facilities (35%, n=67) (Figure 6). Sixteen of the accounts (8%) were in mental retardation centers, while 10 accounts

TABLE V

CONSULTANT ACCOUNTS ON A MONTHLY BASIS
(n=57)

	Mean		Standard Deviation		Totals	
	OH	OK	OH	OK	OH	OK
Total number of accounts	3.40	7.18	0	14.39	194	280
Distance from business base[1]	34.54	35.76	43.50	27.94	6,700	10,012
Number of beds and/or participants	90.44	77.69	62.70	40.49	17,545	21,752
Hours per month/facility[2]	13.99	9.04	17.48	6.02	2,714	2,530
Length of time employed by facility in years[3]	4.18	0.30	4.12	3.51	812	1,370

[1]If distance was less than one mile, a "1" was entered in the data set. All other figures given as fractions were rounded to next higher number.

[2]All figures given as fractions were rounded to next higher figure.

[3]Accounts of less than one year were entered as one year. All figures given as fractions were rounded to next higher figure.

(5%) were in congregate meal sites, and 5 accounts (3%) were in hospitals.

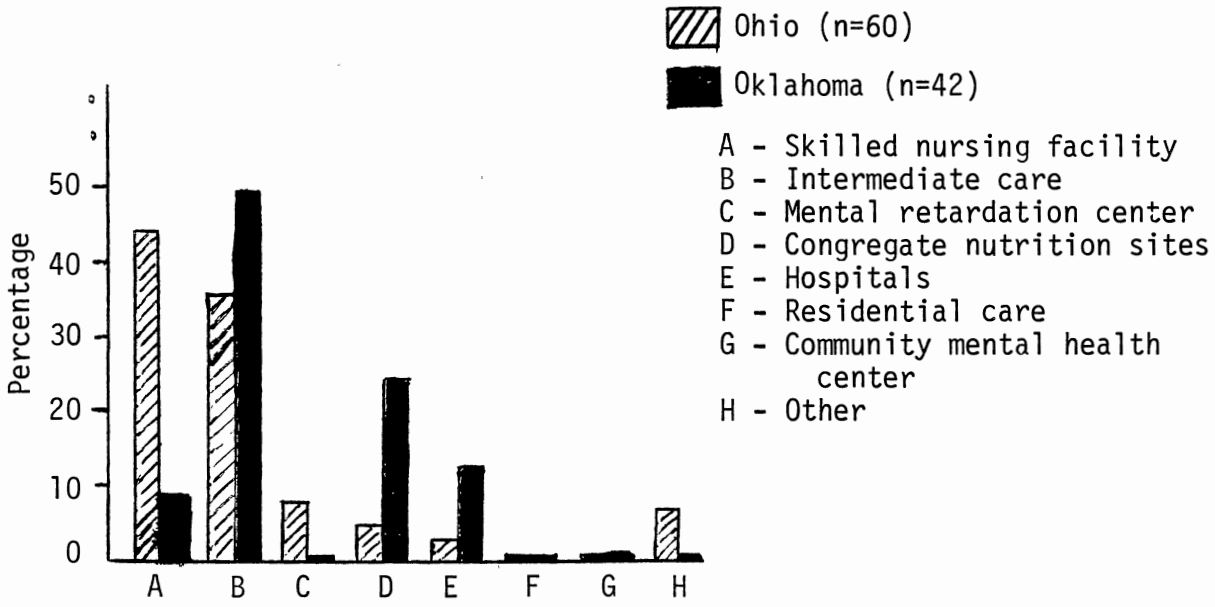


Figure 6. Types of Accounts

Oklahoma dietitians differed from Ohio dietitians in types of accounts taken. Forty-nine percent (n=138) of the accounts in Oklahoma were in intermediate care facilities, followed by congregate meals for the elderly (25%, n=69), hospitals (12%, n=33), and skilled care (8%, n=22). The contrast between the types and number of accounts could perhaps be attributed again to the larger percentage of elderly in Ohio compared to Oklahoma (House of Representatives, 1982). Also, the population distribution in Oklahoma is different, and there

are more smaller hospitals in Oklahoma than in Ohio. In the 1982 annual survey taken by the American Hospitals Association, Oklahoma had 94 hospitals, while Ohio had 69 hospitals in the 99 bed or lower category (Hospital Statistics, 1982 Annual Survey, 1983).

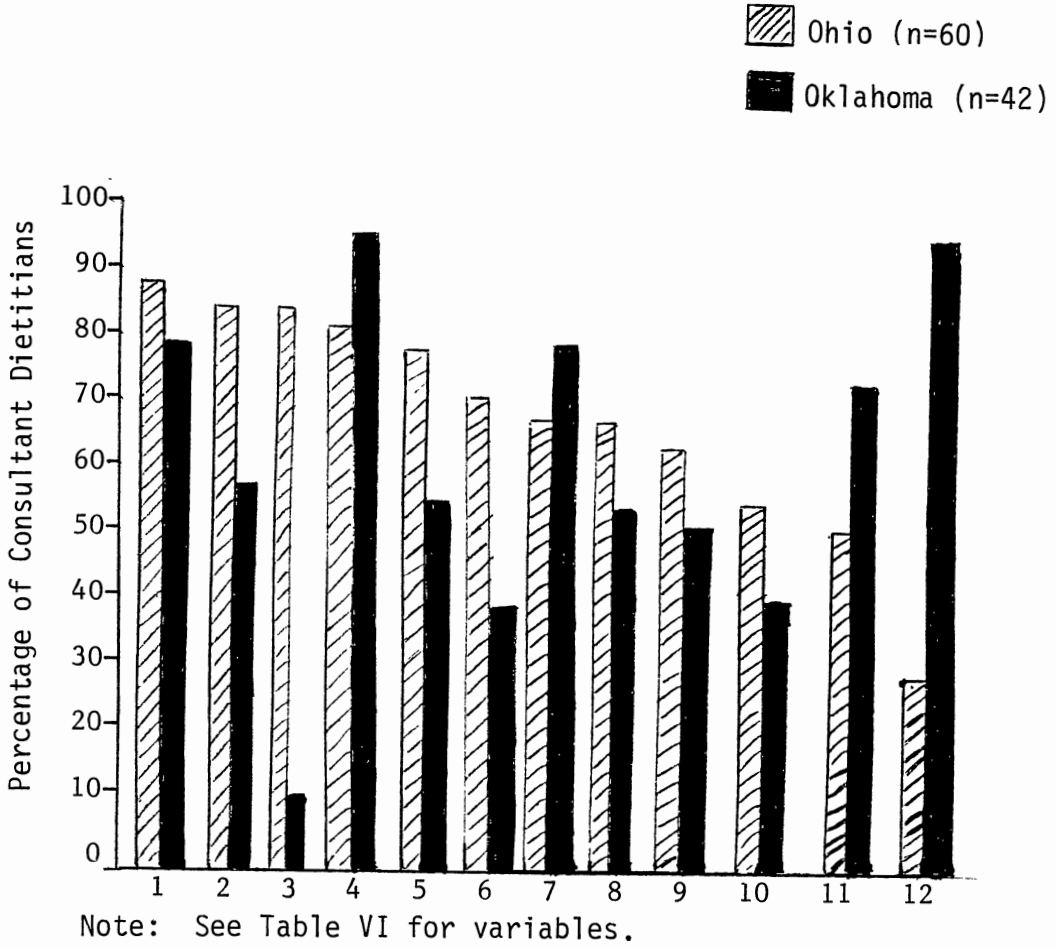
Analysis of Role Functions of Consultant Dietitians

The second section of the questionnaire listed role functions which may have been performed by the consultant dietitian and/or the foodservice supervisor. These role functions were listed in 11 separate groups: menu planning, food purchasing, food preparation, foodservice, sanitation, therapeutics, dietary administration, records and reports, equipment and layout, education and training, and quality assurance. Seventy-four functional activities were delineated to further describe the 11 groupings. The researcher arbitrarily decided to discuss the role functions performed by 50 percent or more of the respondents, except in certain comparison areas.

Functional Activities Performed Solely by Consultant Dietitians

Of the 74 delineated functional activities in this study, 11 were performed soley by 54 to 87 percent of the 60 Ohio consultant dietitians. Functions solely performed by consultant dietitians in Oklahoma (n=42) were somewhat similar to the present study; however, the percentage of dietitians accomplishing the functions were different (Figure 7). Oklahoma dietitians did not perform five of the functions alone, and they also performed two other functions by themselves which

are performed jointly by the dietitian and foodservice supervisor in Ohio (numbers 11 and 12, Table VI). These activities identified and performed by both groups of consultants were in the realm of the consultant dietitians' major responsibilities or position descriptives. (U.S. Bureau of Employment Security, 1980).



Note: See Table VI for variables.

Figure 7. Role Functions Performed Solely by Consultant Dietitian

TABLE VI

ROLE FUNCTIONS PERFORMED SOLELY BY CONSULTANT DIETITIAN[1]

Role Function[2]	% of Dietitians Ohio (n=60)	Oklahoma (n=42)
1. Develops summary of consultant visitation accomplishments (8A7)	87	78
2. Calculates modified diets (6B)	84	55
3. Conducts nutrition education for professionals (10E)	83	--
4. Maintains summary of consultant visitation accomplishments (8B7)	81	95
5. Assesses drug-nutrient interrelationships (6F)	77	53
6. Plans menus for modified diets 6(C)	73	--
7. Assesses nutritional status of residents (6A)	67	--
8. Adjusts modified diets (6E)	66	54
9. Develops dietary progress notes for patient medical record (8A6)	62	--
10. Conducts nutrition education for patients and their families (10D)	54	43
11. Confers with patients regarding modified diets (6D)	--	75
12. Conducts in-service training for foodservice employees (10B)	0	98

[1]The -- signifies that that activity was not accomplished by the 50 percent cut-off frequency.

[2]The number and letters in parentheses provide the location on the questionnaire (Appendix B).

Spear (1978) listed activities performed by the consultant dietitian regularly as resident visitation and diet consultation, nutritional assessment, communication with other departments, and checking foodservice and sanitation procedures.

Functional Activities Performed Jointly by Consultant Dietitian and Foodservice Supervisor

Eight of the 74 functional activities in this study were performed jointly by the consultant dietitian and the foodservice supervisor: communication with other departments, development of department procedures, establishes sanitation standards, conducts in-service training for foodservice employees, maintains professional dietary standards, checking texture and color of food served, development of department policies, and makes menu changes (Table VII). In contrast, only three of these eight activities were performed jointly by the ocnsultant dietitian and foodservice supervisors in Oklahoma. These three were: communicates with other departments, establishes sanitation standards, and makes menu changes. On the other hand, 75 to 80 percent of the Oklahoma consultants reported three other functional activities which they performed every visit: testing menu items for taste and appearance, checking plate waste, and checking dishwashing temperatures. They also reported 10 other activities performed jointly by the consultant dietitian and the foodservice supervisor. It is interesting to note that three of these ten were performed solely by the consultant dietitian in Ohio (see Table VI and Figure 7).

It requires some initiative on the part of the dietitian to delegate or share some of the functions with the foodservice supervisor. Perhaps the altruistic tendencies of some dietitians may account for the additional time spent in the facilities performing various

TABLE VII

ROLE FUNCTIONS PERFORMED JOINTLY BY THE CONSULTANT DIETITIAN AND FOODSERVICE SUPERVISOR[1]

Role Function[2]	% of Dietitians Ohio (n=60)[3]	Oklahoma (n=42)
1. Communicates with other departments (7I)	73	81
2. Tests menu items for tast and appearance (3E)	--	75-80
3. Checks plate waste (4D)	--	"
4. Checks dishwashing temperatures (5B)	--	"
5. Develops department procedures (7B)	69	--
6. Eastablishes sanitation standards (5A)	66	--
7. Conducts in-service training for foodservice employees (10B)	65	50-74
8. Maintains professional dietary standards (11C)	63	--
9. Checks texture and color of food served (11A)	63	--
10. Develops department policies (7C)	62	--
11. Makes menu changes (1C)	60	75-80
12. Plans and writes menus (1A)	--	50-74
13. Supervises dishing-up of menu items (4A)	--	"
14. Maintains portion control (4B)	--	"
15. Supervises service and distribution of meals (4C)	--	"
16. Checks refrigerator temperatures (5C)	--	"
17. Establishes cleaning schedules and procedures (5D)	--	50-74
18. Maintains sanitation standards (5E)	--	"
19. Assesses nutritional status of residents (6A)	*	"
20. Plans menus for modified diets (6C)	*	"
21. Confers with patients regarding modified diets (6D)	*	"

[1]The -- signifies that that activity was not accomplished by the 50 percent cut-off frequency.

[2]The number and letters in parentheses provide the location on the questionnaire (Appendix B).

[3]The * signifies role functions performed solely by Ohio consultant dietitians (see Table VI).

role functions. There is no clear cut line as to which activities should be shared and how much of each activity should be performed by either the foodservice supervisor or consultant dietitian.

Spear (1978) summarized that most activities were joint responsibilities of the consultant and supervisor, except for very specific operational tasks, which were performed most often by the foodservice supervisors independent of the consultant dietitians.

Functional Activities Performed Solely by the Foodservice Supervisor

According to 75 to 84 percent of the 60 Ohio consultants who responded to this study, nine functional activities were performed by the foodservice supervisor in the facilities where they consult: assigns work to employees, places food orders, maintains the census records, inspects deliveries for quality and quantity, initial interviews department personnel, hires department personnel, develops inventory report form, maintains staffing notes, supervises service, and distributes meals (Table VIII). Sixteen other activities were solely performed by their foodservice supervisor, according to 51 to 73 percent of the 60 Ohio consultants (Table VIII).

Faye (1982) reported that only 7 out of 70 functions were performed solely by the foodservice supervisor, as reported by 75 percent or more of the respondents (n=42). Five others were reported by 50-74 percent of the consultant dietitians in Oklahoma. Note that four of the functional activities performed by foodservice supervisors solely in Ohio were performed jointly by the consultant dietitian and the foodservice supervisor in Oklahoma (see Table VII).

TABLE VIII

ROLE FUNCTIONS PERFORMED SOLELY BY FOODSERVICE SUPERVISOR[1]

	Role Function[2]	% of Dietitians Ohio (n=60)	Oklahoma (n=42)[3]
1.	Assigns work to employees (3F)	84	75+
2.	Places food orders (2C)	84	"
3.	Maintains census records (8B1)	82	50-74
4.	Inspects quality and quantity of deliveries (2E)	80	"
5.	Initially interviews department personnel (7E)	78	--
6.	Hires department personnel (7F)	78	75+
7.	Develops inventory records (8A4)	76	"
8.	Maintains staffing notes (8B3)	75	--
9.	Supervises service and distribution of meals (4C)	75	--
10.	Files menus (1D)	--	75+
11.	Assigns cleaning tasks (5F)	--	75+
12.	Periodically evaluates personnel (7G)	73	75+
13.	Maintains food costs summary (8B2)	73	--
14.	Confers with sales persons (2D)	69	--
15.	Determines amount to be prepared (3C)	69	--
16.	Conducts orientation for new employees (10A)	69	--
17.	Maintains portion control (4B)	67	*
18.	Develops budget (8A5)	66	--
19.	Supervises dishing-up of menu items (4A)	66	*
20.	Conducts exit interviews with personnel (7H)	64	--
21.	Develops food cost summary (8A2)	62	--
22.	Establishes cleaning schedules and procedures (5D)	62	*
23.	Develops census reports (8A1)	60	--
24.	Maintains sanitation standards (5E)	55	*
25.	Determines food items (2A)	53	50-74
26.	Prepares menu items (3D)	51	"
27.	Develops staffing cost report (8A3)	51	--

[1]The -- signifies that that activities was not accomplished by the 50 percent cut-off frequency.

[2]The number and letters in parentheses provide the location on the questionnaire (Appendix B).

[3]The * signifies functions performed jointly by the consultant dietitian and the foodservice supervisor in Oklahoma (see Table VII).

Functional Activities Not Performed by Either Consultant Dietitian or Foodservice Supervisor

Of the 74 functional analyses listed in the questionnaire, 48 to 83 percent of the 60 Ohio consultants indicated that five activities were neither performed by them or their foodservice supervisor (Table IX). These activities were mainly in the major role function, equipment and layout, and dealt specifically with energy requirements and conservation, and working with the architect regarding remodeling and construction. Self-evaluation tests of personnel were also not performed. The Oklahoma study reported that these functional activities were not being performed by either the consultant dietitian or the foodservice supervisor (Table IX).

Results of this study indicated non-performance of activities relative to energy usage and conservation were in much the same way as Shaw's (1983) findings. In her study of productivity and six other interrelated organizational performance criteria in health care delivery systems, Shaw reported that dietitians with management responsibilities closely monitored inputs, except energy. Are these results a reflection of people's apathy towards conservation of resources? Hopefully, other personnel besides the dietitians and their staff in health care institutions are responsible for measuring energy usage and instructing personnel on how to conserve and utilize resources effectively. Spear (1978) reported personnel employment activities, development and maintenance of records and reports, as

tasks frequently not accomplished by either the consultant dietitian or the foodservice supervisor.

TABLE IX

FUNCTIONAL ACTIVITIES NOT GENERALLY PERFORMED BY CONSULTANT DIETITIANS OR FOODSERVICE SUPERVISORS[1]

Function[2]	Percentage Ohio (n=60)	Oklahoma (n=42)
1. Keeping records of power/gas (9B)	83	75 or more
2. Setting energy conservation goals (9D)	65	"
3. Conducting in-service education in energy conservation (10C)	52	"
4. Administering self-evaluation tests to foodservice personnel (11D)	50	"
5. In remodeling and new construction, works with architect and others to interpret kitchen needs (9F)	48	"
6. Assuming responsibility for layout and equipment of remodeled or new dietary facility (9G)	--	50-74

[1]The -- signifies that that activity was not accomplished by the 50 percent cut-off frequency.

[2]The number and letters in parentheses provide the location on the questionnaire (Appendix B).

In a study by Kris-Etherton, Lindsay, and Smutz (1983) of a profile of clinical dietetics, dietitians with the most experience spent more time on professional/educational activity and development,

foodservice systems interface, nutrition care evaluation, and social responsibilities. Dietitians with less than two years of experience, however, reported spending more time on nutrition education, nutrition assessment, management of clinical dietetics personnel, and nutrition care planning.

Literature on the wise use and conservation of energy in foodservice systems is available and should perhaps be brought to the attention of all health care personnel. A few other role fucntions reported by less than 50 percent of the respondents were not included in this discussion. Smith (1975) listed inadequate training for several responsibilities. These included the ability to assist in the planning of layout and design and determining equipment requirements for a foodservice unit.

Summary of Functional Role Activities

The majority of the functional role activities performed solely by dietary consultants in Ohio were under the major role function grouping of therapeutics, followed by records and reports, and education and training. Similarly, Oklahoma consultants identified as their primary domain: therapeutics, and education and training. Shared concerns were primarily in the role function grouping: dietary administration, quality assurance, education and training, and sanitation. Principal domains of the foodservice supervisor included the functional role groupings: records and reports, dietary administration, food purchasing, food preparation, foodservice, sanitation, and education and training.

The domain in which no one person took responsibility was equipment and layout. Menu planning was performed jointly, or by the foodservice supervisor; however, it was only reported by less than 50 percent of the respondents and was not, therefore, discussed. Menu planning is a very intense task which is generally performed when first commencing a consulting account. Only minor changes are required after that time. Generally, once the "skeleton" of the menu is completed, only the revisions or changes need to be made; hence, the task is not performed often.

Perceived Continuing Education Needs of Consultant Dietitians

Part three of the questionnaire dealt with continuing education needs of the consultant practitioner. There were six major areas or groups: entrepreneurial (establishing a consulting service), legal aspects, adapting to a facility, organization and management, working as a professional, and quality assurance and nutritional care. Forty-seven items were delineated to encompass all the education needs under these six groups.

Continuing education concerns were ranked as to the consultant's perception of their importance. The four ranking dimensions ranged from very important, important, slightly important, and unimportant. Each rank was arbitrarily assigned a score--from 1 to 4 points, respectively--and the lower the score the higher the level of importance. The groups of similar concerns were totaled, and the group was evaluated by importance assigned by respondents' answers and analyzed using the t-test and analysis of variance (ANOVA) procedure.

Categories receiving very important ratings were under two groupings, adapting to a facility, which included: evaluation of a prospective facility, working with the administrator, working with a foodservice supervisor and state and federal regulations; and legal aspects, which included: incorporation, malpractice insurance, and contractual agreement. The level of importance varied slightly, depending on the amount of time the consultant was employed. Full-time consultant dietitians tended to indicate the items to be more important than those employed less hours.

Other groupings in descending order included: (1) entrepreneurial (establishing a consulting service), and this group listed: small business management, forming partnerships, record keeping systems, establishing a credit line, business logos and other symbols, and setting and collecting fees; (2) organization and management, which included: developing and writing policies and procedures, staff development and in-service education, personnel management, working with unions, zero base budgeting, cost control, cost/benefit applications, equipment layout and design engineering, developing energy conservation policies and procedures, and productivity measurement and improvement; (3) working as a professional, which encompassed: professional dress and tools of the trade, professional conduct and ethics, time and stress management, interviewing techniques, media relationships, writing for professional journals, writing for popular media (newspaper, television, radio), interpretation and application of new research, and licensure; and (4) quality assurance and nutritional care, which included: overall standards for quality assurance, third party reimbursement, implementation of diagnosis-related groups,

patient rights standards, nutritional assessment, socio-cultural influences and food behavior, charting and documentation, patient care plans and audits, behavior modification, medical history high-risk conditions, food-drug interrelationships, nutritional implications of chronic disorders, gerontology/study of aging, and principles of sanitation and food safety, including techniques for inspection.

Reasons were surmised to explain the effects of the level of employment on the perceived continuing education needs of consultant dietitians. The less than half-time consultants might only have time to perform the essential tasks and may not take additional time to consider their educational needs. The full-time consultants may have enough experience or no spare time; hence, they have less perceived educational needs. Perhaps those who are more accustomed to consulting may have had established routines. Consultants who are employed less than full-time but more than half-time, however, may perceive additional needs as they begin to assume a little more responsibility or spend more time in their jobs.

Prediction of the importance of administrative leadership and cost controls, management of people, time, money, food, and energy resources for dietitians seeking nursing home positions in the 1980's was seen by Gilbride (1981). Vanderveen (1976), in her study of educational needs of Ohio dietitians, summarized that labor-management relations and conversion to the metric system received the highest need level ratings in managerial sciences.

Inadequate rating for education and training in performance of duties relative to financial management was also reported by Smith (1975). Courses that were forecasted in the Smith study as having the

number one priority, which related to the future educational and training needs of consulting dietitians, were the courses in management science and personnel management.

Individual Rankings of Continuing Education Needs

Items Ranked as Very Important

Continuing education needs, as discussed, were presented in six major groupings or clusters of topics. Under each grouping were 3-14 items, totalling 47 topics (Appendix B). The ranking of individual items was very important, as shown by major groupings in Table X. The 21 out of 47 topics (43%) which were rated as "very important" by Ohio consultant dietitians are listed separately in Table XI.

In terms of ranking, four of the first five items (Table XI) were in the major grouping, adapting to a facility: working with the foodservice supervisor, state and federal regulations, working with the administrator, and evaluation of a prospective facility. Similarly, Faye (1982) noted the same finding in her study of the importance of adapting to a facility by Oklahoma consultants. These findings support Kirton's (1978) premise of adaptors to facilities as being those who arrive at solutions within current policies rather than radical innovations (see Chapter II). Motivation for consulting may be affected by the dietitians' abilities to adapt to various situations and facilities. It seems to follow that a consultant dietitian who is having problems meeting the facility's needs through failure to adapt might be very frustrated; hence, dissatisfied.

TABLE X

RANKING OF CONTINUING EDUCATION NEEDS
BY MAJOR GROUPINGS

Major Group (Appendix B)	No. Items Ranked as Very Important	Total No. of Items in Major Grouping	% of Items in Major Group Ranked as Very Important
Adapting to a facility	4	4	100
Quality assurance and nutritional care	8	14	57
Organization and management	5	11	48
Legal aspects	1	3	33
Working as a professional	2	9	22
Entrepreneurial	1	6	17
Total	21	47	

TABLE XI

CONTINUING EDUCATION NEEDS RATED AS VERY IMPORTANT BY OHIO CD-HCF[1] (n=60)

Major Group	Topics	Respondents (%)
Adapting to a Facility	Working with a foodservice supervisor (3C)	82
Adapting to a Facility	State and federal regulations (3D)	75
Adapting to a Facility	Working with the administrator (3B)	71
Organization and Management	Staff development and in-service education (4B)	64
Adapting to a Facility	Evaluation of a prospective facility (3A)	63
Quality Assurance and Nutritional Care	Principles of sanitation and food safety, including techniques of inspection (6N)	61
Organization and Management	Developing and writing policies and procedures (4A)	61
Quality Assurance and Nutritional Care	Nutritional assessment (6E)	59
Quality Assurance and Nutritional Care	Gerontology (6M)	54
Quality Assurance and Nutritional Care	Overall standards for quality assurance (6A)	54
Entrepreneurial	Record keeping systems (1C)	53
Quality Assurance and Nutritional Care	Patient care plans and audits (6H)	53
Quality Assurance and Nutritional Care	Charting and documentation (6G)	49
Quality Assurance and Nutritional Care	Nutritional implications of chronic disorders (6L)	49

TABLE XI (Continued)

Major Group	Topics	Respondents (%)
Organization and Management	Cost control (4F)	48
Organization and Management	Cost/benefit documentation (4G)	48
Organization and Management	Personnel management (4C)	46
Legal Aspects	Contractual agreement (2C)	46
Working as a Professional	Professional conduct and ethics (5B)	46
Working as a Professional	Licensure (5I)	44
Quality Assurance and Nutritional Care	Third party reimbursement (6B)	42

[1]The number and letter in parentheses provide the location on the questionnaire (Appendix B).

Forty-two to 61 percent of the respondents ranked quality assurance and nutritional care as very important. Similarly, 46 to 64 percent of the respondents ranked the grouping, organization and management, as being important. The quality assurance and nutritional care grouping listed: principles of sanitation and food safety, including techniques for inspection; nutritional assessment; overall standards for quality assurance; gerontology/study of aging; patient care plans and audits; charting and documentation; nutritional implications of chronic disorders; and third party reimbursement.

Standards and procedures were seen as very important continuing education needs in the quality assurance and nutritional care grouping. This finding may indicate the dietitian's desire to remain the nutrition expert. This also relates to the results of the chi square analysis on role functions, in relation to therapeutics as being one of the consultant's major activities. This supports Faye's (1982) findings that quality assurance was ranked as second in importance to adapting. Smith's (1975) panel of experts suggested that more emphasis be placed on food sanitation and safety, which is included in the quality assurance and nutritional care grouping. Workshops in continuing education for consulting dietitians in the area of geriatric nutrition was also recommended by Brenner (1971). In this study, gerontology/study of aging was also recognized and ranked by a little over half of the respondents as very important. Gilbride's (1981) contention that the consultants' primary role is a clinical one also supports the Ohio respondents' view.

In descending order of percentages, the organization and management grouping items were ranked as follows: staff development and in-service education, developing and writing policies and procedures, cost control, and cost/benefit documentation. Dietitians have become more aware of the need for business, organization, and management. This supports Vanderveen's (1976) and Smith's (1975) findings. Vanderveen noted that labor-management relations received one of the highest need level ratings in managerial sciences for educational needs. Smith (1975) found that courses which provided knowledge of management science and personnel management were forecasted as the number one educational priority. Brenner (1971) and

noted the continuing education need for personnel administration, organization, and management.

The grouping, working as a professional, was not viewed by respondents with the same intensity or level of importance as the previous groupings discussed. Less than half of the Ohio consultants saw these two items as very important: professional conduct and ethics, and licensure.

With the current trend of number of state dietetic associations' interest in licensure, these results were contrary to the researcher's expectations. Perhaps there is a need to educate dietitians on these issues. The importance of ethics in a professional group (Winterfeldt, 1973), although not rated as high as other topics, was also seen as a current issue and concern of the consultant. Also, through licensure the dietitians would seem to have a method to control professional conduct and ultimately their position as consultants of nutrition. Currently, the two types of licensure include: title act (voluntary) protects the title of the dietitian, and mandatory licensure protects the dietitian's scope of practice.

The legal aspects category contained contractual agreement. Again, less than half of the respondents considered this issue very important. Perhaps this is an indication of the consultants' limited knowledge of the importance of contracts. Note that earlier in this chapter, 63 percent indicated having written agreements, while only 28 percent of the respondents have legal contracts.

Establishing a consulting service or the entrepreneurial grouping list which included record keeping systems was rated by 54 percent of the respondents. In contrast, Faye (1982) reported that 83 percent of

Oklahoma respondents recognized the same as being important to very important.

Items Ranked as Important

The ranking of individual items as important continuing education needs is shown by major groupings in Table XII. The 22 out of the 47 topics (47%) which were rated as important by the respondents are listed separately in Table XIII.

Consultant dietitians in Ohio responded to 47 topics of continuing education needs by rating each as very important, important, slightly important, or unimportant. The percentages in the following list of groupings represent the rating in which consultant dietitians in Ohio (n=60) ranked each item as "important" (Table XIII).

The legal aspects grouping contained malpractice insurance and incorporation. Over half of the Ohio consultant dietitians reported being insured by malpractice insurance. Faye (1982) reported only one-fourth of the Oklahoma consultants have coverage by malpractice insurance.

The next grouping following legal aspects was organization and management. Perhaps more attention should be focused on this grouping because of the number of topics included in this area that were deemed important. (Note also that five of these topics were ranked as very important in the previous section. The item "cost control" was ranked by half of the respondents as very important and by the other half as important.) Organization and management grouping included the following items as chosen by respondents: zero base budgeting, developing energy conservation policies/procedures, and productivity measurement.

TABLE XII

RANKING OF CONTINUING EDUCATION NEEDS
BY MAJOR GROUPINGS[1]

Major Group (Appendix B)	No. Items Ranked as Very Important	Total No. of Items in Major Grouping		% of Items in Major Group Ranked as Very Important
Legal aspects	2	3		67
Organization and management	7	11	64	64
Entrepreneurial	3	6		50
Working as a professional	4	9		44
Quality assurance and nutritional care	6	14		43
Total	22	47		

[1]The sixth grouping, adapting to a facility, was rated as very important by 100 percent of the respondents (Table X).

TABLE XIII

CONTINUING EDUCATION NEEDS RATED AS IMPORTANT BY OHIO CD-HCF[1] (n=60)

Major Group	Topics	Respondents (%)
Quality Assurance and Nutritional Care	Medical history high-risk conditions (6J)	58
Organization and Management	Zero base budgeting (4E)	57
Quality Assurance and Nutritional Care	Food-drug interrelationships (6K)	54
Quality Assurance and Nutritional Care	Implementation of diagnosis diagnosis-related groups (6C)	52
Working as a Professional	Interviewing techniques (5D)	52
Organization and Management	Developing energy conservation policies and procedures (4J)	52
Organization and Management	Productivity measurement and improvement (4K)	52
Quality Assurance and Nutritional Care	Behavior modification (6I)	51
Legal Aspects	Malpractice insurance (2B)	50
Entrepreneurial	Setting and collecting fees (1F)	50
Working as a Professional	Interpretation and application of new research (5H)	49
Organization and Management	Cost control (4F)	48
Working as a Professional	Time and stress management (5C)	47
Quality Assurance and Nutritional Care	Patient rights standards (6D)	47

TABLE XIII (Continued)

Major Group	Topics	Respondents (%)
Working as a Professional	Professional dress and tools of the trade (5A)	44
Organization and Management	Equipment layout and design engineering (4I)	43
Entrepreneurial	Small business management (1A)	43
Organization and Management	Computer methods and applications (4H)	41
Quality Assurance and Nutritional Care	Socio-cultural influences and food behavior (6F)	41
Organization and Management	Working with unions (4D)	38
Legal Aspects	Incorporation (2A)	38
Entrepreneurial	Establishing a credit line (1D)	38

[1]The number and letter in parentheses provide the location on the questionnaire (Appendix B).

Other items chosen by respondents were: productivity improvement, cost control, equipment layout and design engineering, computer methods and application, and lastly, working with unions. Gilbride (1981) also reported the following areas to be increasingly important in the 1980's: management of people, time, money, and food and energy resources.

The grouping of quality assurance and nutritional care which received the following ratings of importance were: medical history high-risk conditions, food-drug interrelationships, implementation of diagnosis-related groups, behavioral modificaiton, patient rights standards, socio-cultural influence, and food behavior. Schiller and Behm (1979) stated that quality assurance audits are necessary to assess the effects of nutritional care on patients. In Chapter II, the Department of Health, Education and Welfare's study indicated that many of the patients were taking from 7 to 12 drugs daily. Findings in an Oklahoma City nursing home study listed a range from 0 to 22 drugs per patient, while the mean number of drugs listed was 6.4 (Barker, 1977). Contrary to the researcher's expectations, only half of the respondents ranked diagnosis related groups (DRGs) as important. Perhaps this reflects a possibility that DRGs were not widespread in Ohio health care facilities as of late Fall, 1983.

The working as a professional grouping consisted of the following list: interviewing techniques, interpretation and application of new research, time and stress management, professional dress, and tools of the trade.

Tanverdi and Clemons (1979) wrote that accurate, up-to-date information on computer-based management information systems helped in making decisions. This grouping embodies the tools and skills that dietitians should avail themselves of, to become better managers.

The entrepreneurial grouping embodied these items of continuing education needs: setting and collecting fees, small business management, and establishing a credit line. Setting and collecting fees was seen as an important continuing education need by Oklahoma dietitians

(Faye, 1982). Perhaps these results may indicate that consultants may view this grouping, entrepreneurial, as in conflict with the dietitic profession and therefore may not value this section as highly as other sections.

Items Ranked as Slightly Important or Unimportant

Six of the 47 items in the continuing education needs category were not viewed as important or very important by the Ohio respondents. They were: (1) entrepreneurial, forming partnerships and business logos and other symbols; (2) quality assurance and nutritional care, nutritional implications of chronic disorders; (3) working as a professional, media relationships, writing for professional journals, and writing for popular media (newspaper, television, radio) (Table XIV).

Perhaps the nutritional implication of chronic disorders ranking is related to the Ohio consultant dietitians' work environment. Earlier in Chapter IV, the discussion of type of accounts was mentioned. The majority of Ohio health care facilities are skilled. This item will not be as important in these facilities as a current need.

The following four items in the continuing education needs were related to marketing of dietetics or promoting/projecting their public image: business logos, other symbols, media relationships, writing for professional journals, and writing for popular media (newspaper, television, radio). Although these items were not viewed with the same level of importance as items previously discussed, the researcher believed that they are important to the consultant dietitian. Importance of the role, or scope of practice should be defined for the

benefit of both consultant and administrators in health care facilities, as administrators and consultant dietitians have various ideas of what function(s) the consultant actually performed (Gilbride, 1981). Marketing, as described by Brandt (1982), includes all phases in the creation of customers. It is important to know what the business entrepreneur wants to sell to whom (Brandt, 1982).

TABLE XIV

CONTINUING EDUCATION NEEDS RATED AS SLIGHTLY IMPORTANT OR UNIMPORTANT BY OHIO CD-HCF[1] (n=60)

Major Group	Topic	Respondents (%)
Entrepreneurial	Forming partnerships (1B)	36
Entrepreneurial	Business logos, other symbols (1E)	60
Quality Assurance and Nutritional Care	Nutritional implications of chronic disorders (6L)	44
Working as a Professional	Media relationships (5E)	44
Working as a Professional	Writing for professional journals (5F)	51
Working as a Professional	Writing for popular media (newspaper, television, radio) (5G)	53

[1]The number and letter in parentheses provide the location on the questionnaire (Appendix B).

In summary, the continuing education needs perceived by Ohio consultant dietitians in health care facilities generally supported the previous studies in the literature. Major educational need areas included: adapting to a facility, quality assurance, organization and management areas, and business-related issues.

Testing of Hypotheses

The hypotheses postulated in this study were:

H_1: There will be no significant differences in the role functions (activities, responsibilities, or duties) of consultant dietitians in health care facilities (CD-HCF) in Ohio based on: (1) age, (2) highest degree attained, (3) employment status, and (4) plan of work to establish priorities before consulting in a facility.

The relationship between 74 role functions (duties, responsibilities, or activities) and the four selected respondents' characteristics referred to in the null hypothesis were determined with chi square statistics. Twenty-two significant relationships were found at $p = 0.05$ or less. (See Appendix D for complete chi square tables.)

Differences were noted between three functional role responsibilities and age. The 20-49 year old group tended to delegate more responsibilities to foodservice supervisors; otherwise, the activity is not performed at all. Comparatively, Oklahoma consultants performed activities by themselves or did not perform the activity. The 50 year and older group tended to share most activities with the foodservice supervisor, or not accomplish the task. This compared similarly with Oklahoma consultants (Faye, 1982) (see Appendix D).

There were three differences between functional role responsibilites and highest degree attained. Both respondents with bachelors' degrees only and those with advanced degrees tended to delegate responsibilities to the foodservice supervisor. It seemed more likely that a dietitian earning a bachelor's degree only tended not to accomplish the task. In Oklahoma, those with bachelors' degrees tended to share the responsibility with the foodservice supervisor.

Seven differences were noted for functional role activities and employment status. Full-time consultants tended to delegate or share the following responsibilities with the foodservice supervisor: communicates with other departments, develops department procedures, establishes sanitation standards, conducts in-service training for foodservice employees, maintains professional dietary standards, checks texture and color of food, and develops departmental policies. This is similar to what Oklahoma consultants did. Half-time or more, but less than full-time consultants usually delegated to the foodservice supervisor or assumed the aforementioned responsibilities. Oklahoma consultants in this employment category usually shared with the foodservice supervisor these activities. Less than half-time consultants in Ohio delegated to the foodservice supervisor or the activity was not accomplished altogether (see Table IX).

Differences were found for nine functional activities and plan of work to establish priorities when first entering the facility. Consultants who wrote a plan of work usually delegated authority to the foodservice supervisor. Oklahoma dietitians who prepared a plan of work, on the other hand, tended to share these same activities with their foodservice supervisors. Consultants who did not write a plan

of work usually tended either to delegate responsibilities to the foodservice supervisor; however, a large number of activities were not accomplished (Appendix D).

Since there were 22 significant differences at the $p = 0.05$ or less level, between the functional role responsibilities and the demographic characteristics of age, highest degree attained, employment status, and plan of work to establish priorities before consulting in a facility, the researcher rejected H_1.

In addition, to the 22 differences discussed in the previous section, 15 other possible associations between the functional role activities and the four demographic characteristics which were significant at $p = 0.06$ to $p = 0.10$. Three activities in the age group category were: food purchasing (determines the food items, $p = 0.06$); confers with sales persons ($p = 0.08$); and foodservice (checks the plate waste ($p = 0.07$). These categories also follow the previously mentioned tendency of delegation to foodservice supervisor.

Activities in the degree category also found three more associations. These included: sanitation (checks the refrigerator temperatures, p. = 0.07); equipment and layout (within existing limits, plans for use of space and equipment for maximum efficiency, $p = 0.09$); and therapeutics (confers with patients regarding modified diets, p. = 0.10). Also, Ohio consultants tended to share responsibilities or perform the responsibility themselves. Once again, the dietitian holding a bachelor's degree only tended not to accomplish the task.

The employment status category had six other relationships in addition to the ones previously mentioned. These included: records and reports (develops record of dietary progress notes for patients'

medical records, p = 0.06; maintains record of summary of food costs, p = 0.07; maintains record of budget, p = 0.08; and maintains record of staffing notes, p = 0.09); therapeutics (assesses drug-nutrient interrelationship, p = 0.09); and menu plenning (plans and writes personnel menus, p = 0.10). These results were also parallel to those previously mentioned.

Three other associations in the priority plan of work category were as follows: menu planning (files menus, p = 0.06); education and training (conducts nutrition education classes for patients and their families, p = 0.09); and dietary administration (hires department personnel, p = 0.10). Lastly, the consultants who wrote a plan of work delegated the responsibility or assumed the task. The tendency was again noted for consultants who did not write a plan of work to not accomplish the activity.

H_2: There will be no significant differences in the continuing education needs and issues of concern to CD-HCF in Ohio based on: (1) age, (2) highest degree attained, (3) employment status, and (4) plan of work to establish priorities before consultation visit with a facility.

The t-test and analysis of variance (ANOVA) were used to determine the effect of selected independent variables on perceived continuing educational needs through the calculation of mean differences. Significant differences were considered at the p = 0.05 level or less. The perceived opinion of very important, important, slightly important, and nonimportant was ascribed by respondents to each of the 47 categories which were under six main groupings (Appendix D). The value of 1-4 was assigned to each category, as previously described in

Chapter III. A value of one corresponds to being very important; thus, the lower the means, the more important the concern. The t-test procedure did not show any significant results; however, three differences were found using the analysis of variance (ANOVA) procedure. First, a difference existed between the continuing education need, entrepreneurial (establishing a consulting service), and employment status ($p = 0.02$) (Table XV). This group included: small business management, forming partnerships, record keeping systems, establishing a credit line, business logos, other symbols, and setting and collecting fees.

The second difference was seen in the continuing educational need, legal aspects, and employment status ($p = 0.02$) (Table XVI). Consultants who were employed less than full-time but more than half-time viewed legal aspects as slightly more important than those employed either full-time or part-time. The legal aspects components were: incorporation, malpractice insurance, and contractual agreement.

The third difference was seen in the continuing education needs, organization and management, and employment status ($p = 0.01$) (Table XVII). Again, consultants who were employed less than full-time but more than half-time viewed organization and management as slightly more important than those employed either full-time or half-time. The organization and management components were: developing, writing policies and procedures, staff development and in-service education, personnel management, working with unions, zero base budgeting, cost control, cost/benefit documentation, computer methods and application, equipment layout and design engineering, developing conservation policies and procedures, and productivity measurement and improvement.

TABLE XV

ANALYSIS OF VARIANCE TABLE FOR CONTINUING EDUCATION NEED: ENTREPRENEURIAL (ESTABLISHING A CONSULTING SERVICE)

Employment Status	df	Sum of Squares	Mean Square	F Value	Observed Significant Level
Between Groups	2	85.19	42.59	4.22	0.02
Within Groups	50	504.13	10.08		
Corrected Total	52	589.32			

TABLE XVI

ANALYSIS OF VARIANCE TABLE FOR CONTINUING EDUCATION NEED: LEGAL ASPECTS

Employment Status	df	Sum of Squares	Mean Square	F Value	Observed Significant Level
Between Groups	2	23.54	11.77	4.00	0.02
Within Groups	50	149.96	2.94		
Corrected Total	52	173.50			

TABLE XVII

ANALYSIS OF VARIANCE TABLE FOR CONTINUING EDUCATION NEED: ORGANIZATION AND MANAGEMENT

Employment Status	df	Sum of Squares	Mean Square	F Value	Observed Significant Level
Between Groups	2	261.60	130.80	5.55	0.01
Within Groups	50	1202.94	23.59		
Corrected Total	52	1464.54			

Based on the three significant (p = 0.05 or less) differences between the variables mentioned, the researcher rejected H_2.

CHAPTER V

SUMMARY, RECOMMENDATIONS, AND IMPLICATIONS

Today, the popular and growing trend for individualized nutritional counseling of people is concerned with maintenance of good health as opposed to earlier practices focused primarily on treatment of illness and disorders. The current media emphasis on nutrition assists by providing a variety of reasons for people to follow desirable nutritional practices.

As growth of the elderly population increases, the need for more facilities will also rise. Concurrently, more consultant dietitians will be needed who are employed by these organizations on a part- or full-time basis.

The review of literature has indicated that the consultant dietitian has had a noticeable influence in the field of dietetics; however, studies are limited that deal with the role of the consultant and his/her continuing education needs or issues of concern. Previous studies have indicated certain role functions to be common among consultant dietitians in various health care facilities and many areas of educational needs to be important (Brenner, 1971; Smith, 1975; Vanderveen, 1976; Spear, 1978; Gilbride, 1981; and Faye, 1982). As the role of the consultant dietitian changes and takes on new dimensions, and as technological and scientific findings open up new knowledge to be explored, it is important for research on consultants to

keep up with these developments. A recent study by Faye (1982) has made possible a comparative study of consultant dietitians between the more agricultural Oklahoma and the more populous, industrialized state of Ohio. This study was undertaken for this comparison of role functions and continuing education needs of consultants in health care facilities.

This study was conducted to discover the functional role (activities, responsibilities, or duties) and the continuing education needs and issues of concern by the consultant dietitians in health care facilities (CD-HCF). An eight page questionnaire developed and adapted from Faye (1982), Brenner (1971), Smith (1975), Vanderveen (1976), and Spear (1978) was used to survey 153 Ohio CD-HCF. A panel of experts made up of three Ohio consultant dietitians and three Oklahoma State University graduate faculty from the departments of statistics and food, nutrition and institution administration examined the instrument for content validity, clarity, and format. Two cover letters written by the president of the Ohio CD-HCF endorsing the study, and the researcher explaining the current research, accompanied the questionnaire. The survey consisted of 74 role functions and 47 continuing education needs or issues of concern.

Characteristics of the Respondents

All of the Ohio consultant dietitians in health care facilities were females, ranging in age from 20 to over 70 years. Fifty-four and one-half percent were 20-49 years old, while 45.5 percent were 49-70 years old. In Oklahoma, 81 percent of the respondents were in the 30-59 year old category (Faye, 1982). Three-fourths of the Ohio

consultant dietitians held bachelor degrees, while the remaining one-fourth held advanced degrees. The proportion of bachelor's to advanced degree holders was two-thirds to one-third in Oklahoma.

Characteristics of Professional Practice and Consultant Work Environment

Most respondents (three-quarters) graduated with a foods and nutrition degree. A mean of 6.45 years of experience was reported by part-time consultants. This compared to 7.57 years for Oklahoma dietitians. The mean for full-time consulting experience was 0.84 (n=57) year, as compared to 8.13 years (n=8) for Oklahoma dietitians. Half of the respondents were employed less than half-time (51%), almost one-third (29%) marked full-time status, while one-fifth (21%) were employed less than full-time but more than half-time. In contrast, 80 percent of Oklahoma consultant dietitians were employed either as less than half-time or less than full-time, but more than half-time. Only seven percent worked as full-time consultant dietitians. Seventy-nine percent of the respondents described their business arrangement as independent practice. Similar percentages were noted in the Oklahoma study.

Functional Role Analysis

The second section of the questionnaire consisted of 74 role functions (duties, responsibilities, or activities) which were categorized (by the consultant dietitian) as to who performed these responsibilities: consultant dietitian only, foodservice supervisor only, both assumed responsibility, or neither person assumed

responsibility. Results indicated that the consultant dietitian solely assumed three groupings of role functions: therapeutics, records and reports, and education and training (Table XVIII). Individually ranked role functions under the 11 groupings were delineated in the right hand column of Table XVIII. Faye (1982) reported that the Oklahoma consultant's major responsibilities were therapeutics, education, and training.

The consultant dietitian and foodservice supervisor jointly shared four of the major groupings: dietary administration, quality assurance, education and training, and sanitation (Table XVIII). In contrast, Oklahoma consultants and foodservice supervisors share these groupings: menu planning, foodservice, sanitation, and dietary administration. Ohio foodservice supervisors solely performed the following activities: records and reports, dietary administration, food purchasing, food preparation, foodservice, sanitation, menu planning, and education and training. Oklahoma's foodservice supervisors' responsibilities included maintaining records and reports, food preparation, and food purchasing.

The functional role grouping which was indicated by respondents as not being performed by either the foodservice supervisor or consultant dietitian was equipment and layout. Menu planning was not listed as a regular activity by the consultants. In comparison, Faye (1982) listed developing records and reports, and equipment and layout as not being performed by either the supervisor or the consultant.

Ninety percent of the Ohio consultant dietitians working in health care facilities viewed their role as one of providing advice and counsel. Oklahoma consultants (93%) reported similar findings.

TABLE XVIII

SUMMARY OF ROLE FUNCTIONS (DUTIES, RESPONSIBILITIES, OR ACTIVITIES)[1]

Performer	Role Group (n=11)	Role Function (n=74)
I. Consultant dietitian only	1. Therapeutics	a. Assesses nutritional status of residents (6A) b. Calculates modified diets (6B) c. Plans menus for modified diets (6C) d. Confers with patients regarding modified diets (6D) e. Adjusts modified diets (6E) f. Assesses drug-nutrient interrelationships (6F) g. Discusses diets with physicians (6G)
	2. Records and reports	a. Develops dietary progress notes for patient medical history (8A6) b. Develops summary of consultant visitation accomplishments (8A7) c. Maintains summary of consultant visitation accomplishments (8B7)
	3. Education and training	a. Conducts nutrition education classes for patients and their families (10D) b. Conducts nutrition education classes for professionals (10F)

TABLE XVIII (Continued)

Performer	Role Group (n=11)	Role Function (n=74)
II. Consultant dietitian and foodservice supervisor	1. Dietary administration	a. Communicates with other departments (7I) b. Develops department policies (7C) c. Develops department procedures (7B)
	2. Quality assurance	a. Checks texture and color of food served (11A) b. Maintains professional dietary standards (11C)
	3. Education and training	a. Conducts in-service training for foodservice employees (10b)
	4. Sanitation	a. Develops sanitation standards (5A)
III. Foodservice supervisor only	1. Records and reports	a. Develops inventory (8A4) b. Develops budget (8A5) c. Develops summary of food costs (8A2) d. Develops census records (8A1) e. Maintains census records (8B1) f. Maintains staff notes (8B3) g. Maintains summary of food costs (8B2) h. Develops staffing costs (8A3)

TABLE XVIII (Continued)

Performer	Role Group (n=11)	Role Function (n=74)
III. Foodservice supervisor only (continued)	2. Dietary administration	a. Initially interviews department personnel (7E) b. Hires department personnel (7F) c. Periodically evaluates personnel (7G) d. Conducts exit interviews with personnel (7H)
	3. Food purchasing	a. Determines the food items (2A) b. Confers with sales person (2D) c. Inspects the quality and quantity of deliveries (2E) d. Places orders (2C)
	4. Food preparation	a. Assigns work to employees (3F) b. Determines amount to be prepared (3C) c. Prepares menu items (3D)
	5. Foodservice	a. Supervises service and distribution of meals (4C) b. Maintains portion control (4B) c. Sueprvises dishing-up of menu items (4A)
	6. Sanitation	a. Maintains standards (5E) b. Establishes cleaning schedules and procedures (5D)

TABLE XVIII (Continued)

Performer	Role Group (n=11)	Role Function (n=74)
III. Foodservice supervisor only (continued)	7. Education and training	a. Conducts orientation for new employees (10A)
	8. Menu planning	a. Makes menu changes (1C)
IV. Not Performed	1. Equipment and layout	a. Keeps records of power load and gas requirements for each piece of equipment used in the facility (9B) b. Sets energy conservation goals for equipment use (9D) c. In remodeling and new construction, works with architect and others to intepret kitchen needs (9F)
	2. Education and training	a. Conducts in-service education in energy conservation (10C)
	3. Quality assurance	a. Administers self-evaluation tests to foodservice personnel (11D)
V. Varied performers/ activities not performed by 50% or more of one group	1. Menu planning	a. Plans and writes resident menus (1A) b. Plans and writes personnel menus (1B) c. Files menus (1D)

TABLE XVIII (Continued)

Performer	Role Group (n=11)	Role Function (n=74)
V. Varied performers/ activities not performed by 50% or more of one group (continued)	2. Food purchasing	a. Writes food specifications (2B)
	3. Food preparation	a. Standardizes recipes (3A) b. Modifies recipes for energy savings (3B) c. Tests menu items for taste and appearance
	4. Foodservice	a. Checks plate waste (4D)
	5. Sanitation	a. Checks dishwashing temperatures (5B) b. Checks refrigerator temperatures (5C) c. Assigns cleaning tasks (5F)
	6. Therapeutics	a. Discusses diets with physicians (6G)
	7. Dietary administration	a. Develops department organization (7A) b. Prepares job description (7D) c. Sets overall standards for quality assurance (7J)
	8. Records and reports	a. Develops cost/benefit changes suggested or implemented (8A8) b. Maintains inventories (8B4) c. Maintains budgets (8B5)

TABLE XVIII (Continued)

Performer	Role Group (n=11)	Role Function (n=74)
V. Varied performers/ activities not performed by 50% or more of one group (continued)	8. Records and reports (continued)	d. Maintains dietary progress notes for patient medical care (8B6) e. Maintains cost/benefit changes suggested or implemented (8B8)
	9. Equipment and layout	a. Within existing limits, plans for use of space and equipment for maximum efficiency (9A) b. Makes regular preventive maintenance checks of all equipment (9C) c. Assumes responsibility for layout and equipment of remodeled or new dietary facility (9G) d. Writes specifications for purchase of new equipment (9E)
	10. Quality assurance	a. Checks for proper food temperature (11B)

[1]The numbers and letter in parentheses provide the location on the questionnaire (Appendix B).

Ten percent of the Ohio consultants believed that their responsibilities included both advice, counsel, and direct supervision. One Oklahoma consultant responded with this answer, but two other Oklahoma consultants indicated that the consultant's position was one of direct supervision. Direct supervision usually is seen as a line function, whereas consultant positions which are viewed as staff functions normally offer advice and counsel to their clients. A high number of joint responsibilities might indicate that the dietitian was assuming a role of line function which a full-time dietitian would normally assume. Perhaps these dietitians might review the role delineation studies or begin to work on defining their own scope of practice.

Perceived Continuing Education Needs

As in Faye's study (1982), adapting to a facility grouping was rated as very important by consultant dietitians in Ohio. According to Kirton (1978), adaption as a skill could be utilized to modify an individual's actions to concur with the organization's goals. This skill may be catalyzed by the stimuli in the adaptive environment (Kirton, 1978). These findings concurred with the studies by Brenner (1971), Smith (1975), and Faye (1982).

The following groupings were perceived as next in importance to adapting to a facility: quality assurance and nutritional care, and organization and management. Other groupings were discussed in Chapter IV.

Testing the Hypotheses

Chi square values determined the relationship between 74 role

functions (duties, responsibilities, and activities) and age, degree, employment status, and establishment of a plan of work prior to consultation. Twenty-two relationships ($p > 0.05$) were noted. Faye (1982) noted 33 relationships.

Generally speaking, the younger of the two age groups tended to delegate more responsibilities to the foodservice supervisor, while the older group shared more responsibilities with the same. Similar results were reported by Faye (1982). Three comparisons between the functional role responsibilities and the highest degree attained included these summaries: both respondents with bachelor's and advanced degrees tended to delegate responsibilities to the foodservice supervisor. Dietitians holding only a bachelor's degree did not accomplish as many tasks.

A summary of the seven differences between functional role activities and employment status included the tendency for full-time consultants to delegate or share responsibilities with the foodservice supervisor. This supports Faye's (1982) findings in Oklahoma.

There was an association between nine functional activities and use of a plan of work to establish priorities when first entering the facility. Consultants who wrote a plan of work usually delegated role functions to the foodservice supervisor. Consultant dietitians who did not write a plan of work, however, either delegated the responsibilities or a number of activities were not accomplished.

A total of 22 relationships were found between the functional role responsibilities and the demographic characteristics of age, highest degree attained, employment status, and plan of work to

establish priorities before consultation in a facility at the $p < 0.05$ level; therefore, the researcher rejected H_1.

The t-test and analysis of variance (ANOVA) were used to determine the effects of age, degree, employment status, and completion of plan of work to establish priorities before consulting in a facility, and six major continuing education need groupings.
No significant differences were noted using the t-test analysis.

Three relationships were found ($p < 0.05$) using analysis of variance (ANOVA). These three major groupings of continuing education needs included: (1) entrepreneurial, (2) legal aspects, and (3) organization and management. The researcher rejected H_2 based on the three significant ($p < 0.05$) differences mentioned.

Recommendations

Suggestions for future studies should include the following items: frequency ratings in terms of time to evaluate further the extent to which the consultants perform each role function, and ranking of role functions by respondents as to the level of importance or time required to perform them. A larger sample should be used, possibly a random sample of the total population of the practice group consultant dietitians in health care facilities (CD-HCF) of the American Dietetic Association. The function and continuing education needs could also be separated into two studies to take a more in-depth look at each area. The survey instrument should be completely separated from the endorsement letter. In this study, some of the respondents detached the endorsement letter; hence, the demographic data which were on the back page of the letters was missing.

A follow-up procedure should be instituted, sending reminder postcards to each person approximately one week to 10 days after the questionnaire is mailed. Perhaps this would ensure a higher response rate.

It is possible that an observer might record a random number of consultant dietitians' typical day(s) of consulting vs. the consultants' interpretation of a typical or generalized day. Maintaining an anecdotal record or diary might be another procedure to record role functions as they are performed. Work sampling may be another way to study the consultant's role functions. An opinionnaire measuring the altruistic motives of a consultant is also suggested. Another ADA practice group, consultant dietitians in private practice, might be researched in terms of role functions and continuing education needs, as compared to the result of this and other studies.

Implications

Results from this study, previous studies, and perhaps other studies involving consultants, not only in health care facilities, but those in private practice as well, have implications for dietetic educators and practitioners who wish to go into consultation and employers of consultant dietitians. Information on functional roles and their applications may be incorporated into courses for both undergraduate and graduate students in dietetics. Practitioners who are generalists or specialists in other dietetic practice, such as clinical, administration, education, or research may profit from actually knowing what other skills are required to be able to consult effectively or to work in a preventive health care setting or

community setting. Employers of consultants could benefit from comprehending the multifaceted role of dietitians, various specialization roles, and what to expect from consultant dietitians. Scope of practice in dietetics is not only elusive but complicated and, hopefully, functional role studies can serve to enlighten or clarify roles, be it of a consultant dietitian or any other type of practitioner.

All 24 dietetic practice groups of the American Dietetics Association should be strongly encouraged to conduct similar research which could be used as a basis for the definition of dietitian and scope of practice. This definition of "practice" would be used by states which have a title act (voluntary) to further achieve the mandatory licensure act. Licensure encompassing title and scope of practice are to safeguard the public's health against unqualified individuals.

Since education is a lifelong process (ADA, 1969) a periodic survey to delineate the practitioners' needs is imperative. Continuing education needs should reflect the societal and technological trends, and knowing the practitioner's needs will facilitate the planning of courses, workshops, cassettes, or other modes of providing current information to dietetic professionals.

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APPENDIXES

APPENDIX A

CORRESPONDENCE

223 Willham N.
Stillwater, OK 74077
March 25, 1983

Pres. Sharon Emley, R.D.
Consultant
554 Knollcrest Court
Dayton, Ohio 45429

Dear Pres. Sharon Emley and Ohio Dietetic Assoc.:

I am writing to you for possible approval of assistance in my Master's thesis at Oklahoma State University.

As a June graduate of Ohio State University, I am at the Oklahoma State University for my internship requirement. Currently, I am taking graduate level coursework along with the requirements for the internship.

I would like to survey the consultant dietitians of Ohio and would like to obtain names and current addresses of this selective group in the Buckeye land.

Is it possible for me to obtain this information and contact these dietitians? I would, with the proper approval, commence research in the late summer or early fall.

Anxiously, I am waiting your reply. I will be at the above address until May 6, and then my address will be the following: Robin R. Fisher, 191 Bethesda St., Barnesville, Ohio 43713.

Thank you for your time and effort.

Sincerely,
Robin R. Fisher
Robin R. Fisher

223 Willham N.
Stillwater, OK 74077
March 25, 1983

President Sharon Emley, R.D.
Ohio Dietetic Association
554 Knollcrest Court
Dayton, Ohio 45429

Dear Ms. Emley:

As a June 1982 graduate of The Ohio State University, I Am currently completing the requirements of an administrative dietetic internship at Oklahoma State University in Stillwater, Oklahoma. As an intern, I am taking graduate level courses, which will count towards a master's degree in Food, Nutrition, and Institution Administration.

For my master's theses, I would like to survey the consultant dietitians in health care facilities in Ohio and would like to obtain permission from Ohio Dietetic Association and the current addresses of this group from the practice group. Is it possible for me to obtain this information and contact this group of dietitians? I would, with your approval, commence research in the late summer or early fall.

I will be waiting anxiously for your reply. You may reach me at my current address until May 6. From May 7 to 31st, I will be home at: 191 Bethesda St., Barnesville, Ohio 43713.

Thank you for your time, effort and assistance.

Sincerely,

Robin R Fisher

Robin R. Fisher

April 25, 1983
21260 Lake Road
Rocky River, OH 44116
216-476-7092 days
216-333-1408 evenings

Ms. Robin Fisher
223 Willham N.
Stillwater, OK 74077

Dear Robin,

Your request was sent from our Ohio Dietetic Association president Sharon Emley to our state Practice Group chairperson Lola Walston, R.D. The Executive Board approved your request since it is for educational purposes only.

Enclosed is our current state membership list of labels and a copy of the national membership list. Please check one against the other since many are members of both. There are many more names available that are currently not on either list but we feel you will have plenty without them.

We wish you success in your thesis and hope you will share your completed results with us at some future time.

Please feel free to contact Lola or myself if we can be of assistance.

Sincerely,

Eileen Gallagher

(Mrs.) Eileen S. Gallagher R.D.
Secretary/Treasurer

Mrs. Lola Watson
4185 Grossepoint
Springfield, OH 45502

42 Brentwood
Stillwater, OK 74074
September 1, 1983

Mrs. Lola Walston, R.D.
Ohio Consultant Practice Group
4185 Grossepoint
Springfield, OH 45502

Dear Mrs. Walston:

This letter is to inform you of my progress on my Master's thesis on the role functions and continuing education needs of the Consultant Dietitians in Ohio.

The preliminary research activities have been completed, and I will be mailing my draft survey/questionnaire as soon as they are printed. Kindly send me a current or updated mailing list of the Ohio Consultant Dietitians in Health Care Facilities.

Thank you for your assistance in my research. I will keep you informed of further progress.

Sincerely,

Robin R. Fisher

Robin R. Fisher

Lola Walston
4185 Grossepoint Street
Springfield, Ohio 45502

Sept. 16, 1983

Dear Robin;

Enclosed is a copy of a mailing list for the current Consultant Dietitians in the State of Ohio.

Because of the copy machine that was used some of the names were left off so I wrote them on the back of two pages.

Good luck in your research. I would be interested to learn what your findings are.

Sincerely,
Lola Walston

42 Brentwood
Stillwater, OK 74074
September 22, 1983

Lola Walston, R.D.
Chairperson
Ohio Consultant Dietitians in Health Care Facilities
4185 Grossepoint Street
Springfield, Ohio 45502

Dear Lola:

Thank you for sending me a copy of the current mailing list for the Consultant Dietitians in the State of Ohio. I appreciate the promptness of your reply.

Enclosed are three copies of the rough draft survey that I would like to use in my study. Please fill out one of the surveys, and have two other dietitians, possibly officers of your practice group to do likewise.

It would be helpful if each of you recorded the time necessary to complete the survey along with suggestions on items which you believe need clarification. I also need your suggestions regarding format.

Kindly return the surveys within ten days so that I can finalize the instrument, have them printed and mailed out before the holidays.

Thank you for your time, assistance and cooperation.

Sincerely,

Robin R. Fisher

Robin R. Fisher

42 Brentwood
Stillwater, OK 74075
October 4, 1983

Lola Walston, R.D.
President
Ohio Consultant Dietitians in Health Care Facilities
Springfield, OH 45502

Dear Lola:

Thank you for returning your 'sample' survey so promptly. Current progress on my research is that I hope to have my first committee meeting the end of this month. My goal is to be mailing the surveys the first part of November so as to avoid the Thanksgiving holidays.

I would appreciate your writing a letter to use as a cover letter to endorse the survey. I feel this would encourage better response from the dietitians.

Please include in the letter that I am a graduate of Ohio State University and plan to return to Ohio upon receiving my Master's degree (I completed my internship here at Oklahoma State). I have enclosed a copy of a letter used in a similar study for your reference.

It would be helpful if the letter were 'camera-ready', however, if this is not possible, you may send me your letter with your letterhead and I will see that this is accomplished.

Thank you again for your cooperation.

Sincerely,
Robin R. Fisher
Robin R. Fisher

Lola Walston
4185 Grossepoint Street
Springfield, Ohio 45502

Oct. 20, 1983

Dear Robin;

I hope the letter that is enclosed will meet your needs. I didnt have any letterheads from our organization and had to wait for the secretary to send me some.

Continued suggests on your research.

Sincerely,
Lola Walston

January 7, 1984

Dear _____:*

Thank you for your participation in the survey on Consultant Dietitians in Health Care Facilities in Ohio Your survey was well appreciated.

I am currently coding the surveys; however, I noticed the first page was missing on your returned survey.

Please complete and return this page as soon as possible. Thank you again.

Sincerely,

Robin R. Fisher, R.D.

Robin R. Fisher, R.D.

*Text of a handwritten note enclosed with first page of a second questionnaire. Blank was filled in with individual consultant's name.

APPENDIX B

RESEARCH INSTRUMENT

THE OHIO CONSULTANT DIETITIANS IN HEALTH CARE FACILITIES
Practice Group of The American Dietetic Association

Oct, 20, 1983

Dear Ohio Consultant Dietitian:

Please find enclosed a questionnaire that Robin Fisher has developed. Robin is a master's degree candidate at Oklahoma State University and is a graduate of Ohio State University. She plans on returning to Ohio upon receiving her Master's degree. Her internship was completed at Oklahoma State.

I have participated in reviewing the questionnaire along with Kathleen Naughton, chairperson elect and Melanie Thomas, past chairperson of the Ohio Consultant Dietitians in Health Care Facilities Practice Group. We would appreciate your cooperation in answering the questionnaire and returning it to Robin.

The results will not only provide information for Robin to complete her master's degree but will also be shared with the OCD-HCF executive board officers and used to develop activities and programs that hopefully will be of interest and value to you.

Thank you for completing the questionnaire and returning it.

Sincerely,

Lola Walston

Lola Walston, R.D.
Chairperson
OCD-HCF

Oklahoma State University

Department of Food, Nutrition and Institution Administration

STILLWATER, OKLAHOMA 74078
(405) 624-5039

October 31, 1983

Dear Consultant Dietitian:

We would like to ask for your assistance in conducting a study of a 'Functional Analysis and Continuing Education Needs Assessment of Consultant Dietitians in Health Care Facilities in Ohio'. In 1976, Vanderveen conducted a study on the identification of perceived educational needs and preferred learning activities of selected dietitians in Ohio; however, there have been no recent studies in Ohio specifically on the consultant dietitian in health care. There have been similar studies on consultant dietitians in Oklahoma, Tennessee, New York and Kansas.

Currently, there are over one million elderly in Ohio. Eight states, of which Ohio is one, support three-fourths of the elderly population in America. The information gained from this study will hopefully provide valuable assistance to consultant dietitians in health care facilities.

The purpose of this study is to gain information to develop professional continuing education programs. This study is also to assist those interested in being a consultant dietitian to know what the career world is really like. The information will be held in strict confidence. The code number is only for data tabulation and not for identification.

It will take you approximately 15-20 minutes to complete this questionnaire. Your time and effort are greatly appreciated. Please return by Nov. 28, 1983. Kindly refold, staple and return completed questionnaire. Postage is furnished for your convenience. Thank you.

Sincerely,

Robin R. Fisher
Graduate Research Asst.

Lea Ebro, Ph.D., R.D.
Associate Professor

QUESTIONNAIRE STARTS ON BACK OF LETTER

OHIO CONSULTANT DIETITIAN - HEALTH CARE FACILITY SURVEY

I. General Information

Directions: Please fill out every question by checking the appropriate answer.

1. Age group: _____(1) 20-29 _____(3) 40-49 _____(5) 60-69
   _____(2) 30-39 _____(4) 50-59 _____(6) 70 or more

2. Degree(s) completed:
   _____(1) B.S.
   _____(2) M.S.
   _____(3) Ph.D.

   Major Emphasis:
   (1)_____
   (2)_____
   (3)_____

3. Professional affiliations:
   _____(1) ADA Practice Group, Consultant Dietitians in Health Care Facilities
   _____(2) American Society of Hospital Food Service Administrators
   _____(3) Other_____

4. Average number of hours per week spent reading professional literature_____

5. Total number of years of experience in these areas:

	Full time	Part time
(1) As a consultant		
(2) Other dietetic practice		

6. Present employment status:
   _____(1) Full time (35 hours or more)
   _____(2) Half time or more but less than full time
   _____(3) Less than half time

7. Work arrangement:
   _____(1) Independent practice
   _____(2) Partnership or group
   _____(3) Corporate Dietitian
   _____(4) Other_____

8. Business base location:
   _____(1) Private residence
   _____(2) Separate business office
   _____(3) Corporate Office
   _____(4) Other_____

9. Check all the activities that you perform before accepting a new account:
   _____(1) Review the complete facility
   _____(2) Review only the dietary department
   _____(3) Observe the foodservice
   _____(4) Become acquainted with the foodservice personnel
   _____(5) Evaluate the foodservice
   _____(6) Talk with the administrator of problem areas
   _____(7) Talk with the foodservice supervisor of problem areas
   _____(8) Talk with the director of nurses of problem areas
   _____(9) Check mileage from business
   _____(10) Other_____

10. Check the type of agreement that you have with your facilities:
    _____(1) Legal contract _____(3) Corporate contract _____(5) Have no agreement
    _____(2) Written agreement _____(4) Verbal agreement _____(6) Other_____

11. When first entering a facility do you write a plan of work which establishes your priorities for foodservice?
    _____(1) Yes _____(2) No

12. When first taking a new account how many hours per month, on average, do you spend at a facility?_____

13. After having an account for one year or more, how many hours per month, on average, do you spend at facility?_____

14. Do you ever do any of your work for a facility away from the facilities you serve? _____(1) No _____(2) Yes
    If 'yes', how many hours _____

15. Do you use a computer to help in your consulting practice? _____(1) No _____(2) Yes If 'yes', please describe type and extent of usage? _____

16. What is your consulting fee per hour? _____ If corporate dietitian, please compute equivalent hourly rate?_____

17. Do you have any plans to raise your fees in the next year? _____(1) Yes _____(2) No If 'yes', how much?_____

18. Are you covered by malpractice insurance? _____(1) Yes _____(2) No

19. Are you interested in acquiring additional accounts? _____(1) Yes _____(2) No If 'yes', approximately how many more?_____

20. Does your hourly consulting fee include fringe benefits? _____(1) Yes _____(2) No

21. How are you paid for travel?
    _____(1) Hourly _____(2) Mileage _____(3) Both _____(4) Neither

I. General Information (continued)

22. Please complete the following chart by placing the correct facility code in the code column. These codes are listed below. Then, complete all of the rest of the columns, attaching a sheet for more accounts than ten.

Use the following codes to indicate type of facility:
- A. Intermediate Care
- B. Skilled Care Nursing
- C. Residential Care
- D. Mental Retardation Center
- E. Community Mental Health Center
- F. Hospital
- G. Congregate Nutrition Sites
- H. Other, please specify _____

	Account number	Type of facility (code)	Distance from base to each facility (miles)	Number of beds or participants/facility	Hours per month	Length of time employeed/facility
(1)						
(2)						
(3)						
(4)						
(5)						
(6)						
(7)						
(8)						
(9)						
(10)						

II. Role Functions

This section lists the functions and activities which may be performed by the consultant dietitian (CD) and/or foodservice supervisor (FS) in health care facilities. Answer each question as an overview of all the accounts which you presently serve.

Directions: Read each activity and check the appropriate column (1-4) which best describes the activity; either CD only, CD and FS, FS only, or neither CD or FS.

	CD	FS	BOTH	NEITHER
1. Menu Planning				
(A) Plans and writes resident menus				
(B) Plans and writes personnel menus				
(C) Makes menu changes				
(D) Files menus				
2. Food Purchasing				
(A) Determines the food items				
(B) Writes food specifications				
(C) Places orders				
(D) Confers with sales persons				
(E) Inspects the quality and quantity of deliveries				
3. Food Preparation				
(A) Standardizes recipes				
(B) Modifies recipes for energy savings				
(C) Determines amount to be prepared				
(D) Prepares menu items				
(E) Tests menu items for taste and appearance				
(F) Assigns work to employees				

II. Role Functions (continued) Directions: Read each activity and check the appropriate column (1-4).

	CD	FS	BOTH	NEITHER
4. Foodservice				
(A) Supervises the dishing-up of menu items				
(B) Maintains portion control				
(C) Supervises service and distribution of meals				
(D) Checks plate waste				
5. Sanitation				
(A) Establishes sanitation standards				
(B) Checks dishwashing temperatures				
(C) Checks refrigerator temperatures				
(D) Establishes cleaning schedules and procedures				
(E) Maintains standards				
(F) Assigns cleaning tasks				
6. Therapeutics				
(A) Assesses nutritional status of residents				
(B) Calculates modified diets				
(C) Plans menus for modified diets				
(D) Confers with patients regarding modified diets				
(E) Adjusts modified diets				
(F) Assesses drug-nutrient interrelationships				
(G) Discusses diets with physicians				
7. Dietary Administration				
(A) Develops department organization				
(B) Develops department procedures				
(C) Develops department policies				
(D) Prepares job descriptions				
(E) Initially interviews department personnel				
(F) Hires department personnel				
(G) Periodically evaluates personnel				
(H) Conducts exit interviews with personnel				
(I) Communicates with other departments				
(J) Sets overall standards for quality assurance				
8. Records and Reports				
A. Develops the following records or reports				
(1) Census records				
(2) Summary of food costs				
(3) Staffing costs				
(4) Inventories				
(5) Budgets				
(6) Dietary progress notes for patient medical record				
(7) Summary of consultant visitation accomplishments				
(8) Cost/benefit changes suggested or implemented				
B. Maintains the following records or reports				
(1) Census records				
(2) Summary of food costs				
(3) Staffing notes				
(4) Inventories				
(5) Budgets				
(6) Dietary progress notes for patient medical report				
(7) Summary of consultant visitation accomplishments				
(8) Cost/benefit changes suggested or implemented				

II. Role Functions (continued) Directions: Read each activity and check the appropriate column (1-4)

	CD	FS	BOTH	NEITHER
9. Equipment and Layout				
(A) Within existing limits, plans for use of space and equipment for maximum efficiency				
(B) Keeps records of power load and gas requirements for each piece of equipment used in the facility				
(C) Makes regular preventive maintenance checks of all equipment				
(D) Sets energy conservation goals for equipment use				
(E) Writes specifications for purchase of new equipment				
(F) In remodeling and new construction, works with architect and others to interpret kitchen needs				
(G) Assumes responsibility for layout and equipment of remodeled or new dietary facility				
10. Education and Training				
(A) Conducts orientation for new employees				
(B) Conducts in-service training for foodservice employees				
(C) Conducts in-service education in energy conservation				
(D) Conducts nutrition education for patients and their families				
(E) Conducts nutrition education for professionals				
11. Quality Assurance				
(A) Checks texture and color of food served				
(B) Checks for proper food temperature				
(C) Maintains professional dietary standards				
(D) Administers self-evaluation tests to foodservice personnel				

Directions: Please answer all questions by filling in the appropriate blank.

1. Do you see your responsibilities primarily as providing advice and counsel to the dietary departments or as directly supervising the operations in the facilities you serve?
   _____(1) Advice and counsel
   _____(2) Direct supervision
   _____(3) (1) and (2)
   _____(4) Other_____
2. Do you believe that the time you spend in the facilities you serve is adequate to accomplish all that needs to be accomplished? _____(1) Yes _____(2) No
3. What is the minimum number of years of experience that you would recommend before beginning a career as a consultant? _____
4. Check the description that best expresses your attitude toward consulting as a career.
   _____(1) Highly satisifying _____(2) Moderately satisifying _____(3) Not satisifying
5. Please indicate how well your education and training has prepared you to perform as a consultant dietitian.
   _____(1) Very inadequate _____(3) Adequate, needs little improvement
   _____(2) Somewhat inadequate, needs improvement _____(4) Completely adequate
   If your answer was (1) or (2), please make suggestions:_____

III. Continuing Education Needs

Below is a list of possible continuing education concerns and responsibilities of consulting dietitians in health care facilities. Check the term that best describes your opinion of the importance of each topic as a continuing education need.

	Very important	Important	Slightly important	Unimportant
1. Entrepreneurial (establishing a consulting service)				
(A) Small business management				
(B) Forming partnerships				
(C) Record keeping systems				
(D) Establishing a credit line				
(E) Business logos, other symbols				
(F) Setting and collecting fees				
2. Legal Aspects				
(A) Incorporation				
(B) Malpractice Insurance				
(C) Contractual agreement				
3. Adapting to a Facility				
(A) Evaluation of a prospective facility				
(B) Working with the administrator				
(C) Working with a foodservice supervisor				
(D) State and federal regulations				
4. Organization and Management				
(A) Developing and writing policies and procedures				
(B) Staff development and in-service education				
(C) Personnel management				
(D) Working with unions				
(E) Zero base budgeting				
(F) Cost control				
(G) Cost/benefit documentation				
(H) Computer methods and applications				
(I) Equipment layout and design engineering				
(J) Developing energy conservation policies and procedures				
(K) Productivity measurement and improvement				

III. Continuing Education Needs (continued)
Directions: Check the term that best describes your opinion of the importance of each topic as a continuing education need.

	Very important	Important	Slightly important	Unimportant
5. Working as a Professional				
(A) Professional dress and tools of the trade				
(B) Professional conduct and ethics				
(C) Time and stress management				
(D) Interviewing techniques				
(E) Media relationships				
(F) Writing for professional journals				
(G) Writing for popular media (news, T.V., radio)				
(H) Interpretation and application of new research				
(I) Licensure				
6. Quality Assurance and Nutritional Care				
(A) Overall standards for quality assurance				
(B) Third party reimbursement				
(C) Implementation of diagnosis-related groups				
(D) Patient rights standards				
(E) Nutritional assessment				
(F) Socio-cultural influences and food behavior				
(G) Charting and documentation				
(H) Patient care plans and audits				
(I) Behavior modification				
(J) Medical history high-risk conditions				
(K) Food-drug interrelationships				
(L) Nutritional implications of chronic disorders				
(M) Gerontology/study of aging				
(N) Principles of sanitation and food safety including techniques for inspection				

7. Please list other educational needs you feel need to be included:

_____

_____

Thank you for your participation!

APPENDIX C

STATISTICAL ANALYSIS SYSTEM SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=2									
DIST	13	36 46153846	23 39378616	2 00000000	65 00000000	6 48826889	474 00000000	547 2692308	64 160
SIZE	13	71 61538462	72 63325508	25 00000000	300 00000000	20 14484042	931 00000000	5275 5897436	101 421
HOUR	13	6 53846154	4 13552465	4 00000000	16 00000000	1 14698817	85 00000000	17 1025641	63 249
YEAR	13	3 15384615	3 60199375	1 00000000	15 00000000	0 99901332	41 00000000	12 9743590	114 210
ID=8									
DIST	2	19 00000000	9 89949494	12 00000000	26 00000000	7 00000000	38 00000000	98 00000000	52 103
SIZE	2	100 00000000	0 00000000	100 00000000	100 00000000	0 00000000	200 00000000	0 00000000	0 000
HOUR	2	24 00000000	11 31370850	16 00000000	32 00000000	8 00000000	48 00000000	128 00000000	47 140
YEAR	2	9 00000000	8 48528137	3 00000000	15 00000000	6 00000000	18 00000000	72 00000000	94 281
ID=9									
DIST	1	10 00000000		10 00000000	10 00000000		10 00000000		
SIZE	1	177 00000000		177 00000000	177 00000000		177 00000000		
HOUR	1	64 00000000		64 00000000	64 00000000		64 00000000		
YEAR	1	12 00000000		12 00000000	12 00000000		12 00000000		
ID=10									
DIST	1	8 00000000		8 00000000	8 00000000		8 00000000		
SIZE	1	43 00000000		43 00000000	43 00000000		43 00000000		
HOUR	1	7 00000000		7 00000000	7 00000000		7 00000000		
YEAR	1	2 00000000		2 00000000	2 00000000		2 00000000		
ID=11									
DIST	3	18 66666667	7 50555350	11 00000000	26 00000000	4 33333333	56 00000000	56 3333333	40 208
SIZE	3	106 66666667	66 58328118	50 00000000	180 00000000	38 44187532	320 00000000	4433 3333333	62 422
HOUR	3	4 33333333	3 51188458	1 00000000	8 00000000	2 02758751	13.00000000	12 3333333	81 043
YEAR	3	2 33333333	2 30940108	1 00000000	5 00000000	1 33333333	7 00000000	5 3333333	98 974
ID=16									
DIST	1	2 00000000		2 00000000	2 00000000		2 00000000		
SIZE	1	320 00000000		320 00000000	320 00000000		320 00000000		
HOUR	1	99 00000000		99 00000000	99 00000000		99 00000000		
YEAR	1	23 00000000		23 00000000	23 00000000		23 00000000		
ID=22									
DIST	2	24 00000000	5 65685425	20.00000000	28 00000000	4 00000000	48.00000000	32 000000	23 570
SIZE	2	117 00000000	101 82337649	45 00000000	189 00000000	72 00000000	234 00000000	10368 000000	87 029
HOUR	2	40 50000000	33 23401872	17 00000000	64.00000000	23 50000000	81 00000000	1104 500000	82 059
YEAR	2	2 50000000	2 12132034	1 00000000	4 00000000	1 50000000	5 00000000	4 500000	84 853

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=128									
DIST	3	22 00000000	10 58300524	10 00000000	30 00000000	6 11010093	66 00000000	112 0000000	48 105
SIZE	3	66 66666667	32 08322511	36 00000000	100 00000000	18 52325865	200 00000000	1029 3333333	48 125
HOUR	3	10 33333333	4 04145188	8 00000000	15 00000000	2 33333333	31 00000000	16 3333333	39 111
YEAR	3	1 33333333	0 57735027	1 00000000	2 00000000	0 33333333	4 00000000	0 3333333	43 301
ID=131									
DIST	10	44 00000000	24 20284648	16 00000000	100 00000000	7 65361207	440 00000000	585 77777778	55 006
SIZE	10	83 60000000	22 02624697	50 00000000	100 00000000	6 96531087	836 00000000	485 15555556	26 347
HOUR	10	14 40000000	3 37309617	8 00000000	16 00000000	1 06666667	144 00000000	11 37777778	23 424
YEAR	10	3 00000000	0 00000000	3 00000000	3 00000000	0 00000000	30 00000000	0 00000000	0 000
ID=134									
DIST	4	157 50000000	33 29164059	110 00000000	185 00000000	16 64582030	630 00000000	1108 3333333	21 138
SIZE	4	112 50000000	25 00000000	100 00000000	150 00000000	12 50000000	450 00000000	625 0000000	22 222
HOUR	4	8 75000000	2 21735578	7 00000000	12 00000000	1 10867789	35 00000000	4 9166667	25 341
YEAR	4	8 75000000	2 98607881	5 00000000	12 00000000	1 49303941	35 00000000	8 9166667	34 127
ID=137									
DIST	4	10 75000000	7 27438428	4 00000000	20 00000000	3 63719214	43 00000000	52 916667	67 669
SIZE	4	206 25000000	180 71040369	100 00000000	475 00000000	90 35520184	825 00000000	32656 250000	87 617
HOUR	4	32 25000000	44 50000000	10 00000000	99 00000000	22 25000000	129.00000000	1980 250000	137 984
YEAR	4	8 50000000	4 04145188	5 00000000	14 00000000	2 02072594	34 00000000	16 333333	47 546
ID=139									
DIST	1	1 00000000		1 00000000	1 00000000		1 00000000		
SIZE	1	145 00000000		145 00000000	145 00000000		145 00000000		
HOUR	1	45 00000000		45 00000000	45 00000000		45 00000000		
YEAR	1	3 00000000		3 00000000	3 00000000		3.00000000		
ID=140									
DIST	4	6 50000000	3 10912635	3 00000000	10 00000000	1 55456318	26 00000000	9.6666667	47 833
SIZE	4	179 75000000	83 94591513	85 00000000	260 00000000	41 97295756	719 00000000	7046 9166667	46 701
HOUR	4	15 00000000	2 00000000	12 00000000	16 00000000	1 00000000	60 00000000	4 0000000	13 333
YEAR	4	3 75000000	1 50000000	2 00000000	5 00000000	0 75000000	15 00000000	2 2500000	40 000
ID=146									
DIST	2	6 50000000	2 12132034	5 00000000	8 00000000	1 50000000	13 00000000	4 5000000	32 636
SIZE	2	54 50000000	62 93250353	10 00000000	99 00000000	44 50000000	109 00000000	3960 5000000	115 472
HOUR	2	3 50000000	0 70710678	3 00000000	4.00000000	0 50000000	7 00000000	0 5000000	20 203
YEAR	2	4 00000000	2 82842712	2 00000000	6 00000000	2 00000000	8 00000000	8 0000000	70 711

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=112									
DIST	1	18 00000000		18 00000000	18 00000000		18 00000000		
SIZE	1	60 00000000		60 00000000	60 00000000		60 00000000		
HOUR	1	12 00000000		12 00000000	12 00000000		12 00000000		
YEAR	1	3 00000000		3 00000000	3 00000000		3 00000000		
ID=113									
DIST	2	28 00000000	2 82842712	26 00000000	30 00000000	2 00000000	56 00000000	8 0000000	10 102
SIZE	2	57 50000000	38 89087297	30 00000000	85 00000000	27 50000000	115 00000000	1512 5000000	67 636
HOUR	2	3 00000000	1 41421356	2 00000000	4 00000000	1 00000000	6 00000000	2 0000000	47 140
YEAR	2	7 00000000	2 82842712	5 00000000	9 00000000	2 00000000	14 00000000	8 0000000	40 406
ID=114									
DIST	4	35 00000000	23 45207880	10 00000000	65 00000000	11 72603940	140 00000000	550 00000000	67 006
SIZE	4	61 00000000	26 05123158	46 00000000	100 00000000	13 02561579	244 00000000	678 66666667	42 707
HOUR	4	5 00000000	2 00000000	4 00000000	8 00000000	1 00000000	20 00000000	4 00000000	40 000
YEAR	4	5 25000000	4 03112887	1 00000000	10 00000000	2 01556444	21 00000000	16 25000000	76 783
ID=116									
DIST	5	120 00000000	14 14213562	100 00000000	140 00000000	6 32455532	600 00000000	200 00000000	11 785
SIZE	5	28 00000000	30 69201851	8 00000000	80 00000000	13 72588795	140 00000000	942 00000000	109 614
HOUR	5	18 00000000	18 57417562	5 00000000	45 00000000	8 30662386	90 00000000	345 00000000	103 190
YEAR	5	1 00000000	0 00000000	1 00000000	1 00000000	0 00000000	5 00000000	0 00000000	0 000
ID=119									
DIST	2	1 50000000	0 70710678	1 00000000	2 00000000	0 50000000	3 00000000	0 50000000	47 140
SIZE	2	50 00000000	0 00000000	50 00000000	50 00000000	0 00000000	100 00000000	0 00000000	0 000
HOUR	2	8 00000000	0 00000000	8 00000000	8 00000000	0 00000000	16 00000000	0 00000000	0 000
YEAR	2	2 00000000	0 00000000	2 00000000	2 00000000	0 00000000	4 00000000	0 00000000	0 000
ID=124									
DIST	3	28 33333333	7 63762616	20 00000000	35.00000000	4 40958552	85 00000000	58 3333333	26 956
SIZE	3	75 00000000	43 30127019	25 00000000	100 00000000	25.00000000	225 00000000	1875 0000000	57 735
HOUR	3	10 66666667	2 30940108	8 00000000	12 00000000	1 33333333	32 00000000	5 3333333	21 651
YEAR	3	5 00000000	0 00000000	5 00000000	5.00000000	0 00000000	15 00000000	0 0000000	0 000
ID=125									
DIST	11	41 81818182	22 81148036	20 00000000	90 00000000	6 87792012	460 00000000	520 3636364	54 549
SIZE	11	81 36363636	50 69965035	25 00000000	200 00000000	15 28651975	895 00000000	2570 4545455	62 312
HOUR	11	10 81818182	8 75006493	4 00000000	30 00000000	2 63824384	119.00000000	76 5636364	80 883
YEAR	11	1 36363636	0 50452498	1 00000000	2 00000000	0 15212000	15 00000000	0 2545455	36 998

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=84									
DIST	1	9.00000000		9.00000000	9.00000000		9.00000000		
SIZE	1	170.00000000		170.00000000	170.00000000		170.00000000		
HOUR	1	8.00000000		8.00000000	8.00000000		8.00000000		
YEAR	1	5.00000000		5.00000000	5.00000000		5.00000000		
ID=85									
DIST	2	8.00000000	9.89949494	1.00000000	15.00000000	7.00000000	16.00000000	98.0000000	123.744
SIZE	2	75.00000000	35.35533906	50.00000000	100.00000000	25.00000000	150.00000000	1250.0000000	47.140
HOUR	2	16.00000000	11.31370850	8.00000000	24.00000000	8.00000000	32.00000000	128.0000000	70.711
YEAR	2	4.00000000	0.00000000	4.00000000	4.00000000	0.00000000	8.00000000	0.0000000	0.000
ID=89									
DIST	2	1.00000000	1.41421356	0.00000000	2.00000000	1.00000000	2.00000000	2.0000000	141.421
SIZE	2	227.50000000	53.03300859	190.00000000	265.00000000	37.50000000	455.00000000	2812.5000000	23.311
HOUR	2	22.00000000	25.45584412	4.00000000	40.00000000	18.00000000	44.00000000	648.0000000	115.708
YEAR	2	19.00000000	12.72792206	10.00000000	28.00000000	9.00000000	38.00000000	162.0000000	66.989
ID=94									
DIST	4	61.25000000	21.74664725	40.00000000	80.00000000	10.87332363	245.00000000	472.91666667	35.505
SIZE	4	68.75000000	23.93567769	50.00000000	100.00000000	11.96783885	275.00000000	572.91666667	34.816
HOUR	4	9.50000000	1.91485422	8.00000000	12.00000000	0.95742711	38.00000000	3.66666667	20.156
YEAR	4	5.50000000	2.38047614	2.00000000	7.00000000	1.19023807	22.00000000	5.66666667	43.281
ID=95									
DIST	3	10.00000000	2.00000000	8.00000000	12.00000000	1.15470054	30.00000000	4.0000000	20.000
SIZE	3	46.66666667	46.18802154	20.00000000	100.00000000	26.66666667	140.00000000	2133.3333333	98.974
HOUR	3	6.66666667	4.61880215	4.00000000	12.00000000	2.66666667	20.00000000	21.3333333	69.282
YEAR	3	1.33333333	0.57735027	1.00000000	2.00000000	0.33333333	4.00000000	0.3333333	43.301
ID=106									
DIST	14	79.85714286	82.81569634	1.00000000	270.00000000	22.13342585	1118.0000000	6858.4395604	103.705
SIZE	14	100.57142857	13.59702618	61.00000000	121.00000000	3.63395810	1408.0000000	184.8791209	13.520
HOUR	14	8.57142857	5.84036729	0.00000000	24.00000000	1.56090382	120.0000000	34.1098901	68.138
YEAR	14	6.21428571	1.96815304	1.00000000	8.00000000	0.52601102	87.0000000	3.8736264	31.671
ID=111									
DIST	3	18.66666667	7.50555350	11.00000000	26.00000000	4.33333333	56.00000000	56.3333333	40.208
SIZE	3	106.66666667	66.58328118	50.00000000	180.00000000	38.44187532	320.00000000	4433.3333333	62.422
HOUR	3	4.33333333	3.51188458	1.00000000	8.00000000	2.02758751	13.00000000	12.3333333	81.043
YEAR	3	2.33333333	2.30940108	1.00000000	5.00000000	1.33333333	7.00000000	5.3333333	98.974

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=74									
DIST	2	4 00000000	1 41421356	3 00000000	5 00000000	1 00000000	8 00000000	2 0000000	35 355
SIZE	2	105 00000000	63 63961031	60 00000000	150 00000000	45 00000000	210 00000000	4050 0000000	60 609
HOUR	2	8 00000000	0 00000000	8 00000000	8 00000000	0 00000000	16 00000000	0 0000000	0 000
YEAR	2	5 00000000	4 24264069	2 00000000	8 00000000	3 00000000	10 00000000	18 0000000	84 853
ID=76									
DIST	9	68 88888889	54 91685635	2 00000000	170 00000000	18 30561878	620 00000000	3015 8611111	79 718
SIZE	9	66 66666667	25 00000000	50 00000000	100 00000000	8 33333333	600 00000000	625 0000000	37 500
HOUR	9	9 77777778	4 05517502	8 00000000	20 00000000	1 35172501	88 00000000	16 4444444	41 473
YEAR	9	1 00000000	0 00000000	1 00000000	1 00000000	0 00000000	9 00000000	0 0000000	0 000
ID=78									
DIST	1	18 00000000		18 00000000	18 00000000		18 00000000		
SIZE	1	35 00000000		35 00000000	35 00000000		35 00000000		
HOUR	1	10 00000000		10 00000000	10 00000000		10 00000000		
YEAR	1	1 00000000		1 00000000	1 00000000		1 00000000		
ID=79									
DIST	4	24 00000000	4 24264069	21 00000000	30 00000000	2 12132034	96 00000000	18 0000000	17 678
SIZE	4	94 50000000	31 00000000	50 00000000	120 00000000	15 50000000	378 00000000	961 0000000	32 804
HOUR	4	34 75000000	43 12288642	8 00000000	99 00000000	21 56144321	139 00000000	1859 5833333	124 095
YEAR	4	3 25000000	2 06155281	1 00000000	6 00000000	1 03077641	13 00000000	4 2500000	63 432
ID=80									
DIST	2	3 00000000	1 41421356	2 00000000	4 00000000	1 00000000	6 00000000	2 0000000	47 140
SIZE	2	70 50000000	53 03300859	33 00000000	108 00000000	37 50000000	141 00000000	2812 5000000	75 224
HOUR	2	17 50000000	10 60660172	10 00000000	25 00000000	7 50000000	35 00000000	112 5000000	60 609
YEAR	2	5 00000000	0 00000000	5 00000000	5 00000000	0 00000000	10 00000000	0 0000000	0 000
ID=81									
DIST	8	18 62500000	3 58319490	14 00000000	25 00000000	1.26685071	149 00000000	12 83928571	19 239
SIZE	8	46 87500000	13 61131357	25 00000000	60 00000000	4 81232606	375 00000000	185 26785714	29 037
HOUR	8	6 75000000	3 99106144	4 00000000	16 00000000	1 41105330	54 00000000	15 92857143	59 127
YEAR	8	5 50000000	6 61167798	1 00000000	16 00000000	2 33758117	44 00000000	43 71428571	120 212
ID=83									
DIST	4	17 00000000	12 08304597	10 00000000	35 00000000	6 04152299	68 00000000	146 00000000	71 077
SIZE	4	143 00000000	21 02379604	120 00000000	171 00000000	10 51189802	572 00000000	442 00000000	14 702
HOUR	4	10 50000000	3 78593890	8 00000000	16.00000000	1 89296945	42 00000000	14 33333333	36 057
YEAR	4	7 25000000	3 20156212	4 00000000	10 00000000	1 60078106	29 00000000	10 25000000	44 159

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=52									
DIST	1	2 00000000		2 00000000	2 00000000		2 00000000		
SIZE	1	50 00000000		50 00000000	50 00000000		50 00000000		
HOUR	1	10 00000000		10 00000000	10 00000000		10 00000000		
YEAR	1	15 00000000		15 00000000	15 00000000		15 00000000		
ID=54									
DIST	2	10 50000000	2 12132034	9 00000000	12 00000000	1 50000000	21 00000000	4 5000000	20 203
SIZE	2	130 50000000	48 79036790	96 00000000	165 00000000	34 50000000	261 00000000	2380 5000000	37 387
HOUR	2	8 00000000	5 65685425	4 00000000	12 00000000	4 00000000	16 00000000	32 0000000	70 711
YEAR	2	4 00000000	2 82842712	2 00000000	6 00000000	2 00000000	8 00000000	8 0000000	70 711
ID=57									
DIST	1	11 00000000		11 00000000	11 00000000		11 00000000		
SIZE	1	180 00000000		180 00000000	180 00000000		180 00000000		
HOUR	1	80 00000000		80 00000000	80 00000000		80 00000000		
YEAR	1	15 00000000		15 00000000	15 00000000		15 00000000		
ID=64									
DIST	2	3 50000000	2 12132034	2.00000000	5 00000000	1 50000000	7 00000000	4 5000000	60 609
SIZE	2	140 00000000	56 56854249	100 00000000	180 00000000	40 00000000	280 00000000	3200 0000000	40 406
HOUR	2	8 00000000	0 00000000	8 00000000	8 00000000	0 00000000	16 00000000	0 0000000	0 000
YEAR	2	4 00000000	1 41421356	3 00000000	5 00000000	1 00000000	8 00000000	2 0000000	35 355
ID=66									
DIST	1	3 00000000		3 00000000	3 00000000		3 00000000		
SIZE	1	50 00000000		50 00000000	50 00000000		50 00000000		
HOUR	1	8 00000000		8 00000000	8 00000000		8 00000000		
YEAR	1	5 00000000		5 00000000	5 00000000		5 00000000		
ID=70									
DIST	4	7 50000000	2 88675135	5 00000000	10 00000000	1 44337567	30 00000000	8 33333333	38 490
SIZE	4	112 50000000	25 00000000	100 00000000	150 00000000	12 50000000	450 00000000	625 00000000	22 222
HOUR	4	12 00000000	4 61880215	8 00000000	16 00000000	2 30940108	48.00000000	21 33333333	38 490
YEAR	4	4 00000000	1.41421356	2 00000000	5.00000000	0 70710678	16 00000000	2 00000000	35 355
ID=72									
DIST	2	14 00000000	8 48528137	8 00000000	20 00000000	6 00000000	28 00000000	72 0000000	60 609
SIZE	2	130 00000000	98 99494937	60 00000000	200 00000000	70 00000000	260 00000000	9800 0000000	76 150
HOUR	2	60 00000000	42 42640687	30 00000000	90 00000000	30 00000000	120 00000000	1800 0000000	70 711
YEAR	2	3 50000000	2 12132034	2 00000000	5 00000000	1 50000000	7 00000000	4 5000000	60 609

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V
ID=24									
DIST	1	2 00000000		2 00000000	2 00000000		2 00000000		
SIZE	1	200 00000000		200 00000000	200 00000000		200 00000000		
HOUR	1	30 00000000		30 00000000	30 00000000		30 00000000		
YEAR	1	1 00000000		1 00000000	1 00000000		1 00000000		
ID=26									
DIST	12	15 16666667	6 37941766	5 00000000	28 00000000	1 84157925	182 0000000	40 6969697	42 062
SIZE	12	92 16666667	56 57791624	40 00000000	180 00000000	16.33263759	1106 0000000	3201 0606061	61 387
HOUR	12	19 33333333	20 40202010	6 00000000	80 00000000	5 88955590	232 0000000	416.2424242	105 528
YEAR	12	1 25000000	0 62158156	1 00000000	3 00000000	0 17943514	15 0000000	0 3863636	49 727
ID=28									
DIST	6	7 83333333	6 30608172	2 00000000	15.00000000	2 57444708	47.00000000	39 7666667	80 503
SIZE	6	51 66666667	36 00925807	20 00000000	100 00000000	14 70071805	310 00000000	1296 6666667	69 695
HOUR	6	5 16666667	4 91596040	2 00000000	15 00000000	2 00693243	31 00000000	24.1666667	95.148
YEAR	6	3 33333333	1 50554531	2 00000000	6.00000000	0 61463630	20 00000000	2 2666667	45 166
ID=39									
DIST	1	1 00000000		1 00000000	1 00000000		1 00000000		
SIZE	1	180 00000000		180 00000000	180 00000000		180 00000000		
HOUR	1	20 00000000		20 00000000	20 00000000		20 00000000		
YEAR	1	9 00000000		9 00000000	9 00000000		9 00000000		
ID=41									
DIST	5	11 40000000	16 04057356	2 00000000	40 00000000	7 17356257	57 00000000	257.3000000	140 707
SIZE	5	37 60000000	38 71433843	8 00000000	100 00000000	17.31357849	188 00000000	1498 8000000	102 964
HOUR	5	5 40000000	4 56070170	1 00000000	13 00000000	2 03960781	27.00000000	20 8000000	84 457
YEAR	5	1 60000000	0 89442719	1 00000000	3 00000000	0.40000000	8 00000000	0 8000000	55 902
ID=49									
DIST	5	21 00000000	17 46424920	10 00000000	50 00000000	7 81024968	105 00000000	305 0000000	83 163
SIZE	5	73 00000000	41 17037770	40 00000000	140 00000000	18 41195264	365 00000000	1695 0000000	56 398
HOUR	5	11 20000000	4 38178046	8 00000000	16 00000000	1.95959179	56 00000000	19 2000000	39 123
YEAR	5	3 40000000	0 54772256	3 00000000	4 00000000	0 24494897	17.00000000	0 3000000	16 109
ID=50									
DIST	3	109 66666667	69 51498639	41 00000000	180 00000000	40.13449611	329 00000000	4832.3333333	63 388
SIZE	3	63 33333333	41 63331999	30 00000000	110 00000000	24 03700850	190 00000000	1733.3333333	65 737
HOUR	3	10 66666667	11 54700538	4 00000000	24 00000000	6 66666667	32 00000000	133 3333333	108 253
YEAR	3	2 00000000	0 00000000	2 00000000	2 00000000	0 00000000	6 00000000	0 0000000	0 000

SUMMARY OF INDIVIDUAL CONSULTANT ACCOUNTS (CONTINUED)

SAS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C V
ID=147									
DIST	5	22 00000000	5 70087713	15 00000000	30 00000000	2 54950976	110 00000000	32 5000000	25 913
SIZE	5	66 80000000	33 03331652	24 00000000	100 00000000	14 77294825	334 00000000	1091 2000000	49 451
HOUR	5	7 20000000	1 09544512	6 00000000	8 00000000	0 48989795	36 00000000	1 2000000	15 215
YEAR	5	6 80000000	5 67450438	1 00000000	15 00000000	2 53771551	34 00000000	32 2000000	83 449
ID=149									
DIST	1	17 00000000		17 00000000	17 00000000		17 00000000		
SIZE	1	100 00000000		100 00000000	100 00000000		100 00000000		
HOUR	1	10 00000000		10 00000000	10 00000000		10 00000000		
YEAR	1	3 00000000		3 00000000	3 00000000		3 00000000		
ID=151									
DIST	2	21 00000000	12 72792206	12 00000000	30 00000000	9 00000000	42 00000000	162 000000	60 609
SIZE	2	153 50000000	144 95689014	51 00000000	256 00000000	102 50000000	307 00000000	21012 500000	94 434
HOUR	2	44 00000000	50 91168825	8 00000000	80 00000000	36 00000000	88 00000000	2592 000000	115 708
YEAR	2	8 00000000	7 07106781	3 00000000	13 00000000	5 00000000	16 00000000	50 000000	88 388
ID=152									
DIST	2	24 00000000	8 48528137	18 00000000	30 00000000	6 00000000	48 00000000	72 00000000	35 355
SIZE	2	108 50000000	26 16295090	90 00000000	127 00000000	18 50000000	217 00000000	684 50000000	24 113
HOUR	2	26 00000000	14 14213562	16 00000000	36 00000000	10 00000000	52 00000000	200 00000000	54 393
YEAR	2	4 00000000	0 00000000	4 00000000	4 00000000	0 00000000	8 00000000	0 00000000	0 000

APPENDIX D

CHI SQUARE DETERMINATIONS BETWEEN FUNCTIONAL ACTIVITIES AND SELECTED DEMOGRAPHIC VARIABLES

SAS

TABLE OF AGEGP BY RRM5

AGEGP RRM5 (Maintains records of budgets)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	2	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
20 - 39 years	0	1	24	0	5	30
	.	0.5	19.6	2.2	7.6	
	.	0.4	1.0	2.2	0.9	
	.	1.82	43.64	0.00	9.09	54.55
	.	3.33	80.00	0.00	16.67	
	.	100.00	66.67	0.00	35.71	
40 + years	2	0	12	4	9	25
	.	0.5	16.4	1.8	6.4	
	.	0.5	1.2	2.6	1.1	
	.	0.00	21.82	7.27	16.36	45.45
	.	0.00	48.00	16.00	36.00	
	.	0.00	33.33	100.00	64.29	
TOTAL	.	1	36	4	14	55
	.	1.82	65.45	7.27	25.45	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	9.769	DF= 3	PROB=0.0206
PHI	0.421		
CONTINGENCY COEFFICIENT	0.388		
CRAMER'S V	0.421		
LIKELIHOOD RATIO CHISQUARE	11.713	DF= 3	PROB=0.0084

SAS

TABLE OF AGEGP BY RRD8

AGEGP RRD8 (Develops record of cost/benefit changes suggested or implemented)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	2	1	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
20 - 39 years	0	8	7	12	3	30
	.	7.1	4.9	10.4	7.6	
	.	0.1	0.9	0.3	2.8	
	.	14.55	12.73	21.82	5.45	54.55
	.	26.67	23.33	40.00	10.00	
	.	61.54	77.78	63.16	21.43	
40 + years	2	5	2	7	11	25
	.	5.9	4.1	8.6	6.4	
	.	0.1	1.1	0.3	3.4	
	.	9.09	3.64	12.73	20.00	45.45
	.	20.00	8.00	28.00	44.00	
	.	38.46	22.22	36.84	78.57	
TOTAL	.	13	9	19	14	55
	.	23.64	16.36	34.55	25.45	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	8.977	DF=	3	PROB=0.0296
PHI	0.404			
CONTINGENCY COEFFICIENT	0.375			
CRAMER'S V	0.404			
LIKELIHOOD RATIO CHISQUARE	9.377	DF=	3	PROB=0.0247

SAS

TABLE OF AGEGP BY EQLAY4

AGEGP EQLAY4 (Sets energy conservation goals for equipment use)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	1	0	2	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
20 - 39 years	0	3	8	3	16	30
	.	1.7	5.0	3.9	19.4	
	.	1.1	1.8	0.2	0.6	
	.	5.56	14.81	5.56	29.63	55.56
	.	10.00	26.67	10.00	53.33	
	.	100.00	88.89	42.86	45.71	
40 + years	3	0	1	4	19	24
	.	1.3	4.0	3.1	15.6	
	.	1.3	2.3	0.3	0.8	
	.	0.00	1.85	7.41	35.19	44.44
	.	0.00	4.17	16.67	79.17	
	.	0.00	11.11	57.14	54.29	
TOTAL	.	3	9	7	35	54
	.	5.56	16.67	12.96	64.81	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	8.280	DF= 3	PROB=0.0406
PHI	0.392		
CONTINGENCY COEFFICIENT	0.365		
CRAMER'S V	0.392		
LIKELIHOOD RATIO CHISQUARE	10.089	DF= 3	PROB=0.0178

SAS

TABLE OF DEGREE BY DADM9

DEGREE DADM9 (Communicates with other departments)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	1	2	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
Advanced	0	0	8	6	1	15
	.	0.5	3.3	10.9	0.3	
	.	0.5	6.8	2.2	1.9	
	.	0.00	14.55	10.91	1.82	27.27
	.	0.00	53.33	40.00	6.67	
	.	0.00	66.67	15.00	100.00	
Bachelor	2	2	4	34	0	40
	.	1.5	8.7	29.1	0.7	
	.	0.2	2.6	0.8	0.7	
	.	3.64	7.27	61.82	0.00	72.73
	.	5.00	10.00	85.00	0.00	
	.	100.00	33.33	85.00	0.00	
TOTAL	.	2	12	40	1	55
	.	3.64	21.82	72.73	1.82	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	15.843	DF= 3	PROB=0.0012
PHI	0.537		
CONTINGENCY COEFFICIENT	0.473		
CRAMER'S V	0.537		
LIKELIHOOD RATIO CHISQUARE	15.362	DF= 3	PROB=0.0015

SAS

TABLE OF DEGREE BY RRD2

DEGREE RRD2 (Develops record for summary of food costs)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	2	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
Advanced	0	4	7	3	1	15
	.	1.6	9.3	1.6	2.5	
	.	3.4	0.6	1.1	0.9	
	.	7.27	12.73	5.45	1.82	27.27
	.	26.67	46.67	20.00	6.67	
	.	66.67	20.59	50.00	11.11	
Bachelor	2	2	27	3	8	40
	.	4.4	24.7	4.4	6.5	
	.	1.3	0.2	0.4	0.3	
	.	3.64	49.09	5.45	14.55	72.73
	.	5.00	67.50	7.50	20.00	
	.	33.33	79.41	50.00	88.89	
TOTAL	.	6	34	6	9	55
	.	10.91	61.82	10.91	16.36	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	8.208	DF= 3	PROB=0.0419
PHI	0.386		
CONTINGENCY COEFFICIENT	0.360		
CRAMER'S V	0.386		
LIKELIHOOD RATIO CHISQUARE	7.645	DF= 3	PROB=0.0539

SAS

TABLE OF DEGREE BY FDPREP6

DEGREE FDPREP6 (Assigns work to employees)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	3	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	0	2	13	0	0	15
	.	0.5	12.5	0.8	1.1	
Advanced	.	3.9	0.0	0.8	1.1	
	.	3.64	23.64	0.00	0.00	27.27
	.	13.33	86.67	0.00	0.00	
	.	100.00	28.26	0.00	0.00	
	2	0	33	3	4	40
	.	1.5	33.5	2.2	2.9	
Bachelor	.	1.5	0.0	0.3	0.4	
	.	0.00	60.00	5.45	7.27	72.73
	.	0.00	82.50	7.50	10.00	
	.	0.00	71.74	100.00	100.00	
TOTAL	.	2	46	3	4	55
	.	3.64	83.64	5.45	7.27	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	7.981	DF=	3	PROB=0.0464
PHI	0.381			
CONTINGENCY COEFFICIENT	0.356			
CRAMER'S V	0.381			
LIKELIHOOD RATIO CHISQUARE	9.678	DF=	3	PROB=0.0215

SAS

TABLE OF PLANWORK BY RRD5

PLAN' ORK RRD5 (Develops record and reports of budgets)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	1	1	1	2	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	1	0	10	5	15	30
	.	1.1	13.6	6.8	8.5	
	.	1.1	0.9	0.5	5.0	
No	.	0.00	18.87	9.43	28.30	56.60
	.	0.00	33.33	16.67	50.00	
	.	0.00	41.67	41.67	100.00	
	0	2	14	7	0	23
	.	0.9	10.4	5.2	6.5	
	.	1.5	1.2	0.6	6.5	
Yes	.	3.77	26.42	13.21	0.00	43.40
	.	8.70	60.87	30.43	0.00	
	.	100.00	58.33	58.33	0.00	
TOTAL	.	2	24	12	15	53
	.	3.77	45.28	22.64	28.30	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	17.379	DF= 3	PROB=0.0006
PHI	0.573		
CONTINGENCY COEFFICIENT	0.497		
CRAMER'S V	0.573		
LIKELIHOOD RATIO CHISQUARE	23.644	DF= 3	PROB=0.0001

SAS

TABLE OF PLANWORK BY RRM5

PLANWORK RRM5 (Maintains record and reports of budgets)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	1	3	0	1	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	1	0	16	1	13	30
	.	0.6	19.8	2.3	7.4	
	.	0.6	0.7	0.7	4.3	
No	.	0.00	30.19	1.89	24.53	56.60
	.	0.00	53.33	3.33	43.33	
	.	0.00	45.71	25.00	100.00	
	0	1	19	3	0	23
	.	0.4	15.2	1.7	5.6	
	.	0.7	1.0	0.9	5.6	
Yes	.	1.89	35.85	5.66	0.00	43.40
	.	4.35	82.61	13.04	0.00	
	.	100.00	54.29	75.00	0.00	
TOTAL	.	1	35	4	13	53
	.	1.89	66.04	7.55	24.53	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	14.587	DF= 3	PROB=0.0022
PHI	0.525		
CONTINGENCY COEFFICIENT	0.465		
CRAMER'S V	0.525		
LIKELIHOOD RATIO CHISQUARE	19.785	DF= 3	PROB=0.0002

SAS

TABLE OF PLANWORK BY RRD3

PLANWORK RRD3 (Develops record and reports of staffing costs)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	1	3	0	1	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
No	1	1	10	5	14	30
	.	2.3	14.7	4.5	8.5	
	.	0.7	1.5	0.0	3.6	
	.	1.89	18.87	9.43	26.42	56.60
	.	3.33	33.33	16.67	46.67	
	.	25.00	38.46	62.50	93.33	
Yes	0	3	16	3	1	23
	.	1.7	11.3	3.5	6.5	
	.	0.9	2.0	0.1	4.7	
	.	5.66	30.19	5.66	1.89	43.40
	.	13.04	69.57	13.04	4.35	
	.	75.00	61.54	37.50	6.67	
TOTAL	.	4	26	8	15	53
	.	7.55	49.06	15.09	28.30	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	13.462	DF= 3	PROB=0.0037
PHI	0.504		
CONTINGENCY COEFFICIENT	0.450		
CRAMER'S V	0.504		
LIKELIHOOD RATIO CHISQUARE	15.468	DF= 3	PROB=0.0015

SAS

TABLE OF PLANWORK BY DADM8

PLANWORK DADM8 (Conducts exit interviews with personnel)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	FS	Both	Neither	TOTAL
.	1	4	0	1	.
	.	.	.	.	
	.	.	.	.	
	.	.	.	.	.
	.	.	.	.	
	.	.	.	.	
No	1	13	3	14	30
	.	18.7	2.3	9.1	
	.	1.7	0.2	2.7	
	.	24.53	5.66	26.42	56.60
	.	43.33	10.00	46.67	
	.	39.39	75.00	87.50	
Yes	0	20	1	2	23
	.	14.3	1.7	6.9	
	.	2.3	0.3	3.5	
	.	37.74	1.89	3.77	43.40
	.	86.96	4.35	8.70	
	.	60.61	25.00	12.50	
TOTAL	.	33	4	16	53
	.	62.26	7.55	30.19	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	10.748	DF= 2	PROB=0.0046
PHI	0.450		
CONTINGENCY COEFFICIENT	0.411		
CRAMER'S V	0.450		
LIKELIHOOD RATIO CHISQUARE	11.740	DF= 2	PROB=0.0028

SAS

TABLE OF PLANWORK BY RRD2

PLANWORK RRD2 (Develops record or reports of summary of food costs)

PLANWORK	.	CD	FS	Both	Neither	TOTAL
.	1	1	4	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
No	1	1	16	4	9	30
	.	3.4	18.1	3.4	5.1	
	.	1.7	0.2	0.1	3.0	
	.	1.89	30.19	7.55	16.98	56.60
	.	3.33	53.33	13.33	30.00	
	.	16.67	50.00	66.67	100.00	
Yes	0	5	16	2	0	23
	.	2.6	13.9	2.6	3.9	
	.	2.2	0.3	0.1	3.9	
	.	9.43	30.19	3.77	0.00	43.40
	.	21.74	69.57	8.70	0.00	
	.	83.33	50.00	33.33	0.00	
TOTAL	.	6	32	6	9	53
	.	11.32	60.38	11.32	16.98	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	11.611	DF= 3	PROB=0.0088
PHI	0.468		
CONTINGENCY COEFFICIENT	0.424		
CRAMER'S V	0.468		
LIKELIHOOD RATIO CHISQUARE	15.140	DF= 3	PROB=0.0017

SAS

TABLE OF PLANWORK BY EQLAY5

PLANWORK EQLAY5 (Writes specifications for purchase of new equipment)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	3	0	1	1	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
No	2	2	5	7	15	29
	.	4.5	5.6	8.9	10.0	
	.	1.4	0.1	0.4	2.5	
	.	3.85	9.62	13.46	28.85	55.77
	.	6.90	17.24	24.14	51.72	
	.	25.00	50.00	43.75	83.33	
Yes	0	6	5	9	3	23
	.	3.5	4.4	7.1	8.0	
	.	1.7	0.1	0.5	3.1	
	.	11.54	9.62	17.31	5.77	44.23
	.	26.09	21.74	39.13	13.04	
	.	75.00	50.00	56.25	16.67	
TOTAL	.	8	10	16	18	52
	.	15.38	19.23	30.77	34.62	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	9.687	DF=	3	PROB=0.0214
PHI	0.432			
CONTINGENCY COEFFICIENT	0.396			
CRAMER'S V	0.432			
LIKELIHOOD RATIO CHISQUARE	10.383	DF=	3	PROB=0.0156

SAS

TABLE OF PLANWORK BY EQLAY6

PLANWORK EQLAY6 (In remodeling and new construction, works with architect and others to interpret kitchen needs)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	1	0	2	2	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
No	2	2	1	8	18	29
	.	5.6	1.7	7.8	13.9	
	.	2.3	0.3	0.0	1.2	
	.	3.85	1.92	15.38	34.62	55.77
	.	6.90	3.45	27.59	62.07	
	.	20.00	33.33	57.14	72.00	
Yes	0	8	2	6	7	23
	.	4.4	1.3	6.2	11.1	
	.	2.9	0.3	0.0	1.5	
	.	15.38	3.85	11.54	13.46	44.23
	.	34.78	8.70	26.09	30.43	
	.	80.00	66.67	42.86	28.00	
TOTAL	.	10	3	14	25	52
	.	19.23	5.77	26.92	48.08	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	8.480	DF= 3	PROB=0.0371
PHI	0.404		
CONTINGENCY COEFFICIENT	0.374		
CRAMER'S V	0.404		
LIKELIHOOD RATIO CHISQUARE	8.797	DF= 3	PROB=0.0321

SAS

TABLE OF PLANWORK BY SAN5

PLANWORK SAN5 (Maintains sanitation standards)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	0	2	2	1	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	1	3	20	5	2	30
	.	2.3	17.0	9.6	1.1	
No	.	0.2	0.5	2.2	0.7	
	.	5.66	37.74	9.43	3.77	56.60
	.	10.00	66.67	16.67	6.67	
	.	75.00	66.67	29.41	100.00	
	0	1	10	12	0	23
	.	1.7	13.0	7.4	0.9	
Yes	.	0.3	0.7	2.9	0.9	
	.	1.89	18.87	22.64	0.00	43.40
	.	4.35	43.48	52.17	0.00	
	.	25.00	33.33	70.59	0.00	
TOTAL	.	4	30	17	2	53
	.	7.55	56.60	32.08	3.77	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	8.438	DF=	3	PROB=0.0378
PHI	0.399			
CONTINGENCY COEFFICIENT	0.371			
CRAMER'S V	0.399			
LIKELIHOOD RATIO CHISQUARE	9.260	DF=	3	PROB=0.0260

SAS

TABLE OF PLANWORK BY RRM2

PLANWORK RRM2 (Maintains record and reports of summary of food costs)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	1	4	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	1	0	20	1	9	30
	.	1.1	21.5	1.7	5.7	
No	.	1.1	0.1	0.3	2.0	
	.	0.00	37.74	1.89	16.98	56.60
	.	0.00	66.67	3.33	30.00	
	.	0.00	52.63	33.33	90.00	
	0	2	18	2	1	23
	.	0.9	16.5	1.3	4.3	
Yes	.	1.5	0.1	0.4	2.6	
	.	3.77	33.96	3.77	1.89	43.40
	.	8.70	78.26	8.70	4.35	
	.	100.00	47.37	66.67	10.00	
TOTAL		2	38	3	10	53
		3.77	71.70	5.66	18.87	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	8.055	DF= 3	PROB=0.0449
PHI	0.390		
CONTINGENCY COEFFICIENT	0.363		
CRAMER'S V	0.390		
LIKELIHOOD RATIO CHISQUARE	9.652	DF= 3	PROB=0.0218

SAS

TABLE OF Q6 BY RRD3

Q6 (Develops records of staffing costs)

RRD3

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	1	0	1	. .
Full-time	0	1 1.2 0.0 1.82 6.25 25.00	6 8.1 0.6 10.91 37.50 21.43	6 2.3 5.8 10.91 37.50 75.00	3 4.4 0.4 5.45 18.75 20.00	16 29.09
< full > half	2	2 0.7 2.2 3.64 20.00 50.00	8 5.1 1.7 14.55 80.00 28.57	0 1.5 1.5 0.00 0.00 0.00	0 2.7 2.7 0.00 0.00 0.00	10 18.18
Half-time	0	1 2.1 0.6 1.82 3.45 25.00	14 14.8 0.0 25.45 48.28 50.00	2 4.2 1.2 3.64 6.90 25.00	12 7.9 2.1 21.82 41.38 80.00	29 52.73
TOTAL	. .	4 7.27	28 50.91	8 14.55	15 27.27	55 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	18.787	DF= 6	PROB=0.0045
PHI	0.584		
CONTINGENCY COEFFICIENT	0.505		
CRAMER'S V	0.413		
LIKELIHOOD RATIO CHISQUARE	20.464	DF= 6	PROB=0.0023

SAS

TABLE OF Q6 BY RRD5

Q6 (Develops record of budgets) RRD5

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CS	FS	Both	Neither	TOTAL
.	0	1	1	0	1	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	0	1	4	9	2	16
	.	0.6	7.0	3.8	4.7	
Full-	.	0.3	1.3	7.2	1.5	
time	.	1.82	7.27	16.36	3.64	29.09
	.	6.25	25.00	56.25	12.50	
	.	50.00	16.67	69.23	12.50	
	2	0	7	1	2	10
	.	0.4	4.4	2.4	2.9	
<full	.	0.4	1.6	0.8	0.3	
>half	.	0.00	12.73	1.82	3.64	18.18
	.	0.00	70.00	10.00	20.00	
	.	0.00	29.17	7.69	12.50	
	0	1	13	3	12	29
	.	1.1	12.7	6.9	8.4	
Half-	.	0.0	0.0	2.2	1.5	
time	.	1.82	23.64	5.45	21.82	52.73
	.	3.45	44.83	10.34	41.38	
	.	50.00	54.17	23.08	75.00	
TOTAL	.	2	24	13	16	55
	.	3.64	43.64	23.64	29.09	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	17.000	DF= 6	PROB=0.0093
PHI	0.556		
CONTINGENCY COEFFICIENT	0.486		
CRAMER'S V	0.393		
LIKELIHOOD RATIO CHISQUARE	16.345	DF= 6	PROB=0.0120

SAS

TABLE OF Q6 BY RRD2

Q6 RRD2 (Develops record of summary of food costs)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	2	0	0	. .
Full-time	0	2 1.7 0.0 3.64 12.50 33.33	8 9.9 0.4 14.55 50.00 23.53	5 1.7 6.1 9.09 31.25 83.33	1 2.6 1.0 1.82 6.25 11.11	16 29.09
<full >half	2	2 1.1 0.8 3.64 20.00 33.33	8 6.2 0.5 14.55 80.00 23.53	0 1.1 1.1 0.00 0.00 0.00	0 1.6 1.6 0.00 0.00 0.00	10 18.18
Half-time	0	2 3.2 0.4 3.64 6.90 33.33	18 17.9 0.0 32.73 62.07 52.94	1 3.2 1.5 1.82 3.45 16.67	8 4.7 2.2 14.55 27.59 88.89	29 52.73
TOTAL	. .	6 10.91	34 61.82	6 10.91	9 16.36	55 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	15.627	DF= 6	PROB=0.0159
PHI	0.533		
CONTINGENCY COEFFICIENT	0.470		
CRAMER'S V	0.377		
LIKELIHOOD RATIO CHISQUARE	16.663	DF= 6	PROB=0.0106

SAS

TABLE OF Q6 BY SAN5

Q6 SAN5 (Maintains standards)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	2	1	0	. .
Full-time	0	0 1.2 1.2 0.00 0.00 0.00	8 8.7 0.1 14.55 50.00 26.67	8 5.2 1.5 14.55 50.00 44.44	0 0.9 0.9 0.00 0.00 0.00	16 29.09
< full >half	2	3 0.7 7.1 5.45 30.00 75.00	5 5.5 0.0 9.09 50.00 16.67	2 3.3 0.5 3.64 20.00 11.11	0 0.5 0.5 0.00 0.00 0.00	10 18.18
Half-time	0	1 2.1 0.6 1.82 3.45 25.00	17 15.8 0.1 30.91 58.62 56.67	8 9.5 0.2 14.55 27.59 44.44	3 1.6 1.3 5.45 10.34 100.00	29 52.73
TOTAL	.	4 7.27	30 54.55	18 32.73	3 5.45	55 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	13.913	DF= 6	PROB=0.0306
PHI	0.503		
CONTINGENCY COEFFICIENT	0.449		
CRAMER'S V	0.356		
LIKELIHOOD RATIO CHISQUARE	13.114	DF= 6	PROB=0.0413

SAS

TABLE OF Q6 BY RRM4

Q6 RRM4 (Maintains records of inventories)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	FS	Both	Neither	TOTAL
.	0	3	0	0	.
	.	.	.	.	
	.	.	.	.	
	.	.	.	.	.
	.	.	.	.	
	.	.	.	.	
Full-time	0	13	3	0	16
	.	13.4	0.9	1.7	
	.	0.0	5.2	1.7	
	.	23.64	5.45	0.00	29.09
	.	81.25	18.75	0.00	
	.	28.26	100.00	0.00	
<full >half	2	9	0	1	10
	.	8.4	0.5	1.1	
	.	0.0	0.5	0.0	
	.	16.36	0.00	1.82	18.18
	.	90.00	0.00	10.00	
	.	19.57	0.00	16.67	
Half-time	0	24	0	5	29
	.	24.3	1.6	3.2	
	.	0.0	1.6	1.1	
	.	43.64	0.00	9.09	52.73
	.	82.76	0.00	17.24	
	.	52.17	0.00	83.33	
TOTAL	.	46	3	6	55
	.	83.64	5.45	10.91	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	10.193	DF= 4	PROB=0.0373
PHI	0.431		
CONTINGENCY COEFFICIENT	0.395		
CRAMER'S V	0.304		
LIKELIHOOD RATIO CHISQUARE	11.873	DF= 4	PROB=0.0183

SAS

TABLE OF Q6 BY DADM9

Q6 DADM9 (Communicates with other departments)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	1	2	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
Full-time	0	0	8	8	0	16
	.	0.6	3.5	11.6	0.3	
	.	0.6	5.8	1.1	0.3	
	.	0.00	14.55	14.55	0.00	29.09
	.	0.00	50.00	50.00	0.00	
	.	0.00	66.67	20.00	0.00	
<full >half	2	1	0	9	0	10
	.	0.4	2.2	7.3	0.2	
	.	1.1	2.2	0.4	0.2	
	.	1.82	0.00	16.36	0.00	18.18
	.	10.00	0.00	90.00	0.00	
	.	50.00	0.00	22.50	0.00	
Half-time	0	1	4	23	1	29
	.	1.1	6.3	21.1	0.5	
	.	0.0	0.9	0.2	0.4	
	.	1.82	7.27	41.82	1.82	52.73
	.	3.45	13.79	79.31	3.45	
	.	50.00	33.33	57.50	100.00	
TOTAL	.	2	12	40	1	55
	.	3.64	21.82	72.73	1.82	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	13.176	DF= 6	PROB=0.0403
PHI	0.489		
CONTINGENCY COEFFICIENT	0.440		
CRAMER'S V	0.346		
LIKELIHOOD RATIO CHISQUARE	14.624	DF= 6	PROB=0.0234

SAS

TABLE OF AGEGP BY FDPUR1

AGEGP FDPUR1 (Determines the food items)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	2	1	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	0	3	20	7	0	30
	.	3.3	15.8	9.3	1.6	
20 -39	.	0.0	1.1	0.6	1.6	
years	.	5.45	36.36	12.73	0.00	54.55
	.	10.00	66.67	23.33	0.00	
	.	50.00	68.97	41.18	0.00	
	2	3	9	10	3	25
	.	2.7	13.2	7.7	1.4	
	.	0.0	1.3	0.7	2.0	
40 +	.	5.45	16.36	18.18	5.45	45.45
years	.	12.00	36.00	40.00	12.00	
	.	50.00	31.03	58.82	100.00	
TOTAL	.	6	29	17	3	55
	.	10.91	52.73	30.91	5.45	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	7.308	DF=	3	PROB=0.0627
PHI	0.365			
CONTINGENCY COEFFICIENT	0.342			
CRAMER'S V	0.365			
LIKELIHOOD RATIO CHISQUARE	8.515	DF=	3	PROB=0.0365

SAS

TABLE OF AGEGP BY FDSERV4

AGEGP FDSERV4 (Checks plate waste)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	0	2	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
20 - 39 years	0	1	23	6	0	30
	.	1.6	18.5	8.7	1.1	
	.	0.2	1.1	0.9	1.1	
	.	1.82	41.82	10.91	0.00	54.55
	.	3.33	76.67	20.00	0.00	
	.	33.33	67.65	37.50	0.00	
40 + years	2	2	11	10	2	25
	.	1.4	15.5	7.3	0.9	
	.	0.3	1.3	1.0	1.3	
	.	3.64	20.00	18.18	3.64	45.45
	.	8.00	44.00	40.00	8.00	
	.	66.67	32.35	62.50	100.00	
TOTAL	.	3	34	16	2	55
	.	5.45	61.82	29.09	3.64	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	7.173	DF= 3	PROB=0.0666
PHI	0.361		
CONTINGENCY COEFFICIENT	0.340		
CRAMER'S V	0.361		
LIKELIHOOD RATIO CHISQUARE	7.996	DF= 3	PROB=0.0461

SAS

TABLE OF AGEGP BY FDPUR4

AGEGP FDPUR4 (Confers with sales person)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	1	2	0	.
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
	0	1	24	5	0	30
	.	1.1	21.3	4.9	2.7	
20 - 39	.	0.0	0.3	0.0	2.7	
years	.	1.82	43.64	9.09	0.00	54.55
	.	3.33	80.00	16.67	0.00	
	.	50.00	61.54	55.56	0.00	
	2	1	15	4	5	25
	.	0.9	17.7	4.1	2.3	
40 +	.	0.0	0.4	0.0	3.3	
years	.	1.82	27.27	7.27	9.09	45.45
	.	4.00	60.00	16.00	20.00	
	.	50.00	38.46	44.44	100.00	
TOTAL	.	2	39	9	5	55
	.	3.64	70.91	16.36	9.09	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	6.790	DF= 3	PROB=0.0789
PHI	0.351		
CONTINGENCY COEFFICIENT	0.331		
CRAMER'S V	0.351		
LIKELIHOOD RATIO CHISQUARE	8.683	DF= 3	PROB=0.0338

SAS

TABLE OF DEGREE BY SAN3

DEGREE SAN3 (Checks refrigerator temperatures)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	0	3	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
Advanced	0	3	8	4	0	15
	.	1.6	5.2	7.1	1.1	
	.	1.1	1.5	1.3	1.1	
	.	5.45	14.55	7.27	0.00	27.27
	.	20.00	53.33	26.67	0.00	
	.	50.00	42.11	15.38	0.00	
Bachelor	2	3	11	22	4	40
	.	4.4	13.8	18.9	2.9	
	.	0.4	0.6	0.5	0.4	
	.	5.45	20.00	40.00	7.27	72.73
	.	7.50	27.50	55.00	10.00	
	.	50.00	57.89	84.62	100.00	
TOTAL	.	6	19	26	4	55
	.	10.91	34.55	47.27	7.27	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	7.023	DF= 3	PROB=0.0712
PHI	0.357		
CONTINGENCY COEFFICIENT	0.336		
CRAMER'S V	0.357		
LIKELIHOOD RATIO CHISQUARE	7.948	DF= 3	PROB=0.0471

SAS

TABLE OF DEGREE BY EQLAY1

DEGREE EQLAY1 (Within existing limits, plans for use of space and equipment for maximum efficiency)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	2	0	1	0	.
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
Advanced	0	3	3	5	4	15
	.	1.7	2.8	8.6	1.9	
	.	1.1	0.0	1.5	2.2	
	.	5.56	5.56	9.26	7.41	27.78
	.	20.00	20.00	33.33	26.67	
	.	50.00	30.00	16.13	57.14	
Bachelor	3	3	7	26	3	39
	.	4.3	7.2	22.4	5.1	
	.	0.4	0.0	0.6	0.8	
	.	5.56	12.96	48.15	5.56	72.22
	.	7.69	17.95	66.67	7.69	
	.	50.00	70.00	83.87	42.86	
TOTAL	.	6	10	31	7	54
	.	11.11	18.52	57.41	12.96	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	6.607	DF= 3	PROB=0.0855
PHI	0.350		
CONTINGENCY COEFFICIENT	0.330		
CRAMER'S V	0.350		
LIKELIHOOD RATIO CHISQUARE	6.323	DF= 3	PROB=0.0969

SAS

TABLE OF DEGREE BY THERA4

DEGREE THERA4 (Confers with patients regarding modified diets)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	2	0	1	0	.
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	
Advanced	0	7	3	4	1	15
	.	7.4	1.4	6.0	0.3	
	.	0.0	2.0	0.7	1.9	
	.	12.73	5.45	7.27	1.82	27.27
	.	46.67	20.00	26.67	6.67	
	.	25.93	60.00	18.18	100.00	
Bachelor	2	20	2	18	0	40
	.	19.6	3.6	16.0	0.7	
	.	0.0	0.7	0.3	0.7	
	.	36.36	3.64	32 73	0.00	72.73
	.	50.00	5.00	45.00	0.00	
	.	74.07	40.00	81.82	0.00	
TOTAL	.	27	5	22	1	55
	.	49.09	9.09	40.00	1.82	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	6.308	DF= 3	PROB=0.0975
PHI	0.339		
CONTINGENCY COEFFICIENT	0.321		
CRAMER'S V	0.339		
LIKELIHOOD RATIO CHISQUARE	5.959	DF= 3	PROB=0.1136

SAS

TABLE OF PLANWORK BY MPLAN4

PLANWORK MPLAN4 (Files menus)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	0	4	1	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
No	1	6	22	2	0	30
	.	3.4	22.6	3.4	-0.6	
	.	2.0	0.0	0.6	0.6	
	.	11.32	41.51	3.77	0.00	56.60
	.	20.00	73.33	6.67	0.00	
	.	100.00	55.00	33.33	0.00	
Yes	0	0	18	4	1	23
	.	2.6	17.4	2.6	0.4	
	.	2.6	0.0	0.7	0.7	
	.	0.00	33.96	7.55	1.89	43.40
	.	0.00	78.26	17.39	4.35	
	.	0.00	45.00	66.67	100.00	
TOTAL	.	6	40	6	1	53
	.	11.32	75.47	11.32	1.89	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	7.269	DF= 3	PROB=0.0638
PHI	0.370		
CONTINGENCY COEFFICIENT	0.347		
CRAMER'S V	0.370		
LIKELIHOOD RATIO CHISQUARE	9.857	DF= 3	PROB=0.0198

SAS

TABLE OF PLANWORK BY EDTRN4

PLANWORK EDTRN4 (Conducts nutrition education for patients and their families)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	1	4	1	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
No	2	15	2	6	6	29
	.	15.6	1.7	8.4	3.3	
	.	0.0	0.1	0.7	2.1	
	.	28.85	3.85	11.54	11.54	55.77
	.	51.72	6.90	20.69	20.69	
	.	53.57	66.67	40.00	100.00	
Yes	0	13	1	9	0	23
	.	12.4	1.3	6.6	2.7	
	.	0.0	0.1	0.8	2.7	
	.	25.00	1.92	17.31	0.00	44.23
	.	56.52	4.35	39.13	0.00	
	.	46.43	33.33	60.00	0.00	
TOTAL	.	28	3	15	6	52
	.	53.85	5.77	28.85	11.54	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	6.470	DF= 3	PROB=0.0909
PHI	0.353		
CONTINGENCY COEFFICIENT	0.333		
CRAMER'S V	0.353		
LIKELIHOOD RATIO CHISQUARE	8.711	DF= 3	PROB=0.0334

SAS

TABLE OF PLANWORK BY DADM6

PLANWORK DADM6 (Hires department personnel)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	FS	Both	Neither	TOTAL
.	1	4	0	1	. .
No	1	20 23.2 0.4 37.74 66.67 48.78	1 0.6 0.3 1.89 3.33 100.00	9 6.2 1.2 16.98 30.00 81.82	30 56.60
Yes	0	21 17.8 0.6 39.62 91.30 51.22	0 0.4 0.4 0.00 0.00 0.00	2 4.8 1.6 3.77 8.70 18.18	23 43.40
TOTAL	. .	41 77.36	1 1.89	11 20.75	53 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	4.635	DF=	2	PROB=0.0985
PHI	0.296			
CONTINGENCY COEFFICIENT	0.284			
CRAMER'S V	0.296			
LIKELIHOOD RATIO CHISQUARE	5.302	DF=	2	PROB=0.0706

SAS

TABLE OF Q6 BY FDPREP4

Q6 FDPREP4 (Prepares menu items)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	FS	Both	Neither	TOTAL
.	0	2	0	1	. .
Full-time	0	4 8.1 2.1 7.27 25.00 14.29	0 0.6 0.6 0.00 0.00 0.00	12 7.3 3.1 21.82 75.00 48.00	16 29.09
<full >half	2	7 5.1 0.7 12.73 70.00 25.00	0 0.4 0.4 0.00 0.00 0.00	3 4.5 0.5 5.45 30.00 12.00	10 18.18
Half-time	0	17 14.8 0.3 30.91 58.62 60.71	2 1.1 0.8 3.64 6.90 100.00	10 13.2 0.8 18.18 34.48 40.00	29 52.73
TOTAL	. .	28 50.91	2 3.64	25 45.45	55 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	9.324	DF= 4	PROB=0.0535
PHI	0.412		
CONTINGENCY COEFFICIENT	0.381		
CRAMER'S V	0.291		
LIKELIHOOD RATIO CHISQUARE	10.125	DF= 4	PROB=0.0384

SAS

TABLE OF Q6 BY RRD6

Q6 RRD6 (Develops record of dietary progress notes for patient medical record)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	3	0	0	0	. .
Full-time	0	7 9.9 0.8 12.73 43.75 20.59	0 1.2 1.2 0.00 0.00 0.00	9 4.4 4.9 16.36 56.25 60.00	0 0.6 0.6 0.00 0.00 0.00	16 29.09
< full > half	2	8 6.2 0.5 14.55 80.00 23.53	1 0.7 0.1 1.82 10.00 25.00	1 2.7 1.1 1.82 10.00 6.67	0 0.4 0.4 0.00 0.00 0.00	10 18.18
Half-time	0	19 17.9 0.1 34.55 65.52 55.88	3 2.1 0.4 5.45 10.34 75.00	5 7.9 1.1 9.09 17.24 33.33	2 1.1 0.8 3.64 6.90 100.00	29 52.73
TOTAL	. .	34 61.82	4 7.27	15 27.27	2 3.64	55 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	11.969	DF= 6	PROB=0.0627
PHI	0.467		
CONTINGENCY COEFFICIENT	0.423		
CRAMER'S V	0.330		
LIKELIHOOD RATIO CHISQUARE	13.243	DF= 6	PROB=0.0393

SAS

TABLE OF Q6 BY RRM2

Q6 RRM2 (Maintains record of summary of food costs)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	2	0	0	. .
Full-time	0	1 0.6 0.3 1.82 6.25 50.00	11 11.6 0.0 20.00 68.75 27.50	3 0.9 5.2 5.45 18.75 100.00	1 2.9 1.3 1.82 6.25 10.00	16 29.09
< full > half	2	0 0.4 0.4 0.00 0.00 0.00	9 7.3 0.4 16.36 90.00 22.50	0 0.5 0.5 0.00 0.00 0.00	1 1.8 0.4 1.82 10.00 10.00	10 18.18
Half-time	0	1 1.1 0.0 1.82 3.45 50.00	20 21.1 0.1 36.36 68.97 50.00	0 1.6 1.6 0.00 0.00 0.00	8 5.3 1.4 14.55 27.59 80.00	29 52.73
TOTAL	. .	2 3.64	40 72.73	3 5.45	10 18.18	55 100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	11.513	DF= 6	PROB=0.0738
PHI	0.458		
CONTINGENCY COEFFICIENT	0.416		
CRAMER'S V	0.324		
LIKELIHOOD RATIO CHISQUARE	12.198	DF= 6	PROB=0.0577

SAS

TABLE OF Q6 BY RRM5

Q6 RRM5 (Maintains record of budgets)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	2	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
Full-time	0	1	11	3	1	16
	.	0.3	10.5	1.2	4.1	
	.	1.7	0.0	2.9	2.3	
	.	1.82	20.00	5.45	1.82	29.09
	.	6.25	68.75	18.75	6.25	
	.	100.00	30.56	75.00	7.14	
<full >half	2	0	8	0	2	10
	.	0.2	6.5	0.7	2.5	
	.	0.2	0.3	0.7	0.1	
	.	0.00	14.55	0.00	3.64	18.18
	.	0.00	80.00	0.00	20.00	
	.	0.00	22.22	0.00	14.29	
Half-time	0	0	17	1	11	29
	.	0.5	19.0	2.1	7.4	
	.	0.5	0.2	0.6	1.8	
	.	0.00	30.91	1.82	20.00	52.73
	.	0.00	58.62	3.45	37.93	
	.	0.00	47.22	25.00	78.57	
TOTAL	.	1	36	4	14	55
	.	1.82	65.45	7.27	25.45	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	11.411	DF= 6	PROB=0.0765
PHI	0.455		
CONTINGENCY COEFFICIENT	0.415		
CRAMER'S V	0.322		
LIKELIHOOD RATIO CHISQUARE	12.204	DF= 6	PROB=0.0576

SAS

TABLE OF Q6 BY THERA6

Q6 THERA6 (Assesses drug-nutrient interrelationships)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	1	2	3	4	TOTAL
.	0	3	0	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
1	0	9	0	6	1	16
	.	12.2	0.6	2.6	0.6	
	.	0.8	0.6	4.4	0.3	
	.	16.36	0.00	10.91	1.82	29.09
	.	56.25	0.00	37.50	6.25	
	.	21.43	0.00	66.67	50.00	
2	2	8	0	2	0	10
	.	7.6	0.4	1.6	0.4	
	.	0.0	0.4	0.1	0.4	
	.	14.55	0.00	3.64	0.00	18.18
	.	80.00	0.00	20.00	0.00	
	.	19.05	0.00	22.22	0.00	
3	0	25	2	1	1	29
	.	22.1	1.1	4.7	1.1	
	.	0.4	0.8	3.0	0.0	
	.	45.45	3.64	1.82	1.82	52.73
	.	86.21	6.90	3.45	3.45	
	.	59.52	100.00	11.11	50.00	
TOTAL	.	42	2	9	2	55
	.	76.36	3.64	16.36	3.64	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	11.098	DF= 6	PROB=0.0854
PHI	0.449		
CONTINGENCY COEFFICIENT	0.410		
CRAMER'S V	0.318		
LIKELIHOOD RATIO CHISQUARE	12.481	DF= 6	PROB=0.0521

SAS

TABLE OF Q6 BY RRM3

Q6 RRM3 (Maintains record of staffing notes)

FREQUENCY EXPECTED CELL CHI2 PERCENT ROW PCT COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	1	2	0	0	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
Full-time	0	1	13	2	0	16
	.	0.9	11.9	0.6	2.6	
	.	0.0	0.1	3.5	2.6	
	.	1.82	23.64	3.64	0.00	29.09
	.	6.25	81.25	12.50	0.00	
	.	33.33	31.71	100.00	0.00	
<full >half	2	1	8	0	1	10
	.	0.5	7.5	0.4	1.6	
	.	0.4	0.0	0.4	0.2	
	.	1.82	14.55	0.00	1.82	18.18
	.	10.00	80.00	0.00	10.00	
	.	33.33	19.51	0.00	11.11	
Half-time	0	1	20	0	8	29
	.	1.6	21.6	1.1	4.7	
	.	0.2	0.1	1.1	2.2	
	.	1.82	36.36	0.00	14.55	52.73
	.	3.45	68.97	0.00	27.59	
	.	33.33	48.78	0.00	88.89	
TOTAL	.	3	41	2	9	55
	.	5.45	74.55	3.64	16.36	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	10.842	DF= 6	PROB=0.0934
PHI	0.444		
CONTINGENCY COEFFICIENT	0.406		
CRAMER'S V	0.314		
LIKELIHOOD RATIO CHISQUARE	13.134	DF= 6	PROB=0.0410

SAS

TABLE OF Q6 BY MPLAN2

Q6 MPLAN2 (Plans and writes personnel menus)

FREQUENCY / EXPECTED / CELL CHI2 / PERCENT / ROW PCT / COL PCT	.	CD	FS	Both	Neither	TOTAL
.	0	0	0	1	2	.
	.	.	.	.	.	
	.	.	.	.	.	
	.	.	.	.	.	.
	.	.	.	.	.	
	.	.	.	.	.	
Full-time	0	6	1	6	3	16
	.	3.5	2.9	6.4	3.2	
	.	1.8	1.3	0.0	0.0	
	.	10.91	1.82	10.91	5.45	29.09
	.	37.50	6.25	37.50	18.75	
	.	50.00	10.00	27.27	27.27	
< full > half	2	2	3	1	4	10
	.	2.2	1.8	4.0	2.0	
	.	0.0	0.8	2.3	2.0	
	.	3.64	5.45	1.82	7.27	18.18
	.	20.00	30.00	10.00	40.00	
	.	16.67	30.00	4.55	36.36	
Half-time	0	4	6	15	4	29
	.	6.3	5.3	11.6	5.8	
	.	0.9	0.1	1.0	0.6	
	.	7.27	10.91	27.27	7.27	52.73
	.	13.79	20.69	51.72	13.79	
	.	33.33	60.00	68.18	36.36	
TOTAL	.	12	10	22	11	55
	.	21.82	18.18	40.00	20.00	100.00

STATISTICS FOR 2-WAY TABLES

CHI-SQUARE	10.639	DF= 6	PROB=0.1002
PHI	0.440		
CONTINGENCY COEFFICIENT	0.403		
CRAMER'S V	0.311		
LIKELIHOOD RATIO CHISQUARE	11.252	DF= 6	PROB=0.0809

VITA 2

Robin Renee Fisher

Candidate for the Degree of

Master of Science

Thesis: ANALYSIS OF THE ROLE FUNCTIONS AND CONTINUING EDUCATION NEEDS OF OHIO, AS COMPARED TO OKLAHOMA CONSULTANT DIETITIANS IN HEALTH CARE FACILITIES

Major Field: Food, Nutrition and Institution Administration

Biographical:

Personal Data: Born in Barnesville, Ohio, August 4, 1959, the daughter of Rolland and Nancy Fisher.

Education: Graduated from Barnesville High School, Barnesville, Ohio, in June, 1977; received Bachelor of Science degree (double major in Human Nutrition and Food Management and Home Economics Education) from Ohio State University in 1982; completed Oklahoma State University Administrative Dietetic Internship in May, 1983; acquired registration status (R655026) in May, 1983; completed requirements for Master of Science degree at Oklahoma State University in May, 1984.

Professional Experience: Substitute teacher, Stillwater, Oklahoma Public Schools, Spring, 1984; Dietetic Assistant, Nutrition Involving Community Elderly Program, Columbus, Ohio, June, 1981-August, 1982; Ohio State University Summer Sports Program, June-July, 1982; Ohio State University Residence and Dining, Co-Manager of Dining Hall, Columbus, Ohio, May, 1980-June, 1982; Times Leader, Inc., Newspaper Correspondent, Martins Ferry, Ohio, November 1977-September, 1979.

Professional Organizations: Phi Upsilon Omicron Honor Society; Omicron Nu Honor Society, student member, American Home Economics Association; active member, The American Dietetic Association; life member, The Ohio State University Alumni Association.