

ROLE DIFFERENTIATION OF DIETITIANS
AND DIETETIC TECHNICIANS

by

PAMLA KAY HOADLEY

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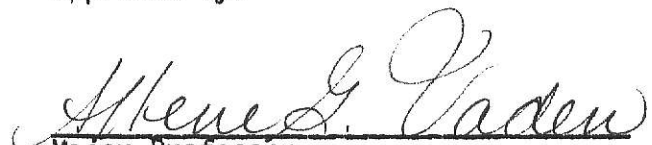
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Approved by:


Major Professor

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INTRODUCTION

Dietetics is a health service profession and the basic objective of the dietetic practitioner is to assist people in obtaining optimal nourishment (1). The future of the dietetic profession can be predicted more accurately if the future of health services in the United States can be foreseen. Most sources indicate that a shortage of dietitians exists and the lack of adequate numbers of professionally qualified dietitians will continue (1-6). Data gathered from an American Dietetic Association (ADA) membership survey indicated a shortage of qualified dietitians but gave no evidence on areas of dietetic practice affected (6).

A number of studies have suggested the need for dietitians to delegate some activities, in order to allow them to perform more effectively in a professional role (1, 7-13). Noland and Steinberg (7) suggested that dietitians delegate some of their time consuming activities. Schell and Bloetjes (3) found that dietitians were willing to delegate duties to personnel who had appropriate academic preparation. Schiller and Vivian (8) noted that a number of physicians indicated that dietitians might perform better if they delegated some of their responsibilities. Scialabba (9) concluded that dietetic technicians were capable of performing a number of the duties that dietitians currently perform. If these duties were delegated to technicians, dietitians would be able to devote more time to remaining activities.

The studies of Lumsden et al. (10), Beck (11), and Rose (12) indicated that dietitians must delegate less demanding responsibilities and routine tasks to dietetic technicians. These three studies were

based on the task functions in the job descriptions developed for dietetic technicians by an ADA committee. Lumsden et al. (10) and Beck (11) asked dietitians what task functions they would be willing to delegate. Beck (11) and Rose (12) continued by asking dietetic technicians what duties they were performing. Some inconsistencies were found between the duties which dietitians were willing to delegate and those actually delegated.

Dietetics is not the only profession facing a manpower shortage (13). Members of other professions, including lawyers, pharmacists, nurses, and physicians (14), have found it expedient to delegate less responsible tasks to qualified personnel. Powers (13) concluded that professionals and paraprofessionals in dietetics can contribute to advancement mutually supportive of the field. Dietetic professionals, however, should view the entry of these paraprofessionals as a stimulating challenge.

Powers (13) described the development of professional and technical roles as a dynamic process occurring in our society. He contended that a profession can shape constructively, but not impede, the emergence of new roles. The emerging technician's role in dietetics can be seen as part of the broad changes occurring in trained manpower, which necessitates the need for role definition of professional and technical personnel. In describing a career mobility program in dietetics, Howard and Schiller (15) stressed importance of differentiating the role functions of the dietetic technician from those of the dietitian.

Studies have suggested that increased utilization of dietetic technicians could lead to cost containment, better use of supportive personnel, reduction in manpower needs, and functioning of dietitians at

the level of proficiency for which they were educated (2, 7, 10-12). Maintaining this level of proficiency was a concern of the ADA Task Force on Competencies (16). Based on this concern, a number of recommendations were formulated as a means of assuring quality in dietetic education and thereby contributing to quality dietetic practice. One of these recommendations was that studies on delineation of roles and relationships within the profession be implemented and utilized.

The purpose of this research was to study responsibilities of hospital dietitians to discover those that could be delegated to dietetic technicians, thus providing data to assist in defining scope of practice of the technician and differentiating between roles of the dietitian and technician. The specific objectives of this study were to:

- (a) gain understanding of areas of responsibility of hospital dietitians;
- (b) determine activities that hospital dietitians were willing to delegate to dietetic technicians;
- (c) assist in defining scope of practice of dietetic technicians;
- (d) assist in differentiating between roles of dietitians and dietetic technicians; and
- (e) develop recommendations for educational programs on particular areas in which dietetic technicians should be trained.

The studies of Lumsden et al. (10) and Beck (11) focused on the tasks of dietetic technicians. These studies identified which task functions normally ascribed to dietetic technicians were being performed by dietitians and which by technicians. The current research focused on the functional responsibilities of dietitians and identified those responsibilities the dietitian was willing to delegate to the dietetic

technician. The functional responsibilities used in this study were adapted from competency statements developed by Cagguila (17) and used as the basis of previous research by Loyd and Vaden (18) and Baird (19). Relevant literature pertained to role of the dietitian, need for supportive personnel in dietetics, delegation to paraprofessionals, roles of the dietetic team, role expectations, definition and development of competencies, and career ladderling.

REVIEW OF LITERATURE

Role of the Dietitian

The role of the dietitian, as defined by the Study Commission of Dietetics, is that of a translator of the science of nutrition into the skill of furnishing optimal nourishment to people (1). To fulfill this role the job positions of the dietitian may be within community agencies, health maintenance organizations, physician group practices, ambulatory care clinics, neighborhood health centers, well-baby clinics, and other traditional settings of hospitals, schools, universities, commercial or industrial organizations, and government agencies (9).

Educational and professional preparation of the dietitian involves completion of minimum academic and experience requirements (20). The minimum academic requirements include basic requirements in physical and biological, behavioral and social, professional, and communication sciences; and an area of specialization in dietetics from general, management, clinical, or community foci. Experience requirements may be fulfilled by completion of one of the following: Coordinated Undergraduate Program, Dietetic Internship, Three Year Pre-Planned Associate Membership, Master's Degree and Experience, or Doctorate Degree. Academic excellence is required to provide a sound basis for competent practice (16).

Downey (21) studied the effectiveness of training in the administrative phase of hospital internships by questioning 333 dietary department directors and sixty-five internship directors. Respondents agreed that administrative dietitians could perform their roles more effectively if

the areas of personnel management and administration were given emphasis in the dietitian's education. Other areas noted as important in the education of the administrative dietitian were use of equipment, teaching, cost control, food production, and service.

Categories of work activities were developed from a survey of therapeutic dietitians conducted by Noland and Steinberg (7). Conventional activities occupied the greatest portion of the dietitians' work time, with decision-making requiring only a small portion. Over 70 per cent of the dietitians working time was spent in written or oral communications.

In the 1960's, the advent of the computer in foodservice was viewed by Taylor (22) as a new challenge to dietitians. She suggested that dietitians should adapt to new challenges and be prepared for continuing innovation in foodservice institutions. In addition, she stressed that dietitians need to budget their work time, train personnel to assure high standards of operation, and stay flexible.

The role of the dietitian in medical care has been conceived traditionally as part of the medical team and in a sense, subservient to the physician (9). Schiller and Vivian (23) found physicians viewed the dietitians as a lower ranking health care team member with limited input privileges. In contrast, clinical dietitians viewed their role as that of a participant in health care team activities able to make significant contributions to decision-making processes. In addition, the dietitians expected to be role partners with other health professionals. The physicians agreed that dietitians should provide some information, but there was a lack of consensus on how or what information should be provided. There also was agreement among the physicians that dietitians

should not assist in any decision-making capacities, such as contributing to discussion during medical rounds, initiating dietary prescriptions, or recommending diets following medical evaluations. Clinical dietitians however, were in agreement that they should participate in those activities, as well as in conventional activities such as taking nutritional histories, visiting patients during meals, and giving dietary instructions. Schiller and Vivian (8, 23) suggested that dietitians should examine their role and performance and define appropriate objectives for improvement.

Using a modified nominal group process, followed with the Delphi Technique, Matthews et al. (24) asked practitioners, faculty, and students in Wisconsin to identify professional activities of an administrative dietitian in an entry-level position and describe the level of ability expected for the performance of these activities. Nineteen activities were identified with the highest consensus for abilities and knowledge within the areas of communication, problem-solving, evaluation, decision-making, and sanitation.

In 1975, Scialabba (9) studied the functions of dietetic personnel in ambulatory care settings by actual observations within the facilities. Sixty-eight role functions were identified for nutritional care dietitians serving in such settings. Scialabba found that dietitians viewed each of these roles as components of their function within the hospital, however, the dietitians perceived the emphasis differently than did other professionals. She concluded that although these role functions were observed in support of the common opinion that dietitians have a function in the health care field, they cannot become complacent and assume there will automatically be a role for them in newer health care systems.

Scialabba (9) also stated that dietitians have a responsibility to demonstrate their effectiveness in contributing to policy and decision-making and make a unique contribution in the provision of nutritional services. She further urged dietitians to be competent in the art of dietary counseling, fiscal planning, implementing and evaluating programs, coordinating and integrating within the health care team, interacting with a wide variety of health professionals, and most importantly, showing their effect on the outcome of patient care. She concluded that professionals are needed who have self-confidence, assertiveness, communication skills, expertise in meeting nutritional needs, and experience and knowledge of evaluative techniques.

Other roles for the dietitians that have not been examined in such depth are those of educational program director, faculty, clinical experience supervisor, member of advisory groups, and school foodservice director (25). Each of these roles is unique in itself but also has similarities with all other roles.

Need for Supportive Personnel

The American Dietetic Association became active in development of education and training programs for supportive personnel during World War II (5, 25). At that time, there were not enough qualified dietitians to meet the demand for service, and the training of qualified supportive personnel was a method for allowing available dietitians to perform more effectively.

In 1941, an ADA committee was appointed to cooperate with the American Red Cross to study the problem of training dietitian aides to perform duties that did not demand a specialized professional background

(26). A greatly increased demand for dietitians in both civilian and army hospitals was reported during the mid-1940's. Expansion of the sphere of professional opportunities during the decade was a complicating factor in meeting the need for dietitians in hospitals. Among problems facing the Association in 1947 were the lack of professional dietitians and the resultant need to improve feeding in small institutions. A review of the shortage of dietitians at the 34th ADA annual meeting in 1951 again revealed an acute problem, particularly in small hospitals. At this meeting, the training of supervisory personnel and the delegation of routine duties to other than qualified dietitians were stressed. In a review of the 1950-1960 decade, Van Horne (27) reported that training for auxiliary workers became an obvious means by which dietitians could meet their responsibilities.

In a commentary soon after the enactment of the 1965 Title XVIII amendment to the Social Security Act, commonly called Medicare, the shortage of hospital dietitians was indicated (28). Federal legislation concerning Medicare requirements escalated the need for trained supportive personnel in nursing homes by requiring homes that desired to participate in the Health Insurance for the Aged Program as "Extended Care Facilities" to meet certain standards (5). The regulations required that a person be appointed by the administrator to be responsible for the total foodservice of the facility. If this person was not employed full time, regularly scheduled consultation from a professional dietitian or other person with suitable training was required (29-31). Many of these facilities were served by consultant dietitians who needed personnel within the foodservice department with responsibility and authority to

carry out the policies and procedures developed by the consultant and assure smooth functioning at all times (32, 33).

Studies in 1968 by Hubbard and Donaldson (2, 34) focused on professional manpower needs for departments of dietetics. In any facility, manpower planning is a process to assure that the correct numbers and kinds of people are in place at the appropriate time performing the most economically useful task. Hubbard and Donaldson stressed that a shortage of dietitians in hospitals still existed, and they did not foresee a change over the next ten years. They contended that programs should be studied, developed, and implemented to utilize professional dietary personnel more effectively and extend professional dietary services. Hubbard and Donaldson concluded from their manpower studies that utilization of trained supportive personnel can allow dietitians to devote their abilities, time, and energy to the specialized services of their profession.

Powers (35) stressed the need for supportive personnel in the form of paraprofessional dietetic service supervisors in all health facilities. He stated that these supportive persons are able to develop their roles to fill the need for both middle managers and responsible contact personnel below the dietitian level when they have been trained adequately. Some of these roles are food production manager, cafeteria manger, diet office supervisor, patient foodservice supervisor in large facilities, and foodservice manager in small facilities.

Educational programs have been developed and refined to meet evolving personnel needs throughout the history of the dietetic profession. For example, programs for the dietetic assistant and dietetic technician have been developed to train supportive personnel to assist the dietitian

in providing quality nutritional care services for health maintenance and exhibiting leadership in foodservice management (5).

Kline and Dowling (4) suggested that dietitians share responsibilities with supportive personnel for the nutritional care of clients. Use of both the dietetic assistant and dietetic technician will allow a registered dietitian to fulfill present professional functions as well as develop innovative services (25). Williams (5) contended that a well trained team of supportive personnel can lessen the routine demands confronting today's professional, and the registered dietitian can have time for creative, innovative leadership. Woodward (36) suggested dietitians can affect their future positively by educating and utilizing supportive personnel and thus raise the level of nutritional care provided. From a survey of dietetic technician graduates, Appel et al. (37) concluded that limited demand was a problem because employers lacked knowledge regarding graduates' capabilities. Scialabba (9) proposed that better utilization of supportive personnel could be accomplished if functions of dietetic personnel are identified specifically.

Delegation to Supportive Personnel

Aspects of Delegation

Dietetics is not the only profession facing a manpower shortage (13). Some of the other professionals who are delegating to qualified personnel are lawyers, pharmacists, nurses, and physicians (14).

Delegation can bring many benefits when a department head becomes actively involved and supportive of delegation (38-43). Without delegation, the department head can become burdened with routine tasks (38). Scott (43) contended that effective delegation can lead to smooth and

efficient departmental operations and that delegation to subordinates encourages career ladderling. Haynes (40) encouraged delegation to subordinates as a means of involvement, thus increasing employee satisfaction. The degree of delegation is determined by considering the nature of the task, ability of the person doing the work, amount of top management interest, and time available for task completion (40).

Brooks (39) concurred that routine tasks are a waste of the department head's time, and that performance of these tasks, when delegated to well trained subordinates, can serve as training for bigger assignments. If the manager has difficulty in delegation, Brooks suggested asking subordinates periodically to develop plans for assuming additional duties. Several authors (38, 39, 42, 43) indicated that authority for a task should be delegated along with the responsibility.

Delegation in Dietetic Practice

Importance of delegation also has been suggested in a number of studies investigating activities of dietitians (1, 3, 5, 9). The Study Commission on Dietetics noted in Finding III that the steadily rising demand for professional services of dietitians with their high levels of knowledge and skill requires that they cease to perform routine and repetitive tasks, or tasks that trained subordinates could undertake (1). This finding reemphasized the need for delegation in dietetic practice recognized since World War II (5). Kline and Dowling (4) suggested manpower shortages are not the only reasons to delegate. When consideration of long range plans and understanding of the objectives of delegation are stressed in an organization, dietitians may overcome inflexibility and insecurity and delegate to supportive personnel (4).

Tasks that tend to be delegated by dietitians to supportive personnel are the routine day-to-day functions (1, 3, 12). Schell and Bloetjes (3) found that dietitians were willing to delegate greater numbers of tasks if supportive personnel were trained adequately. Williams (5) noted that if the general ADA membership had an understanding of the competencies of dietetic technicians, greater utilization of technicians probably would be the result.

Lumsden et al. (10) indicated that when dietitians delegated functions, the personnel most prepared to assume the responsibilities were dietetic technicians. Scialabba (9) saw a need for dietetic technicians in all phases of expanded nutritional services. Dietetic technicians have been identified by ADA as the first persons to whom the dietitian should delegate; the role and responsibilities of the technician have been defined by ADA in this context (44).

In 1975, Appel et al. (37) distributed a survey instrument to 1972 to 1974 graduates of dietetic technician programs and their supervisors. The responses indicated that supervisors preferred to hire formally trained technicians who could assume responsibility with limited on-the-job training. These supervisors in various food related services evidenced a willingness to employ more dietetic technicians when available. Kline and Dowling (4) found that supervisors did not always utilize dietetic technicians to the maximum extent of their capability. They did find that dietitians' number of years of experience was not a predictor of the extent to which duties should be delegated. Hospital size could be a factor, and the study indicated that more delegation occurred in a large hospital than in a small hospital.

Lumsden et al. (10) distributed questionnaires to clinical, administrative, and generalist hospital dietitians who had graduated between 1968 and 1972. The responses indicated that while a number of dietitians were willing to delegate to the dietetic technicians, there were reservations as to the type of task functions to be delegated. Beck (11) followed Lumsden et al. with a similar mail survey study to determine if there had been a change in the willingness by dietitians graduating between 1973 and 1977 to delegate. Findings from Beck's study showed that dietitians who perform both administrative and clinical functions (generalists) were more willing to delegate task functions than those who performed only one of these roles. Those performing only clinical functions were more willing to delegate task functions than those performing only administrative functions. The consensus of dietitians in Beck's study was that before they would delegate more tasks to dietetic technicians, assurance of appropriate training and experience would be required.

Williams (5) and Lumsden et al. (10) concurred that delegating selected task functions to dietetic technicians extended professional skills and contained costs. Clemen (45) advocated allowing dietetic technicians to assist in assessing a patient's nutritional status, implement and then evaluate various nutritional care programs, and be involved in employee supervision, menu planning, purchasing, and other cost control activities in order to enable technicians and dietitians to perform effectively.

The Dietetic Team

In an official statement of position of The American Dietetic Association (25), support was voiced for the education, utilization, and involvement of dietetic assistants and dietetic technicians to assist the dietitian in providing quality nutritional care services for health maintenance. Also, the position paper indicated that future policy and position statements would include reference to the dietetic technician and the dietetic assistant. Assurance was given that ADA action would enhance the functions of a dietetic team at all levels.

The Dietetic Assistant

According to the ADA position paper on dietetic assistants and technicians (25), the competencies of the dietetic assistant are primarily in the practice of foodservice supervision. The ADA approved definition of the dietetic assistant is:

A person who has successfully completed a program for dietetic assistants which meets the standards established by The American Dietetic Association. Under the supervision of a dietitian, or a dietetic technician, or an administrator and a consultant dietitian, and through assigned tasks, the dietetic assistant participates in providing foodservice supervision and nutritional care services (25).

Responsibilities of the dietetic assistant include:

1. Assists in standardization of recipes and testing of new products.
2. Receives deliveries and checks receipts against specifications and orders.
3. Assures correct storage and inventory of food and supplies.
4. Prepares food production work sheets and assists in the supervision of food production and service.
5. Supervises personnel in sanitation, safety, and security practices in accordance with established standards.
6. Instructs personnel in use, care, and maintenance of equipment.
7. Assists in orientation, on-the-job training, and in-service educational programs for personnel.

8. Plans daily personnel schedules based on a master rotation plan, monitors and makes necessary adjustments in daily personnel coverage, and maintains attendance records.
9. Participates in personnel evaluation programs.
10. Understands and supports personnel policies and union contracts.
11. Collects operational data as requested.
12. Assists in implementing cost control procedures.
13. Makes recommendations which may be incorporated into policies or procedures.
14. Recommends improvements for facility and equipment needs.
15. Processes dietary orders, menus, and other directives related to patient care.
16. Helps patients select menus.
17. Writes modified diets according to established patterns.
18. Utilizes appropriate verbal and written communications and public relations, inter- and intradepartmentally (44).

Earlier reports on supportive personnel used the terminology, foodservice supervisor and cook manager, rather than dietetic assistant (46).

✕ The Dietetic Technician

The dietetic technician is at the first level of delegation from the dietitian. The dietetic technician is defined by ADA (25, 44) as:

A technically skilled person who has successfully completed an associate degree program which meets the educational standards established by The American Dietetic Association. The dietetic technician, working under the guidance of an R.D. or an A.D.A. dietitian, has responsibilities in assigned areas in foodservice management; in teaching foods and nutrition principles, and in dietary counseling (25, 44).

The responsibilities of the dietetic technician include:

1. Plans menus based on established guidelines.
2. Standardizes recipes and tests new products for use in facility.
3. Procures and receives supplies and equipment following established procedures.
4. Supervises food production and service.
5. Monitors foodservice for conformance with quality standards.
6. Maintains and improves standards of sanitation, safety, and security.
7. Selects, schedules, and conducts orientation and in-service education programs for personnel.
8. Participates in determining staffing needs, in selecting personnel, and on-the-job training.
9. Develops job specifications, job descriptions, and work schedules.

10. Plans master schedules for personnel.
11. Maintains a routine personnel evaluation program.
12. Understands and supports personnel policies and union contracts.
13. Assists in the implementation of established cost control procedures.
14. Gathers data according to prescribed methods for use in evaluating foodservice systems.
15. Makes recommendations which may be incorporated into policies and develops written procedures to conform to established policies.
16. Recommends improvements for facility and equipment.
17. Submits recommendations and information for use in budget development.
18. Compiles and uses operational data.
19. Obtains, evaluates, and utilizes dietary history information for planning nutritional care.
20. Guides individuals and families in food selection, food preparation, and menu planning based on nutritional needs.
21. Calculates nutrient intakes and dietary patterns.
22. Assists in referrals for continuity of patient care.
23. Utilizes appropriate verbal and written communication and public relations, inter- and intradepartmentally (44).

The Dietitian

Both the dietetic assistant and the dietetic technician work under the guidance of the team leader, the dietitian (25, 44). Definition of the dietitian may be generic or functional with the inclusion of position responsibilities. An A.D.A. dietitian is defined as:

A specialist educated for a profession responsible for the nutritional care of individuals and groups. This care includes the application of the science and art of human nutrition in helping people select and obtain food for the primary purpose of nourishing their bodies in health or disease throughout the life cycle. The participation may be in single or combined functions; in foodservice systems management; in extending knowledge of food and nutrition principles; in teaching these principles for application according to particular situations; or in dietary counseling (44).

A registered dietitian (R.D.) is defined by ADA as:

An A.D.A. dietitian who has successfully completed the examination for registration and maintains continuing education requirements. In providing nutritional care, the R.D. applies the science and art of human nutrition in helping people select and obtain food for the primary purpose of nourishing their bodies in health or disease throughout the life cycle. The participation may be in

single or combined functions; in foodservice systems management; in extending knowledge of food and nutrition principles; in teaching these principles for application according to particular situations; or in dietary counseling (44).

Functional titles for dietitians that have been defined are administrative dietitian, clinical dietitian, community dietitian, consultant dietitian, research dietitian, teaching dietitian, associate director, and assistant director (44, 46). Employing organizations will require generally that the holder of these titles be registered dietitians. The responsibilities for each vary according to the focus of the position (44).

Defining the role of each person in the dietetics team is an effort to differentiate between the roles and functions of each member (46). Knowledge of responsibilities and activities may lead to development of training programs. Scialabba (9) stressed that identification of role functions is a necessary base for the definition of the specialized competencies required for dietetic practice. Delineation of roles and relationships of persons in dietetic practice were recommended by the ADA Task Force on Competencies, to enable future education to be more responsive to the needs of the profession (16).

Role Expectations

Studies have indicated that differing role expectations or role conflict and role ambiguity are dysfunctional for individuals and organizations (47). Whetten (48) studied directors and staff in public agencies and found strong potential for conflict between expectations of central administrators and agency staff. Directors who were faced with incompatible demands described their roles as highly unpredictable and reported a number of job related problems.

Lynn and Vaden (47) noted that compliance with one set of expectations may make compliance with another set difficult. They contended that conflict over role expectations could be reduced by providing necessary information with respect to role requirements and communicating these requirements clearly and consistently to individuals.

Schiller (49) stressed that in designing a dietetic technician program the faculty must have a clear understanding of the differences between functions of dietetic technicians and dietitians. Otherwise, dietetic technicians may be taught unintentionally to assume roles for which they are unprepared. Schiller emphasized that dietetic technicians must be made aware of limitations in their ability to make judgments and in their knowledge of dietetics. Dietitians must acquire competencies in exercising initiative, assuming a leadership role, asserting themselves as members of the administrative or medical health care team, and assuming roles that acknowledge their expertise as food and nutrition specialists. She noted further that a challenge of career mobility programs is to develop within technicians the attitudes and values appropriate to the supportive role, while educating dietitians to exercise the leadership appropriate to the professional dietitian.

Competencies in Dietetic Practice

Definition of Competency

Competence, according to Hart (50), is defined generally as adequacy for a task. Bell (51) contended that competency has different meanings to different people. She stated that in the context of higher education it is often defined as the minimum knowledge, skills, affective behavior, and/or judgment that a person is certified to possess on a set of

criteria and level of expectation. Bell defined role competencies as those functions associated with one's role as a professional; in some instances, competencies could be used in lieu of objectives. Many role competencies consist of a statement of content to be learned and a phrase that links content with the way it will be used. In contrast, entry-level competencies identify what the individual should be able to perform independently, as well as areas requiring guidance from a specialist, at least in the first position or job.

Hart (50) proposed that in the broad sense of the given definitions any mode of instruction aims for competence; i.e., the development of well qualified individuals with the required knowledge and skills. For competencies to be developed within a program, essential elements, implied characteristics, and related and desirable elements should be defined.

A dietetic practitioner, according to Watson (52), can acquire competencies by coordinated exposure to theory and practice. Hart and Sharp (53) proposed that entry-level competencies must be established first, and then competencies can be defined for each area of practice within dietetics.

Competencies in Other Professions

Bell (51) observed in her 1976 article that a number of universities and colleges are experimenting with competency-based education in various disciplines. Health related disciplines other than dietetics are no exception.

Porter (54) stressed that competencies for the diabetes educator can and should be defined in the areas of instruction and education through job observation, worker interrogation, and expert opinion. Since skills

required for diabetes education are beyond those usually employed in teaching patients, Porter stressed the need to define competencies in terms of behaviors.

Miller and Vericella (55) contended that teaching in any area of the health professions requires certain competencies. They found four major groups of competencies: planning, instruction, evaluation, and motivation. These researchers found that although all groups of competencies were needed in each area of teaching, the competencies would need to be redefined to a degree for the area selected.

In the American School Food Service Association, work on identifying school nutrition competencies for personnel employed in local school district foodservice operations has been initiated (56). The positions that have been analyzed were: Foodservice Director I and II; Foodservice Manager I, II, III, and IV; and Foodservice Assistant I, II, III, IV, and V. After data are collected and competencies defined, programs can become more responsive to the needs of school foodservice. Possessing these competencies may better prepare individuals to operate and administer school foodservice programs successfully.

Report of the ADA Task Force on Competencies

The initial charge of the ADA Task Force on Competencies was to develop a conceptual framework for the profession of dietetics that could serve as essential preliminary work for competency-based education (16). After deliberation, the focus was changed, however, and the report submitted in 1978 centered on two related objectives: (a) to examine the prevailing issues that produce ambiguity and frustration for both educators and practitioners, and (b) to develop a systematic technique for assuring excellence that can serve as the mechanism for professional

responsiveness to external changes. In order to facilitate their work, the Task Force first developed a set of underlying definitions; two of which were that (a) goals describe the process of the educational program, and (b) outcomes describe competence prerequisite for entry into the profession.

In addition to establishing definitions, the Task Force formulated assumptions relating to the profession, professional education, the entry-level dietitian, the dietetic technician, and the dietetic assistant (16). The intent was that by sharing these assumptions with the membership at large, and modifying them as needed, ambiguity relative to the current state of the profession could be alleviated.

Eight recommendations were formulated to identify a mechanism for assuring quality in dietetic education and, ultimately, in practice. The Task Force purported that the emergence of the technician and assistant levels of practice and increasing specialization had resulted in fragmentation of health care and possible role conflicts. The need to ensure standards of education, practice, and continuing education responsive to the needs of society was stressed in the recommendations. Studies to delineate roles and relationships in practice and to assess supply, demand for, and utilization of dietetic practitioners were among those recommended by the Task Force.

Competencies for Dietitians

ADA has given high priority to the identification of entry-level competencies as evidenced in Plan IV (57). Plan IV incorporates basic competencies into the stipulated minimum academic requirements. The competencies resulting from these academic requirements are almost exclusively in the cognitive domain, and therefore are not properly

designated as entry-level competencies (18). Also, Plan IV competencies were developed for the traditional undergraduate program, not for the coordinated undergraduate program in which theory and practice are combined.

One study addressing the need for entry-level competencies was done by Bedford (57) using the Delphi technique. Her research focused on the identification of affective competencies combined with a behavior statement for each competency. Bedford developed a set of forty-one affective competency statements with related behavior statements. She indicated that further research was needed utilizing these competency statements to enable development of a means of evaluating them and concluded that these competency statements could be used in evaluating dietetic students. Such statements also could be used by dietitians evaluating staff members who are at entry-level.

Loyd and Vaden (18) obtained information from a nationwide sample of ADA administrative, clinical, and generalist hospital dietitians concerning their expectations of entry-level generalist dietitians. The instrument based on the Cagguila (17) competency statements asked the dietitians to rate each competency on essentiality for the entry-level generalist and degree of supervision required. In the Loyd and Vaden study, the Cagguila statements classified as administrative were sent to administrative dietitians, and similarly, clinical statements were sent to clinical dietitians. Two samples of generalist dietitians were drawn from the ADA membership, one sample received an instrument with the administrative competencies and the other the clinical instrument. Loyd and Vaden found that twenty-three of the forty-seven administrative competency statements were considered to be essential, eighteen desirable,

and six beyond entry-level. Of the thirty-five clinical competency statements, fourteen were deemed to be essential, sixteen desirable, and five beyond entry-level. Generally, as far as degree of supervision required, the competency statements ranked as being the most essential were considered to be performance areas requiring the least amount of supervision. The reverse also was true, those competency statements ranked as requiring closer supervision were considered to be the least essential for entry-level practitioners.

The Baird (19) survey instrument also employed the Cagguila performance statements; however, in this study the statements were presented as a composite listing, rather than in the two orientations of administrative and clinical as in the original document. Baird's study sample was composed of a random selection of 1,600 administrative and 1,600 clinical hospital dietitians as listed on the ADA membership rolls. The research questions concerned similarities and differences in the roles of the hospital administrative and dietitians at entry and the three-year experience level. Results indicated that there was an overlapping of administrative and clinical practice on a number of the competency statements. Baird applied factor analysis to the data to extract dimensions or factor structures for the two experience levels. Five distinct dimensions were identified for each of the specialties at entry-level and seven for each specialty at the three-year experience level. Delineation of the dimensions at both experience levels showed each of the two reflected a generalist image. Baird suggested these dimensions be identified, described, and tested for consensus within the profession in order to serve as a basis for subsequent development of competencies.

One particular area of dietetic practice was investigated by Morales et al. (59, 60), the area of menu planning competencies. Five aspects of menu planning were evaluated on importance and time allocation to determine need to redefine any of the competency statements, and study differences in ratings in relation to years of experience in the profession. A national sample of practicing ADA dietitians, including full-time food-service managers, generalists, and administrative dietitians rated descriptor items associated with each of the five competency statements on the value or importance that particular activity had for the respondent, and the time frequency with which the practitioner would consider each item in menu planning. To evaluate the data by levels of practice, three groupings were defined: five years or less, six to fifteen years, and fifteen years or longer.

Morales et al. (59, 60) found that scores for importance did not differ significantly among practice levels for any competency statement. More experienced groups, however, regarded the competency statement activities as requiring more frequent time consideration than did the less experienced group. In general, the majority of the importance and time consideration scores were 3.0 or higher on a 4-point scale. Thus practitioners, as a whole, viewed the competencies as very important and requiring frequent consideration. When items in the affective domain were analyzed, all these items were scored as both more important and requiring more frequent time consideration than the cognitive items with one exception, that of utilizing merchandising techniques. The researchers suggested that further research in other areas of dietetic practice is needed to elaborate competencies; results could be consolidated to define areas of expertise in dietetic practice.

Studies Related to Competencies of Dietetic Technicians

Even fewer reports on competency development for dietetic technician programs were found in the literature. One report dealt with competencies for a clinical emphasis program, and the other with management competencies.

An approved clinical-emphasis program for dietetic technicians employed a competency-based education model in the curriculum to aid in career mobility (15). To develop dietetic technician competencies for the program, the roles of the dietitian were defined first. These roles then were validated by practicing dietitians and dietetic educators. Faculty analyzed the component parts of each role and differentiated role functions for technicians and dietitians, which were validated by comparison to ADA's Plan IV (20) for education of dietitians. Resultant roles for the technician then were defined in relation to each of the dietitian's roles. Howard and Schiller (15) stressed that these competencies were thought out carefully and developed for a competency-based career mobility program, and that the competencies must be evaluated continuously and changed to reflect new trends and emphases.

Entry-level competencies for dietetic technicians in foodservice management were identified by Holland (61) in 1978, who surveyed the directors of twenty-four ADA approved technician programs using three sequential Delphi instruments. This process yielded competencies ranked by priority and classified according to foodservice subject area. In order for a competency to be placed in a particular category, 75 per cent agreement among the directors was required. This information was used to develop a taxonomy of educational objectives, which could be used for program development, evaluation, and in-service training.

Although not directly related to development of technician competencies, the Lumsden et al. (10), Beck (11), and Rose (12) series of studies at Loma Linda University, which were concerned with identification of task functions, provided relevant data for competency design. Lumsden et al. (10) conducted their study to determine the degree to which dietitians were willing to utilize dietetic technicians in the role proposed by ADA. Hospitals to be surveyed were selected by a systematic random sampling procedure in which one out of every eleven hospitals meeting defined criteria was selected, resulting in a sample of 197 hospitals located throughout the continental United States. Two questionnaires were sent to each of the hospitals, one for the administrative dietitian and one for the clinical dietitian with instructions that if one person performed both functions he/she should complete both questionnaires. The questionnaire for the administrative dietitian contained twenty-four task functions and the clinical questionnaire included twenty-seven. The dietitians were asked to respond to each of the task functions by indicating whether they performed the task function; to categorize who should ideally perform the function, dietitian or dietetic technician; and to indicate whether or not it would be practical to delegate each function to a trained dietetic technician.

The researchers reported that no significant differences were found between the percentage of task functions administrative dietitians were willing to delegate compared with the percentage clinical dietitians would delegate. They found that dietitians serving in a generalist capacity were willing to delegate a significantly higher percentage of their clinical task functions than their administrative functions.

Lumsden et al. (10) also compared data from dietitians graduating before 1968 to those from dietitians graduating after 1968. No significant differences were found in reports of the two groups of administrative dietitians; however, clinical dietitians graduating in 1968 or later were willing to delegate significantly more duties. When 33 per cent or more of the dietitians were unwilling to delegate a task function, it also was noted that the dietitians indicated the task was impractical to delegate. While a substantial number of dietitians were willing to delegate to the dietetic technician, there were reservations as to the type of task functions that should be delegated.

A follow-up of the Lumsden et al. (10) study was conducted four years later by Beck (11). The purpose was to determine the degree of change between 1973 and 1977 in the willingness of dietitians to delegate task functions to the dietetic technician. Dietetic technicians were included in this research to determine if they were performing the task functions dietitians claimed were delegated to them, and to determine if technicians perceived their training adequate to perform these task functions. The questionnaire developed and used by Lumsden and coworkers was mailed to dietitians in the same hospitals involved in the earlier study. Two to four questionnaires for the administrative dietetic technician as well as the clinical dietetic technician also were sent to each survey hospital to be distributed to appropriate personnel. If a dietetic technician performed both administrative and clinical roles, he/she was asked to complete both an administrative and clinical technician questionnaire. Responses to this research indicated that generalist dietitians were more willing to delegate task functions than those who performed only one of these roles. Those performing only

clinical functions also were more willing to delegate task functions than those who performed only administrative functions.

The only difference reported between 1973 and 1977 was that in the Lumsden et al. study the administrative dietitians reported greater willingness to delegate task functions than did administrative dietitians in Beck's study. Technicians reported they were performing many, but not all, of the task functions dietitians indicated they were delegating to the technicians. On the whole, dietetic technicians stated that they were trained adequately to perform the task functions assigned to them. The clinical technicians pointed to lack of training more often than did administrative technicians. None, however, were graduates of approved ADA technician programs. Beck (11) indicated the need for additional research to determine how the dietetic technician is viewed by the dietitian and what the dietitian expects from the dietetic technician regarding educational background, training, experience, and level of competence.

All persons holding membership in ADA as dietetic technicians as of August 1977 were contacted by Rose (12). The survey instrument developed by Rose contained two separate questionnaires, an administrative technician questionnaire with twenty-seven task functions and a clinical technician questionnaire with thirty-two task functions. The technician was to choose the questionnaire most pertinent to the duties he/she was performing and discard the other. Technicians functioning in both administrative and clinical roles were asked to complete both questionnaires.

For each task function, technicians were asked to (a) indicate whether they performed the task, (b) categorize each function as to whom should ideally perform it, and (c) evaluate the adequacy of their training

for each function. The responses indicated that overall, technicians performed 75 per cent of the task functions. Administrative technicians generally reported that the dietitian or the technician could ideally perform the listed task functions. Clinical technicians reported a clearer delineation of who should perform the task, technician or dietitian. Generally, both groups indicated they had been trained adequately to perform the majority of the tasks, although more clinical than administrative technicians reported inadequacies of training. The research stressed a need for further and better delineation of the role of the dietetic technician.

Career Laddering

The concept of a career ladder as a part of the allied health movement began to emerge in the dietetic profession in 1968 as a result of guidelines for dietetic careers prepared under contract with the United States Office of Education (5). By 1971, the career ladder was identified with the dietetic team levels of dietetic assistant, dietetic technician, and dietitian. Also, standards of training for the dietetic assistant and dietetic technician were developed. As the career ladder encouraged progression from dietetic assistant to the dietetic technician with an associate arts degree and to the dietitian with a bachelor's degree, training began to move toward credit courses in junior colleges.

Appel et al. (37) stressed that consideration should be given to providing stronger linkages between associate and baccalaureate programs that would allow and encourage the movement of technicians to higher levels of professional practice. This movement could be accomplished better if the dietetic profession would articulate each type of

educational activity it endorses in order to establish the level of performance to be anticipated from an individual on completion of training, and stimulate the development and identity of urgently needed career ladders (4). Articulation then allows educators, practitioners, and researchers in dietetics to work together to develop educational programs for the career life of dietitians, including orderly progression of study with increasing depth and complexity, progressing from general to specific (34).

Hubbard and Donaldson (34) contended that dietitians should continue their interest and support for the development of additional educational and training programs for personnel supportive to dietetics. Kline and Dowling (4) concluded that dietitians who understand and concur with the philosophy of sharing responsibilities with supportive personnel for patient nutritional care may be more likely to endorse new career ladders and avoid token delegation.

In 1977 Schiller (49) described a program developed at Mercy College of Detroit to encourage career mobility. The concept was to begin instruction of basic knowledge required by the profession in the freshman year. Thus, students have a marketable skill gained by learning and practice at the end of two years. This approach differs from the other more generally practiced concept of students first receiving basic education with branching into the health care field after the freshman year. The Mercy College of Detroit program is based on a competency-based curriculum allowing transition from a two year associate of arts program to a four year baccalaureate program. Reentry of those students who graduate with an associate of arts degree, work a few years, and then desire to return for a bachelor's degree and become a registered dietitian

is facilitated. This approach exemplified the concept of career mobility or career laddering. Research has not yet been conducted on the efficacy of the approach; however, it does provide new opportunities in dietetic education (49).

METHODOLOGY

The Study Sample

The sample was composed of dietitians who were members of The American Dietetic Association and employed as hospital dietitians in Colorado, Kansas, Missouri, Nebraska, and Oklahoma. The study was limited to hospital dietitians for several reasons. Dietitians practicing in hospitals comprise the largest segment within ADA (62). Also, dietetic technicians are most commonly identified within health care facilities, principally hospitals. In addition, career ladderling for various professions is more common in a hospital setting (15). This particular five state area was chosen because the study was supported by the Career Ladderling Project of the University of Kansas School of Health Sciences and Hospital which was concerned with educational programs in Kansas. Further, informal surveys have indicated persons interested in dietetic technician programs would travel only short distances, thus limiting the study to Kansas and contiguous states.

Dietitians in the five selected states in the ADA membership roles and classified as hospital or university medical center dietitians were sent a copy of the research instrument (N = 631). The names and addresses were obtained from the membership list of The American Dietetic Association.

The Instrument

The research instrument (Appendix A) for this study consisted of three sections: Part I, biographical and demographic information about

the respondent and the hospital in which he/she worked; Part II, questions concerning experience of the dietitian in working with dietetic technicians, information about technicians on hospital staff, and educational opportunities and job possibilities for dietetic technicians within the facility served by the dietitian; and Part III, eighty-two competency statements (referred to as functional responsibilities in this study) used to study potential roles of technicians and dietitians. Since the study involved use of standardized or previously tested scales and standard survey methodology, a pilot study or pretest was not considered necessary. The proposal was approved by the Kansas State University, College of Home Economics, Human Subjects Committee.

Part I

The final form of the first part of the instrument pertained to biographical and demographic information about the respondent and information about the employing hospital. The requested biographical data included state of residence, professional status, ADA membership route, highest degree, year becoming ADA member, years employed since becoming ADA member, job classification, and years in present position. Other requested information included size of community, size of hospital, type of care provided by institution, type of hospital, R.D.'s on staff, and A.D.A. dietitians on staff.

The section was reviewed three times until the final version was approved. The first revision by the major advisor led to the inclusion of type of hospital, type of care provided, the listing of position, and open ended questions requiring a response in years rather than categorical responses. During a second review by three faculty members (two dietetic educators and a psychologist), questions considered unclear or awkward

were revised. In addition the question concerning size of community in which employed was added. The Career Laddering project staff also reviewed the questionnaire but made no changes in this first part of the instrument.

Part II

The final form of Part II contained questions concerning experience of the dietitian in working with dietetic technicians, information about technicians on the hospital staff, and educational opportunities for dietetic technicians within the facilities. The items included queries concerning number of qualified dietetic technicians on staff in nutrition care and foodservice management, dietitian's experience working with qualified dietetic technicians, number of ADA and non-ADA dietetic technicians on staff, and number of persons on staff with capability to become dietetic technicians. Other items were queries regarding whether there was an ADA approved dietetic technician program in a fifty-mile radius, an estimate of the number of persons willing to leave their jobs and immediate area to attend a technician program, and whether a position would be available after completion of the program. Participants also were asked if there was an adequate demand to support a technician program at an area community or junior college. An opinion was sought on the area of specialization for technicians hired in the future, and need for technicians trained as generalists.

This section required more revision from the thesis committee and grant staff because it was a new area to be surveyed. In the first draft there were only two questions, one seeking the number of educationally qualified dietetic technicians on staff in each area of specialization and the second, a four part question, concerning potential for career

laddering within the facility. The second question sought whether there were persons on staff with potential to become a dietetic technician, there was a program available, the qualified person would be willing to leave the area and the job to attend a technician program, and there would be a position available for that person after completion of the degree. These questions were revised for wording and clarity and reviewed again.

At a joint meeting, the two dietetic educators and the researcher decided to enlarge this section by requesting the following information: previous experience of the dietitians in working with qualified dietetic technicians, number on staff classified as ADA dietetic technicians and non-ADA dietetic technicians, if adequate demands existed to support a technician program at an area community or junior college, preferred background for dietetic technicians hired in the future, and need for technicians trained as generalists. In addition, "area" for a program was defined as a 50-mile radius. The ADA definition of a dietetic technician was added at the beginning of the section for clarification if needed by the respondent. This draft was revised by the research committee, word changes in some questions were made, and an introduction to this part included as the page heading.

After review by the Career Laddering Project staff, the parts of one question (item 1) were reordered, clarifications made in four other questions, and one question (item 5) was restructured. The purpose of the reordering of the one question was to incorporate the concept of career laddering into the structure of the question.

Part III

The third section of the instrument consisted of eighty-two competency statements, referred to in this study as functional responsibilities, used by Loyd and Vaden (18). The statements were adapted from those of Cagguila (17), who was commissioned by the ADA Executive Board in 1972 (63) to begin development of competencies for the entry-level generalist dietitian as a first step in identifying competencies for the profession. Her statements were formulated within the two main areas of dietetic practice, administrative and clinical. There were forty-seven competency statements for administrative dietetics consisting of nineteen items on planning and organization, three on staffing, eleven in direction, and fourteen on control and evaluation. The thirty-five statements in the area of clinical dietetics ranged from thirteen on planning and organization for the provision of nutrition care, eight on direction, and eleven on control and evaluation of clinical nutrition care.

Loyd and Vaden (18) had used these statements in the two major divisions, with the administrative set of competencies being sent to administrative dietitians for evaluation, and the clinical statements sent to clinical dietitians. Generalist dietitians were asked to complete both sets. Baird's (19) study, which used this same listing of competencies, revealed that many administrative duties were performed by clinical dietitians and vice versa. Baird found that the competencies developed by Cagguila were not clear-cut statements of either administrative or clinical duties; rather in actual practice dietitians performed both administrative and clinical functions regardless of their position designation.

Based on these findings, Part III of the instrument for this study included all eighty-two statements randomly ordered on the questionnaire. This randomization permitted the respondents to differentiate these functions in terms of their perceptions of their responsibilities, rather than being influenced by a pre-determined categorization.

The dietitians were asked to give two responses to each of the eighty-two statements. Initially, they were asked if (a) they were involved with the particular activity, and (b) who would they prefer to see perform the activity. The second revision asked the dietitians to indicate their responsibility for each function (Scale A) by indicating one of the following responses:

- (1) major responsibility,
- (2) some degree of responsibility, or
- (3) not a responsibility of mine.

On Scale B they were asked to indicate who should perform the activity. A five-point scale adapted from Spear et al. (64, 65) in a study of consultant dietitians and foodservice supervisors was used. The responses on the scale for the current research were:

- (1) dietitian should have total responsibility,
- (2) dietitian with assistance of dietetic technician (75:25),
- (3) joint involvement in the activity (50:50),
- (4) dietetic technician with supervision of dietitian (75:25), and
- (5) dietetic technician could perform alone.

Both scales were included to learn the opinions of dietitians concerning delegation potential on a task even if they did not perform the task.

Also responses on both scales were to be analyzed to determine if a response to Scale A would influence response on Scale B.

In the third and final revision, word changes and clarifications were made in the directions and scale headings. The final instrument consisted of eight pages and was printed in booklet form on yellow paper. The letterhead on the front page identified cosponsors and indicated the survey was a part of the project on Career Laddering in Dietetic Education. The cosponsors of the project were: University of Kansas, Department of Dietetics and Nutrition; Kansas State University, Department of Dietetics, Restaurant and Institutional Management; and the Kansas Dietetic Association.

Distribution of the Research Instrument

The instrument was mailed from and returned to the Department of Dietetics, Restaurant and Institutional Management at Kansas State University. A cover letter that explained the study and included a statement of informed consent (Appendix B) was enclosed with each instrument. A self-addressed envelope with prepaid postage to facilitate return of the questionnaire was enclosed in the mailing. Each questionnaire was numbered to identify non-respondents for purposes of follow-up. Four weeks after the initial mailing a follow-up letter (Appendix B) and a second questionnaire were mailed to those not responding initially. The first instruments were sent by third class mail, and the second by first class mail. Responses to the third class mailing totaled 196, while the follow-up first class mailing yielded 137 responses.

Data Analysis

Data from the returned instruments were coded, key punched on 80-column computer cards, and analyzed. Categories were established for the

biographical factors that were obtained from open-ended questions.

Programs and routines of the Statistical Package for the Social Sciences (SPSS) were used for all data analysis (66).

Frequency distributions were compiled for each demographic and biographical variable in Parts I and II of the survey instrument. Frequency distributions also were compiled for each of the functional responsibilities on each of the two scales (Scales A and B) in Part III. Means were computed for the functional responsibilities on Scales A and B in Part III. Intercorrelations were computed between responses on Scale A and on Scale B for each functional responsibility to determine if Scale A ratings were related to Scale B ratings.

One-way analysis of variance was used to compare ratings on Scale B statements in Part III for groups defined by present position (Part I, item 8): Director, associate or assistant director (Response codes 1 and 2); Administrative staff or generalist dietitian (Response codes 3, 5, and 7); and Clinical dietitian (Response codes 4 and 6). This technique of statistical analysis permitted the researcher to overcome the ambiguity involved in assessing significant differences when more than one comparison was made (67). Analysis of variance aided in determining if ratings of the functional responsibilities were influenced by area of practice in the profession. Pearson correlation coefficient was used to determine relationships between years in the profession and ratings to items on Scale B in Part III.

Since an a priori pattern had not been established for clustering the functional responsibilities in the instrument, the final statistical analysis of the data was a principal components analysis of the functional responsibilities in Part III, using responses to Scale B, which was used

for its data-reduction capability (66, 68). In addition, the aim of the analysis is to identify dimensions that characterize the data (69). Statisticians (70, 71) have suggested as a rule-of-thumb to use a ratio of four or five responses to each item or variable in the analysis. A minimum number of respondents for analysis of the eighty-two functional responsibilities, therefore, would be between 325 and 400. Since the N for the study did not meet this acceptable minimum, the decision was made to classify the eighty-two items into a few broad functional categories. Cagguila's (17) classification of the statements into administrative and clinical was rejected since Baird (19) found that these classifications were not clear-cut descriptions of the two areas of dietetic practice.

Data from Scale A provided respondents' descriptions of their functional responsibilities in relation to each of the eighty-two items in Part III. These data were analyzed using analysis of variance to study differences in responsibilities among groups defined by present position as described above. Items then were classified as administrative, clinical, or general dietetics based on the results. Those rated significantly lower on Scale A by the directors (including assistant and associate directors), indicating a greater degree of responsibility, were categorized as administrative. Conversely, those rated significantly lower by the clinicians were classified as clinical responsibilities. If rating on items did not differ for the practice groups, they were categorized as general dietetics. Thus, three categories resulted with fourteen, sixteen, and fifty-two functional responsibilities in the categories of general, clinical, and administrative practice, respectively.

Principal components analysis was used for each of the three categories. For each of the three analyses, the initial matrix was rotated according to the varimax criterion to simplify the structure, or in other words, completing an orthogonal rotation. An eigen value of 1.0 was used to define the number of factors to analyze further. For the general and clinical categories with only fourteen or sixteen functional responsibilities this cut-off point was satisfactory. With the large number of functional responsibilities in the third category (fifty-two) eleven factors resulted; therefore, the scree test was utilized as described by Cattell (72) to identify factors for study. For this test, the factors were plotted graphically with the corresponding percentages of variance explained. This procedure allowed the researcher to determine the optimal number of factors to extract for the administrative category. It was not clear from the graph whether the cut-off should be after the second or third factor. Cattell (72) suggested it is always safer to extract too many factors than too few, so the analysis for the administrative category was run for two and again for three factors. After the factors were identified for each category, they were used for describing the composition of each of the three categories (73). Items with a loading of .40 or greater on a factor were regarded as contributing significantly to its composition.

RESULTS AND DISCUSSION

Survey Returns

After initial and follow-up mailings, 333 research instruments (52.8 per cent) were received. Thirty-one instruments were not used because of incorrect responses, either the respondents did not meet the criteria of the study regarding residency, or the responses were received after data analysis had begun. Twelve research instruments were returned as non-deliverable. The total number of research instruments used in the statistical analysis was 290.

Characteristics of the Sample

Characteristics of the sample are shown in Table 1. A high percentage (93.1 per cent) of the respondents were registered dietitians and most had gained membership in ADA through the internship route (63.0 per cent). The coordinated undergraduate program was the second most frequent route, whereas the master's degree with experience was the second largest category in the total ADA membership (62).

The majority of the respondents held bachelor's degrees (76.4 per cent); 23.3 per cent had a master's degree, and only one respondent was a Ph.D. Over half of the respondents (58.5 per cent) had become members in 1970 or later, suggesting a large number of young practitioners in hospital dietetics in the regional area surveyed. The remainder were divided among those becoming members in the 1960's, 1950's, and prior to 1950.

Table 1: Characteristics of sample

biographical information	N ¹	%
state of residence		
Colorado	73	25.3
Kansas	58	20.1
Missouri	81	28.0
Nebraska	35	12.1
Oklahoma	42	14.5
professional status		
Registered Dietitian (R.D.)	269	93.1
A.D.A. dietitian	20	6.9
membership in ADA		
coordinated undergraduate program	36	12.5
internship	182	63.0
traineeship	24	8.3
work experience or pre-planned experience	25	8.6
advanced degree	22	7.6
highest degree		
bachelor's	220	76.4
master's	67	23.3
Ph.D.	1	0.3
year becoming member of ADA		
prior to 1950	40	14.1
1950-1959	37	13.0
1960-1969	41	14.4
1970-1978	166	58.5
years employed since becoming ADA member		
1-2 years	40	13.9
3-4 years	73	25.3
5-9 years	59	20.5
10-14 years	37	12.8
15-24 years	50	17.4
25 or more years	29	10.1

¹ N varies because of non-responses.

Table 1: (cont.)

biographical information	N	%
job classification		
director of department	54	19.0
assistant or associate director	19	6.6
head administrative dietitian	9	3.1
head clinical dietitian	43	15.0
administrative staff dietitian	8	2.8
clinical staff dietitian	81	28.4
generalist	29	10.1
consultant	8	2.8
other	35	12.2
years in present position		
1-2 years	110	38.7
3-4 years	57	20.1
5-9 years	67	23.6
10-14 years	29	10.2
15 or more years	21	7.4

Almost 40 per cent of the respondents (39.2 per cent) had been employed less than five years since becoming ADA members. Those having worked five to nine years included 20.5 per cent of the respondents; 12.8 had worked ten to fourteen years, and 27.5 per cent fifteen years or more.

Directors, associate directors, and assistant directors of dietetic services comprised 25.6 per cent of the sample; 3.1 per cent classified themselves as head administrative dietitians and 15.0 per cent were head clinical dietitians. Administrative staff and clinical staff dietitians comprised 2.8 and 28.4 per cent, respectively; and 10.1 per cent were generalists, 2.8 per cent consultants, and 12.2 per cent listed themselves under the category of "other," which included those presently in teaching, research, and community nutrition.

Almost 40 per cent (38.7 per cent) of the respondents had been in their present position only one to two years; 20.1 per cent three to four years; and 23.6 per cent five to nine years. The remainder of the respondents (17.6 per cent) had worked in their present positions ten or more years. This pattern was not surprising in view of the large number of dietitians in the study who were relative newcomers.

Table 2 details characteristics of the facilities in which the dietitians were employed. Half of the respondents (50.3 per cent) worked in a big city (>150,000 population; a fourth (25.2 per cent) worked in medium sized cities (25,000 to 150,000 population); those employed in a small city comprised 20.2 per cent, and only 4.3 per cent worked in a rural community (under 2,500 population).

There was a great deal of variation in size of institution in which responding dietitians were employed. About 40 per cent (41.7 per cent) worked in small to medium size hospital (<300 beds) and about half (49.1

Table 2: Characteristics of hospitals in which respondents were employed

characteristic	N ¹	%
size of community		
big city (over 150,000)	142	50.3
medium city (between 25,000 and 150,000)	71	25.2
small city (between 2,500 and 25,000)	57	20.2
rural community (under 2,500)	12	4.3
size of hospital		
100 beds or under	40	14.0
101 to 300 beds	79	27.7
301 to 500 beds	81	28.4
over 500 beds	59	20.7
not presently employed	3	1.1
employed at other type of facility	23	8.1
type of care provided by institution		
long-term	31	12.6
short-term	187	76.0
both	28	11.4
type of hospital		
general medical or surgical	210	75.8
childrens	6	2.2
psychiatric	16	5.8
mental retardation	1	0.4
university medical center	27	9.6
student health center	1	0.4
other	16	5.8
R.D.'s on staff		
1 dietitian	58	21.3
2-4 dietitians	93	34.2
5-9 dietitians	95	34.9
10-14 dietitians	20	7.4
15-27 dietitians	6	2.2
A.D.A. dietitians on staff, not registered		
1 dietitian	41	14.1
2-4 dietitians	14	4.8
none reported	235	81.1

¹ N varies with non-responses.

per cent) were employed in large hospitals (300 beds or larger). This finding corresponds to the high percentage of dietitians employed in big cities, since most large hospitals are located in urban areas. Only 1.1 per cent of the respondents were not employed at the time of the survey, and 8.1 per cent were currently employed at facilities other than hospitals. Most frequently, these were nursing homes or community agencies. Apparently these dietitians had changed position since the time of ADA's membership survey. Because of their recent experience in hospital dietetics, however, data from these respondents were used in the analysis.

The predominant type of care provided by the employing hospital was short-term (76.0 per cent); 12.6 per cent worked in long-term care facilities. Both short- and long-term care were provided by 11.4 per cent of the employing institutions.

The majority of the respondents worked in a hospital classified as general medical-surgical (75.8 per cent), while 9.6 per cent were employed in university medical centers. Another 8.8 per cent were employed in various types of specialized hospitals, and the remainder were employed in other types of facilities.

Over one-third (34.2 per cent) of the respondents' hospitals employed two to four registered dietitians, and 34.9 per cent of the hospitals employed five to nine registered dietitians. Of the remaining respondents, 21.3 per cent reported there was only one registered dietitian on staff. About 10 per cent (9.6 per cent) reported that they worked on staffs including ten or more registered dietitians. In addition, 18.9 per cent of the respondents reported that there were A.D.A. dietitians on the hospital staff who were not registered.

Experience with Dietetic Technicians and Recommendations on Technician Programs

Data on respondents' experiences working with dietetic technicians and on educational opportunities and job possibilities for dietetic technicians within the facilities employing the responding dietitians are in Table 3. Eighty-seven per cent of the respondents reported there were no qualified dietetic technicians in nutritional care on the dietetic staffs at their institutions. Ten per cent employed one technician in the clinical area and only 3.0 per cent reported that their hospitals employed more than one technician in nutritional care. Even fewer of the respondents (7.1 per cent) reported employment of foodservice technicians on staff. The large majority of respondents had not previously worked with a dietetic technician. Only 26.7 per cent had worked with a technician in contrast with 73.3 per cent who had not.

As expected based on findings reported above, the majority of the responding dietitians (88.0 per cent) indicated there were not ADA technicians employed at their hospitals. A similar pattern was found for non-ADA technicians. In hospitals employing ADA technicians, the number varied from one to ten.

The majority of the dietitians (66.9 per cent) reported that there were persons on their staff with the capability to become dietetic technicians. Over a third (37.7 per cent) indicated one to two on their staff had such potential; whereas 17.2 per cent reported there were three to four, and 10 per cent reported five to nine. Two per cent of the respondents believed that ten or more individuals on their dietetic services staff could be potential candidates for technician programs.

Table 3: Experience with and educational and employment possibilities for dietetic technicians

	N ¹	%
<hr/>		
number of qualified dietetic technicians on staff in Nutrition Care		
none reported	252	87.0
1	29	10.0
2-5	9	3.0
number of qualified dietetic technicians on staff in Foodservice Management		
none reported	269	92.9
1	14	4.8
2-3	6	2.0
8	1	0.3
worked previously with qualified dietetic technician		
yes	60	26.7
no	165	73.3
number on staff classified as ADA dietetic technicians		
none reported	255	88.0
1-2	30	10.3
3-4	4	1.4
10	1	0.3
number of staff classified non-ADA dietetic technicians		
none reported	239	82.4
1-2	25	8.6
3-4	15	5.2
5-9	10	3.4
15	1	0.4

¹ N varies with non-responses.

Table 3: (cont.)

	N	%
number on staff with capability to become a dietetic technician		
none reported	96	33.1
1-2	109	37.7
3-4	50	17.2
5-9	29	10.0
10 or more	6	2.0
ADA approved dietetic technician program in 50 mile radius		
yes	146	55.9
no	115	44.1
persons willing to leave job and area to attend technician program		
yes	10	6.8
no	137	93.2
position available for person after completion of technician program		
yes	122	55.2
no	99	44.8
adequate demand to support a technician program at area community or junior college		
yes	162	67.2
no	70	29.1
no community or junior college in area	9	3.7
preferred background for technicians hired in the future		
Nutrition Care	151	59.9
Foodservice Management	76	30.2
both	25	9.9
need for technicians trained as generalists		
yes	197	74.6
no	67	25.4

About half of the respondents (55.9 per cent) indicated there was an ADA approved dietetic technician program within a fifty-mile radius; 44.1 per cent reported no approved program within that same geographic area. Over 90 per cent of the dietitians (93.2 per cent), however, indicated that the staff members with potential to become technicians would not be willing to leave their jobs or area to attend a dietetic technician program. Appel et al. (37) reported related data from their survey of dietetic technicians. They indicated technician graduates generally find jobs within a fifty-mile radius of the program. Also, nearly 70 per cent indicated they would only consider jobs within commuting distances of their present homes. Over half (55.2 per cent) indicated there would be a dietetic technician position available for these persons after completion of a program.

A majority of the dietitians (67.2 per cent) purported that an adequate demand existed within their area to support a dietetic technician program at an area community or junior college. Less than a third (29.1 per cent) indicated inadequate demand for such a program; 3.7 per cent reported that there was not a community or junior college in their area.

The dietitians were asked to indicate the preferred educational background for technicians they might hire now or in the future, based on the two options (nutrition care or foodservice management) currently available. Almost 60 per cent listed nutritional care (59.9 per cent) and 30.2 per cent listed foodservice management. About ten per cent of the respondents (9.9 per cent) saw potential in their organizations for technicians both in the nutritional care and foodservice management areas.

One of the most interesting questions on the survey asked the dietitians to assess the need for dietetic technicians trained as generalists. In preliminary work for the research, a number of persons interviewed supported development of a general program emphasis for training technicians. Currently, only the nutritional care and foodservice management options are approved areas of emphasis (25). Advocates of a generalist emphasis contended there is a need for technicians with skills in both areas, particularly in rural regions and small institutions in which facilities are served only by consultant dietitians. Nearly three-fourths of the dietitians surveyed (74.6 per cent) supported a generalist emphasis as the appropriate training for technicians who might be employed at their facilities. Only 25.4 per cent responded negatively to the question. In a recent nationwide survey of dietetic techniques, Lamb (74) found that 51 per cent of the technicians believed a program with equal emphasis on foodservice management and nutrition care would provide the best background for their present responsibilities; whereas 38 per cent indicated that nutrition care and 11 per cent that foodservice management would be the preferable program emphasis.

Functional Responsibilities with Potential for Delegation

Administrative Responsibilities

The functional responsibilities initially were sorted into the administrative and clinical statements according to the categorization of Cagguila (17). The administrative functional responsibilities then were ordered according to their potential for delegation using the mean scores for each statement, from those with highest to lowest potential for delegation. Statements were analyzed and classified into four groups

based on mean delegation potential scores, with "5" indicating the technician could perform alone and "1" indicating the dietitian should have complete responsibility:

highest potential for delegation to technician - mean ≥ 3.00

potential for shared responsibility of
dietitian and dietetic technician - mean 2.50 to 2.99

potential for technician assisting dietitian - mean 2.00 to 2.49

lowest potential for delegation to technician - mean ≤ 1.99

Functional responsibilities in the grouping of those with highest potential for delegation to technicians (mean ≥ 3.00) tended to be routine, operational type activities (Table 4). Activities characteristic of this group were:

"monitors production and service,"
"supervises personnel effectively,"
"prepares reports,"
"develops standardized recipes,"
"provides motivational environment," and
"plans food production."

Most of those functions with potential for shared responsibility of dietitian and dietetic technician (mean 2.50 to 2.99) were concerned with direction of employees in regular operational activities. Some of the functional responsibilities in this group were:

"plans master schedule,"
"evaluates job descriptions,"
"uses effective merchandising techniques,"
"coordinates departmental systems,"
"identifies and analyzes problems,"
"considers resources in menu planning," and
"implements new systems."

The tasks that fell in the category of the technician assisting the dietitian (mean 2.00 to 2.49) were of an organizing and controlling nature. Tasks characteristic of this group were:

Table 4: Dietitians' ratings of administrative functional responsibilities on potential for delegation scale¹

item number	functional responsibility ²	potential for delegation ³ mean s.d.
highest potential for delegation to technician (mean ≥ 3.00)		
62c	routine monitoring of receiving, storage, and sanitation procedures	3.85 ± 1.16
62a	routine monitoring of food items produced and served	3.57 ± 1.15
22	develops standardized recipes to provide a con- sistent basis for quality and quantity control	3.52 ± 1.26
18	plans sanitation schedules and procedures that conform to state and local regulations	3.47 ± 1.21
5	plans daily food production	3.46 ± 1.25
21	encourages and motivates personnel to provide optimal foodservice by example and adequate reinforcement	3.30 ± 1.08
62b	consistent supervision of personnel and the identification of factors which influence the productivity and performance of personnel	3.25 ± 1.23
24a	incorporates principles of good menu planning, i.e. adequate nutritional content, color, texture, shape, and variety	3.04 ± 1.20
56	prepares accurate and appropriate reports routinely	3.00 ± 1.33

¹N varies from 243 to 271.

²Statements ordered from most to least potential for delegation.

³Delegation scale:

- 1 = Dietitian should have total responsibility.
- 2 = Dietitian with assistance of dietetic technician (75:25).
- 3 = Joint involvement in the activity (50:50).
- 4 = Dietetic technician with supervision of dietitian (75:25).
- 5 = Dietetic technician could perform alone.

Table 4: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
potential for shared responsibility of dietitian and dietetic technician (mean 2.50 to 2.99)		
12	plans a master schedule for personnel	2.99 ±1.40
24b	incorporates special nutritional and/or taste requirements of individuals or groups within the institution or program	2.98 ±1.13
33	conducts task analyses and work sampling studies to provide a basis for developing new and evaluating existing job descriptions and specifications	2.98 ±1.19
66	uses effective merchandising techniques in the presentation of food to patients and/or clients (example: menu design)	2.94 ±1.10
59	plans orientation and in-service training programs for all personnel involved with foodservice	2.93 ±1.16
61c	coordinates utilization of labor, equipment, and personnel within area	2.88 ±1.27
60	delegates appropriate functions (example: daily food production planning, daily supervision of personnel or daily supervision of tray service) to supervisory personnel such as the foodservice supervisor	2.84 ±1.45
70	develops methods for evaluating client acceptance	2.75 ±1.10
61a	coordinates systems within area to systems in other areas of the department (example: food production systems to foodservice systems)	2.71 ±1.27
58	identifies and analyzes problems related to area	2.70 ±1.03
71	implements policies and procedures in appropriate areas	2.70 ±1.14

Table 4: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
28	maintains accurate and appropriate records for personnel management, fiscal control, and reporting purposes	2.68 ±1.24
24c	plans menus which conform to budget and/or cost requirements, equipment, time, and personnel availability	2.63 ±1.13
49	analyzes menu as to nutritional content, cost, and client acceptance, and modifies menu where result of analysis indicate it is necessary to do so	2.60 ±1.17
29	develops purchasing specifications that insure quality and quantity control	2.58 ±1.27
11	implements new approaches	2.57 ±0.93
35	modifies systems and/or procedures to solve problems with appropriate personnel within area	2.56 ±1.04
50	surveys and obtains appropriate training materials (audio-visual and written)	2.55 ±1.19

potential for technician assisting dietitian (mean 2.00 to 2.49)

13	utilizes management techniques such as management by objectives	2.47 ±1.01
61b	coordinates systems within area to appropriate interdepartmental systems (example: food delivery systems to nursing service systems and procedures)	2.44 ±1.20
44c	performs continuing in-service training of administrative personnel	2.41 ±1.23
32	determines man-hour requirements that relate to menu and budget specifications	2.41 ±1.27
37	maintains effective communication with personnel through regular conferences and meetings	2.41 ±1.09

Table 4: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
64	designs a non-computerized or computerized inventory system	2.34 ±1.21
30	maintains current knowledge of new methods and systems in administrative management	2.34 ±1.18
44b	performs orientating of new administrative personnel	2.34 ±1.27
7	develops job descriptions and specifications for personnel	2.33 ±1.11
4	utilizes the performance appraisal as an evaluation as well as a motivational tool for personnel	2.24 ±1.12
55	develops systems to support goals	2.19 ±1.02
69	determines and justifies specifications for new equipment needed	2.19 ±1.09
1	consistently evaluates effectiveness of systems and procedures which are utilized	2.10 ±0.92
68	utilizes appropriate management practices during union organization periods	2.04 ±1.08
6	develops long and short range departmental goals and objectives	2.00 ±0.85
lowest potential for delegation to technician (mean \leq 1.99)		
42	develops policies and procedures that are consistent with the institution, personnel availability, and characteristics of patient	1.98 ±0.96
8	identifies state, local, and federal labor laws as well as institutional personnel policies which relate to personnel management	1.94 ±1.00
25	redesigns systems and prepares proposals to present, explain, and justify the proposed changes	1.94 ±1.03

Table 4: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
44a	performs interviewing and selection of administrative personnel such as foodservice supervisors and/or aides	1.93 ±1.14
47	plans a budget that conforms to departmental or program financial requirements	1.53 ±0.84

"uses management techniques,"
 "conducts in-service training,"
 "determines man-hour requirements,"
 "maintains effective communication,"
 "orients new personnel,"
 "develops job descriptions,"
 "develops systems,"
 "evaluates effectiveness of systems," and
 "develops department goals."

Planning and developing duties comprised the fourth category of functional responsibilities, with lowest potential for delegation to the technician (mean ≤ 1.99). The functional responsibilities in this group were:

"develops policies and procedures,"
 "identifies labor laws,"
 "redesigns systems,"
 "interviews and selects personnel," and
 "plans budget."

The distribution of responses to each of the items on the delegation scale are included in Table 14 (Appendix C) and are listed in the same order as in the instrument. Also given in the table are the percentage of responses on degree of responsibility by the dietitians for each of the statements.

Clinical Responsibilities

The functional responsibilities in the clinical category also were ordered on their potential for delegation using the mean ratings for each statement, from those with highest to lowest potential for delegation (Table 5). Statements were analyzed and classified into groups, using the same criteria as for administrative data, based on mean delegation potential ratings, with "5" indicating the technician could perform alone and "1" indicating the dietitian should have complete responsibility. Interestingly, none of the clinical functional responsibilities received high enough delegation potential ratings to fall into the highest

Table 5: Dietitians' ratings of clinical functional responsibilities on potential for delegation scale¹

item number	functional responsibility ²	potential for delegation ³ mean s.d.
potential for shared responsibility of dietitians and technicians (mean 2.50 to 2.99)		
39	encourages and motivates personnel to provide optimal care by example and adequate reinforcement	2.83 ±1.15
17	maintains adequate records and a system of regularly reporting the services provided by the clinical nutrition care unit	2.77 ±1.20
53	analyzes previous nutritional intake for nutri- tional adequacy and similarity to proposed pattern indicated by recommended modification	2.64 ±1.29
72	supervises the daily performance of personnel directly involved in the provision of clinical nutrition care	2.52 ±1.31
36b	performs orientating of new clinical personnel	2.51 ±1.22
15	analyzes new approaches and identifies those which relate to his/her area and program	2.50 ±1.04
45	maintains current knowledge of new methods and approaches for the provision of nutrition care	2.50 ±1.12

¹N varies from 260 to 270.

²Statements ordered from most to least potential for delegation.

³Delegation scale:

- 1 = Dietitian should have total responsibility.
- 2 = Dietitian with assistance of dietetic technician (75:25).
- 3 = Joint involvement in the activity (50:50).
- 4 = Dietetic technician with supervision of dietitian (75:25).
- 5 = Dietetic technician could perform alone.

Table 5: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
potential for technician assisting dietitian (mean 2.00 to 2.49)		
16	monitors and records regularly in the nutrition care plan and charts the progress of individuals to whom care is directed	2.48 ±1.23
54	evaluates individual's learning ability, previous knowledge of nutritional modification(s), life style, motivational level, flexibility, acceptance of medical condition, and possible changes in nutrition care that may result from a change in position in life cycle	2.46 ±1.22
36c	performs continuing in-service training of clinical personnel	2.43 ±1.19
63	implements new systems	2.43 ±1.00
41	identifies individuals and/or groups who require nutrition care	2.40 ±1.05
43	provides and directs nutrition care through individual counselling, group counselling, and alternate methods such as audio-visual programming	2.35 ±1.03
57	identifies the need for changes in the nutrition care objectives and methods for delivery of care	2.32 ±1.03
14	refers individuals to appropriate outside agencies or programs for continuance of care, and provides these agencies with information related to previous care	2.32 ±1.20
34	assigns nutrition care related tasks to appropriate personnel (according to the nutrition care plan) and coordinates the performance of these tasks	2.26 ±1.12

Table 5: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
52	compiles relevant information from appropriate sources (chart, nursing care plan, members of the health team such as the physician, nurse, and social worker, community agencies, and the patient or client) necessary to make a nutritional assessment	2.25 ±1.16
10	utilizes community related or community based institutions or programs to meet long-range objectives of nutrition care	2.24 ±1.05
27	communicates orally and via written communication (such as chart notes) pertinent aspects of the nutrition care plan to appropriate clinical personnel, foodservice personnel, and other health team members	2.24 ±1.07
3	surveys available materials and obtains those materials necessary for the implementation of nutrition care	2.18 ±1.07
48	serves as an institutional or community resource for nutrition oriented consumer information	2.17 ±1.11
23	cooperates with other specialists (such as the public health nutritionist) in the design of community related programs to provide preventive or interventive nutrition care	2.17 ±1.13
19	uses information collected from nutritional assessment to develop a plan for the provision of optimal nutrition care	2.15 ±1.05
2	plans for the use of alternate methods and/or systems for nutrition education (group classes, programmed learning material, audio-visual materials, etc.)	2.13 ±0.97
65	evaluates the effectiveness of clinical nutrition care services continuously	2.13 ±1.03

Table 5: (cont.)

item number	functional responsibility	potential for delegation mean s.d.
51	identifies the need for community related or community based programs to provide preventive nutrition programs and long-term interventive nutrition care	2.08 ±1.09
31	prepares a proposal to explain and justify the need for new approaches	2.06 ±1.10
67	distinguishes and relates pertinent aspects of the individual's medical status (medical history, laboratory diagnostic data, drug treatment and present medical symptoms) to nutritional planning	2.01 ±1.05
lowest potential for delegation to technician (mean ≤ 1.99)		
20	participates in health team activities such as case conferences, medical rounds and Grand Rounds	1.98 ±0.96
26	serves as a nutritional consultant to other health team members by providing nutritional information, recommendations for nutrition care and appropriate materials	1.93 ±1.05
46	identifies pertinent legislation and sources of outside funding that influence the provision of nutrition care in the institution and the community	1.92 ±1.11
38	develops staffing patterns, job descriptions and specifications for individuals (dietitians, technicians, and clerks) involved in the provision of clinical nutrition care	1.90 ±1.03
36a	performs interviewing and selection of clinical personnel, i.e., technician and clerk	1.74 ±1.03
40	plans nutritional guidelines (i.e., diet manual, nutritional guidelines, and policies and procedures related to nutrition care) consistent with the objectives of the institution, and current nutrition knowledge	1.69 ±0.88

Table 5: (cont.)

item number	functional responsibility	potential for delegation	
		mean	s.d.
9	communicates changes to appropriate clinical personnel or recommends changes to other health team members such as the physician	1.63	± 0.90

potential for delegation to technician category (mean ≥ 3.00); therefore, only three categories were used in analyzing ratings on clinical tasks:

- potential for shared responsibility of
dietitian and dietetic technician - mean 2.50 to 2.99
- potential for technician assisting dietitian - mean 2.00 to 2.49
- lowest potential for delegation to technician - mean ≤ 1.99

Functional responsibilities in the grouping of those with potential for shared responsibility of dietitian and dietetic technician (mean 2.50 to 2.99) involved providing adequate daily nutritional care to patients. Activities characteristic of this group were:

- "maintains records of nutrition care unit,"
- "analyzes previous nutritional intake,"
- "supervises personnel," and
- "maintains current knowledge."

Most of those functions with potential for technician assisting dietitian (mean 2.00 to 2.49) were concerned with developing plans for nutritional care of clients and using learning materials as needed for patient education. Several items were concerned with utilizing services of community agencies. Based on the dietitians' ratings, twenty-one of the thirty-five clinical functional responsibilities were considered to be activities in which the technicians could assist the professional.

Some of the functional responsibilities in this group were:

- "monitors and charts progress of nutrition care,"
- "identifies those requiring nutrition care,"
- "provides individual and group nutrition counselling,"
- "utilizes outside agencies for continuing care,"
- "assesses nutritional status,"
- "obtains nutrition education materials,"
- "serves as community resource person,"
- "cooperates in design of community programs," and
- "evaluates effectiveness of nutrition care services."

The remaining seven clinical functional responsibilities were in the group with lowest potential for delegation to technicians (mean \leq

1.99). This group was composed of a variety of activities; for example:

"participates in health team activities,"
 "identifies legislation and funds in community legislation,"
 "interviews and selects personnel," and
 "recommends changes in nutrition care."

These activities involving conceptual level abilities were classified by the dietitians as professional level and beyond technicians' scope of practice.

The distribution of responses to each of the items on the delegation scale are included in Table 15 (Appendix C) and are listed in the same order as on the instrument. The percentage of responses on dietitians' degree of responsibility for each of the statements also are tabulated.

Effect of Biographical Factors on Delegation Ratings

The first part of the questionnaire obtained biographical and demographic information about the respondents. Two biographical questions were used for further analysis to determine if either had an effect on the potential for delegation ratings (Scale B) of the functional responsibilities in Part III of the instrument. These two questions were present position (Part I, item 8) and years in the profession (Part I, item 6).

Present Position. When one-way analyses of variance were used to compare ratings of functional responsibilities of groups defined by present position, significant differences ($P \leq .05$) were found in mean ratings of eight administrative and seven clinical functional responsibilities (Table 6). For this analysis, the positions were defined as follows: directors and assistant directors, also referred to as administrators (including associate directors); administrative and generalist dietitians (including head and staff administrative dietitians); and

clinical dietitians, also referred to as clinicians (including head and staff clinicians). Those holding consultant or "other" positions (N = 43) were omitted from this analysis.

Potential for delegation mean ratings of functional responsibilities shown in Table 6 were significantly different at the .05 level or beyond. Three of the administrative functional responsibilities (items 12, 59, and 71) received mean ratings of ≥ 2.9 by the directors and assistants, indicating potential for dietitians and dietetic technicians to share responsibility for these tasks. These functional responsibilities were concerned with implementation of policies and procedures and employee schedules and training. Four of the other administrative items on which ratings differed among position categories were in the classification of those with least potential for delegation and were concerned with highest level managerial responsibilities. The mean ratings of clinical dietitians on all eight administrative functional responsibilities were consistently lower than those of the directors and assistants, suggesting a relative unwillingness on the part of clinicians to delegate tasks outside their area of specialty. Apparently, the administrators understood their area of responsibilities and thus, were better able to see potential for assistance from trained personnel than were the clinical specialists.

Ratings on all seven clinical functional responsibilities differed significantly between the administrative/generalists and clinical dietitians, while ratings on three functional responsibilities differed between administrators and clinicians. Four of the seven clinical functional responsibilities received a mean rating of >1.9 by the clinicians, which placed the tasks in potential for technician assisting the dietitian

Table 6: Significant ($P < .05$) F ratios and mean ratings for analyses of variance of potential for delegation scores by present position¹

mean ratings ² for potential for delegation by present position					
item number	functional responsibility	1	2	3	F ratio ³
		director or assistant (N=73)	administrative and generalist (N=46)	clinical (N=124)	
<u>administrative:</u>					
4	uses performance appraisal	2.4	2.5	2.0	4.16
8	identifies labor laws	2.1	2.2	1.7	4.72
12	plans master schedule	3.5	2.9	2.7	7.32
13	uses management techniques	2.4	2.8	2.3	4.46
44a	interviews and selects personnel	2.1	1.8	1.7	3.13
47	plans budget	1.5	1.8	1.4	3.44

¹Persons in consulting or other positions were excluded from analysis.

²Refer to Table 4 for scale.

³One way ANOVA with LSD procedure for comparisons among groups, lines indicate significant differences ($P < .05$) between groups.

Table 6: (cont.)

item number	functional responsibility	mean ratings for potential for delegation by present position			F ratio
		1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
59	plans orientation and in-service training	3.2	2.8	2.3	3.18
71	implements policies and procedures	2.9	2.8	2.5	3.10
<u>clinical:</u>					
2	plans nutrition education	2.4	2.4	2.0	5.24
3	obtains nutrition education materials	2.4	2.5	2.1	3.26
9	recommends changes in nutrition care	1.5	2.0	1.5	4.20
16	monitors and charts progress of nutrition care	2.7	2.8	2.3	4.49
20	participates in health team activities	2.1	2.3	1.7	4.75

Table 6: (cont.)

item number	functional responsibility	mean ratings for potential for delegation by present position			F ratio
		1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
43	provides individual and group nutrition counselling	2.5	2.6	2.2	4.21
65	evaluates effectiveness of nutrition care services	2.3	2.3	1.9	3.48

category of responsibility. The directors and assistants gave somewhat higher ratings to these tasks; differences were significant on three items (items 2, 16, and 43). The administrators' ratings were not sufficiently high, however, on four of the items to suggest greater potential for delegation to technicians. The administrative/generalist dietitians gave two clinical tasks (16 and 43) the highest mean ratings, indicating they viewed these tasks as having potential for shared responsibility of dietitians and dietetic technicians. Activities viewed as having least potential for delegation by the clinicians were those concerned with recommending changes in nutritional care, participating on health team, and evaluating nutrition care services (items 9, 20, and 65).

Data in Table 6 indicate that the positions held by dietitians may tend to influence the types of functional responsibilities they are willing to delegate. The pattern of particular interest emerging from these findings was that the dietitians who were administrators were more willing to delegate than were the clinicians. Also, differences among position groups were significant on ratings for items with lower potential for delegation.

Years in the Profession. Using information provided regarding the date when respondents became ADA members, ratings of functional responsibilities were analyzed in relation to years in the profession. The Pearson correlation coefficient was used to examine the relationship existing between years of professional experience and potential for delegation ratings. As seen from data in Table 7, correlation coefficients were significant on only eighteen of the eighty-two items. Also, all coefficients tended to be low, indicating a limited relationship between the two variables. In relation to Cagguila's (17) administrative

Table 7: Significant ($P < .05$) correlation coefficients for analysis of relationship between years in the profession and dietitians' ratings of functional responsibilities on potential for delegation¹

item number	functional responsibility	correlation ² coefficient	P value
<u>administrative:</u>			
4	plans performance appraisal	0.133	.016
25	redesigns systems	0.164	.004
35	solves problems	0.130	.017
50	obtains training materials	-0.101	.049
60	delegates	0.223	.000
61a	coordinates departmental systems	0.122	.024
61b	coordinates interdepartmental systems	0.113	.033
61c	coordinates labor and equipment	0.125	.021
62b	supervises personnel effectively	0.132	.016
68	acts appropriately during union organization	0.125	.025
<u>clinical:</u>			
27	communicates to appropriate personnel	-0.104	.046
36c	conducts in-service training	0.111	.036
41	identifies those requiring nutrition care	-0.176	.002
45	maintains current knowledge	-0.191	.001
46	identifies legislation and funds in community nutrition	-0.134	.015
48	serves as community resource person	-0.158	.005
54	evaluates socio-psychological factors in nutrition care	-0.135	.014
72	supervises personnel	0.129	.018

¹Refer to Table 4 for scale.

²Pearson's r.

and clinical categories, significant correlations resulted from analysis of ratings on ten administrative and eight clinical functional responsibilities. It was hypothesized that those dietitians in the profession longer would be less willing to delegate, because the technician is a relative newcomer on the dietetic team and the more experienced dietitians probably were not exposed to the technician's role in their own education. This supposition was supported by the data on clinical responsibility ratings. The negative correlation in the clinical category suggested that younger dietitians were more willing to delegate some functional responsibilities in clinical dietetic practice than more experienced dietitians. In the administrative area, however, the positive correlation coefficients indicated that those with more experience tended to be somewhat more willing to delegate in selected aspects of practice.

Principal Components Analysis of Delegation Ratings of Functional Responsibilities

Basis for Classification of Functional Responsibilities

The final statistical test of the data was principal components analysis of the functional responsibilities in Part III of the research instrument, using ratings on potential for delegation. Because of the large number of items in Part III in relation to the sample size, the eighty-two items were broken down into a few broad categories for this analysis.

As indicated previously, Baird (19) found that Cagguila's (17) classifications of clinical and administrative were not clear-cut descriptions of these two areas of dietetic practice. Ratings on Scale A from this research, therefore, which provided descriptions of dietitians'

responsibilities, were analyzed by present position to establish categories for the factor analysis.

Items were classified as administrative, clinical, or general dietetics based on the results of the analysis of variance of ratings on Scale A. Those rated significantly lower on Scale A by administrators (i.e., directors or assistants), indicating a greater degree of responsibility, were categorized as administrative. Those rated significantly lower by clinical dietitians were classified as clinical functional responsibilities. The general category included those items on which ratings did not differ among the three job description groups.

Functions for which directors and assistant directors had a greater degree of responsibility are listed in Table 8. On all fifty-two items, the mean ratings of these administrators were significantly lower than either one or both of the other two position groups. All but one of Cagguila's (17) administrative items were classified in a similar manner in this analysis.

In addition, six statements from Cagguila's clinical classification had significantly lower ratings for the director group, indicating these dietitians who were directors or assistants had more responsibility for the activities than did clinical dietitians. Three of the six items were concerned with personnel selection and direction. Although focusing on the nutrition care subsystem, the other three items had management related aspects; for example, item 31, "prepares proposals to justify new approaches."

Functional responsibilities classified as clinical activities are listed in Table 9. All sixteen items for which ratings of the clinicians

Table 8: Significant F ratios and mean ratings for analysis of variance of administrative functional responsibilities on degree of responsibility scale by present position

item number	functional responsibility	overall mean rating	mean ratings ¹ for potential for delegation by present position			F ratio ^{2,3}
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
1	evaluates effectiveness of systems	1.66	1.2	1.5	1.9	31.75
6	develops department goals	1.70	1.2	1.6	2.1	38.07
24c	considers resources in menu planning	1.93	1.2	1.6	2.5	98.07
37	maintains effective communication	1.62	1.2	1.5	1.8	18.53
42	develops policies and procedures	1.72	1.2	1.7	2.0	21.92

¹Ordered by mean ratings of directors or assistant directors. Refer to Table 4 for scale.

²All F ratios significant at $P < .001$ or beyond.

³One way ANOVA with LSD procedure for comparisons among groups, lines indicate significant differences ($P < .05$) between groups.

Table 8: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
13	uses management techniques	1.76	1.3	1.6	2.1	31.16
25	redesigns systems	1.87	1.3	1.8	2.3	36.99
28	maintains records	2.05	1.3	1.9	2.6	75.22
30	maintains current knowledge	1.93	1.3	1.5	2.6	100.47
31	prepares proposals	1.80	1.3	1.8	2.1	29.36
39	provides motivational environ- ment for clinical personnel	1.52	1.3	1.4	1.6	6.64
56	prepares reports	1.68	1.3	1.6	1.9	12.44
58	identifies and analyzes problems	1.49	1.3	1.4	1.6	5.73
63	implements new approaches	1.79	1.3	1.6	2.2	35.91

Table 8: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
69	determines and justifies new equipment needs	2.13	1.3	1.9	2.7	105.03
71	implements policies and procedures	1.72	1.3	1.5	2.0	23.51
4	uses performance appraisal	1.90	1.4	1.6	2.2	29.86
7	develops job descriptions	1.94	1.4	1.6	2.4	48.40
8	identifies labor laws	2.07	1.4	1.7	2.6	71.75
11	implements new systems	1.57	1.4	1.6	1.7	6.15
24a	uses menu planning principles	1.86	1.4	1.5	2.3	37.52
29	develops purchasing specifications	2.20	1.4	1.9	2.8	108.03
32	determines man-hour requirements	2.20	1.4	1.8	2.9	118.23

Table 8: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
47	plans budget	2.15	1.4	2.0	2.7	75.74
55	develops systems	1.56	1.4	1.4	1.7	7.78
60	delegates	2.06	1.4	1.6	2.6	81.41
61a	coordinates departmental systems	2.08	1.4	1.6	2.6	87.59
61b	coordinates interdepartmental systems	1.90	1.4	1.7	2.2	27.44
70	evaluates client acceptance	1.82	1.4	1.8	2.0	12.12
21	provides motivational environment for administrative personnel	1.74	1.5	1.4	2.0	17.35
35	solves problems	1.85	1.5	1.6	2.2	28.14
38	develops staffing patterns for clinical personnel	1.91	1.5	1.7	2.2	17.05

Table 8: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
44a	interviews and selects personnel	2.18	1.5	1.8	2.7	78.55
49	analyzes and modifies menus	1.80	1.5	1.5	2.0	18.03
61c	coordinates labor and equipment	2.01	1.5	1.5	2.5	79.94
62a	monitors production and service	2.04	1.5	1.6	2.5	58.94
66	uses effective merchandising techniques	2.01	1.5	1.6	2.4	44.73
24b	incorporates individual requirements into menus	1.75	1.6	1.5	1.9	7.62
36a	interviews and selects personnel	2.06	1.6	2.1	2.3	15.83
44b	orients new personnel	2.24	1.6	1.9	2.7	76.78
44c	conducts in-service training	2.12	1.6	1.6	2.7	81.26

Table 8: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
59	plans orientation and in-service training	2.00	1.6	1.7	2.4	30.61
62b	supervises personnel effectively	2.11	1.6	1.6	2.6	56.00
68	acts appropriately during union organization	2.31	1.6	2.2	2.7	48.90
18	plans sanitation schedules	2.24	1.7	1.8	2.7	67.79
33	evaluates job descriptions	2.22	1.7	1.9	2.8	66.08
46	identifies legislation and funds in community nutrition	1.95	1.7	2.0	2.0	4.14
12	plans master schedule	2.19	1.8	1.8	2.6	23.52
22	develops standardized recipes	2.28	1.8	1.7	2.8	69.27
62c	monitors receiving, storage, and sanitation	2.30	1.8	1.8	2.8	69.58

Table 8: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative and generalist (N=46)	3 clinical (N=124)	
64	assigns inventory system	2.36	1.8	2.1	2.8	42.68
5	plans food production	2.44	2.1	1.9	2.9	47.97

Table 9: Significant F ratios and mean ratings for analysis of variance of clinical functional responsibilities on degree of responsibility scale by present position

item number	functional responsibility	overall mean rating	mean ratings ¹ for potential for delegation by present position			F ratio ^{2,3}
			1 director or assistant (N=73)	2 administrative (N=46)	3 clinical (N=124)	
16	monitors and charts progress of nutrition care	1.54	1.9	1.6	1.2	22.69
26	serves as nutritional consultant to health team	1.47	1.7	1.7	1.2	19.41
27	communicates to appropriate personnel	1.48	1.7	1.5	1.2	13.52
43	provides individual and group nutrition counselling	1.52	1.9	1.5	1.2	18.94
45	maintains current knowledge	1.39	1.5	1.4	1.2	4.89
53	analyzes previous nutritional intake	1.55	1.9	1.6	1.2	23.47

¹Ordered by mean ratings of clinical dietitians. Refer to Table 4 for scale.

²All ratios significant at $P \leq .001$.

³One way ANOVA with LSD procedure for comparisons among groups, lines indicate significant differences ($P < .05$) between groups.

Table 9: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative (N=46)	3 clinical (N=124)	
67	relates medical status to nutritional planning	1.52	1.9	1.6	1.2	18.30
19	develops nutrition care plans	1.59	1.9	1.7	1.3	14.62
41	identifies those requiring nutrition care	1.56	1.9	1.6	1.3	14.52
52	assesses nutritional status	1.58	1.9	1.7	1.3	17.81
54	evaluates socio-psychological factors in nutrition care	1.58	1.9	1.6	1.3	18.66
9	recommends changes in nutrition care	1.53	1.7	1.6	1.4	5.19
17	maintains records of nutrition care unit	1.60	1.8	1.7	1.4	7.71
65	evaluates effectiveness of nutrition care services	1.59	1.7	1.7	1.4	3.91

Table 9: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative (N=46)	3 clinical (N=124)	
20	participates in health team activities	1.79	2.0	1.9	1.5	8.14
14	utilizes outside agencies for continuing care	1.92	2.1	2.1	1.7	6.85

were significantly lower than either one or both of the other position groups were in Cagguila's grouping of clinical competency statements.

Thirteen of Cagguila's clinical items were considered general dietetic functional responsibilities based on the findings from this study; i.e., ratings on Scale A did not differ significantly among the three position groups (Table 10). One additional item in the general dietetics category was the remaining item from Cagguila's administrative classification (item 50). This one item was concerned with selection of appropriate training materials and obviously could be perceived as a responsibility of dietitians without respect to practice area. Items comprising the general dietetics category stressed nutrition education, community involvement, and direction of nutrition care personnel. Apparently, responsibility for these activities tends not to be in the unique domain of administrative, generalist, or clinical hospital dietitians, but rather, may be the responsibility of dietitians in any one of these practice areas.

Results of Analysis

Based on categorization of the functional responsibilities into administrative, clinical, and general dietetics, principal components analysis was used to identify dimensions that characterize the data. The resulting structure for each category was rotated using the varimax procedure. An initial solution was sought that rotated all factors with eigen values of 1.0 or greater.

Administrative Functional Responsibilities. The administrative category of functional responsibilities included fifty-two statements. The first analysis yielded eleven factors with eigen values of 1.0 or

Table 10: F ratios and mean ratings for analysis of variance of functional responsibilities in general dietetics on degree of responsibility scale by present position

item number	functional responsibility	overall mean rating ²	mean ratings ¹ for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative (N=46)	3 clinical (N=124)	
15	analyzes new approaches	1.46	1.3	1.5	1.5	2.91
40	plans nutritional guidelines	1.56	1.6	1.6	1.5	.66
3	plans nutrition education	1.60	1.7	1.7	1.5	1.94
57	identifies need for changes in nutrition care	1.60	1.6	1.7	1.5	1.76
2	plans nutrition education	1.62	1.7	1.7	1.6	.56
50	obtains training materials	1.75	1.7	1.7	1.8	.99
48	serves as community resource person	1.77	1.8	1.8	1.7	.66
34	assigns and coordinates personnel	1.79	1.9	1.8	1.7	.79

¹Functional responsibility ratings not significantly different among present position groups. Refer to Table 4 for scale.

²Ordered by mean ratings of overall group.

Table 10: (cont.)

item number	functional responsibility	overall mean rating	mean ratings for potential for delegation by present position			F ratio
			1 director or assistant (N=73)	2 administrative (N=46)	3 clinical (N=124)	
10	utilizes community programs	1.85	1.8	2.0	1.8	.83
36c	conducts in-service training for clinical personnel	1.85	1.7	1.8	1.9	1.11
72	supervises nutrition care of personnel	1.89	1.8	1.9	1.9	.04
36b	orients new clinical personnel	1.91	1.7	1.9	1.9	2.02
23	cooperates in design of community programs	2.01	2.0	2.1	2.0	.71
51	identifies need for community programs	2.01	1.9	2.1	2.0	.67

larger; therefore, the scree test was utilized as described by Cattell (72) to identify factors for study. These factors were plotted graphically with corresponding percentages of variance on the vertical axis to permit determination of the optimal number of interpretable factors. As shown in Figure 1, the largest share of the variance was accounted for by two or three factors. The analysis was computed again for both two and three factors. The analysis with three factors accounted for a larger percentage of the variance than the two factor solution (46.5 per cent) and was the solution used for further interpretation. In Table 11, item loadings are shown for each of the three factors. The underlined items in the table are those with a loading of .40 or greater. These items were considered to contribute significantly to a factor. Factor I consisted of twenty-six items; Factor II included twenty-two items and Factor III eleven items. Factor I accounted for the largest percentage of variance (36.7 per cent).

Staffing and directing activities were the focus of twelve of the twenty-six functional responsibilities with significant loadings on Factor I. Functional tasks concerned with implementation and monitoring of operational systems was the secondary focus of Factor I. The remaining items comprising the factor were responsibilities emphasizing coordination, problem-solving, development and design of systems and procedures, and documentation. The majority of the items comprising Factor I were those rated as having potential for shared responsibility of dietitians and technicians and those having potential for technicians assisting dietitians (Tables 4 and 5).

Planning goals, objectives, and systems and development and use of effective management tools and techniques were key aspects of items

Figure 1. Graphic presentation of variance accounted for by factors extracted
(scree test) from administrative functional responsibilities

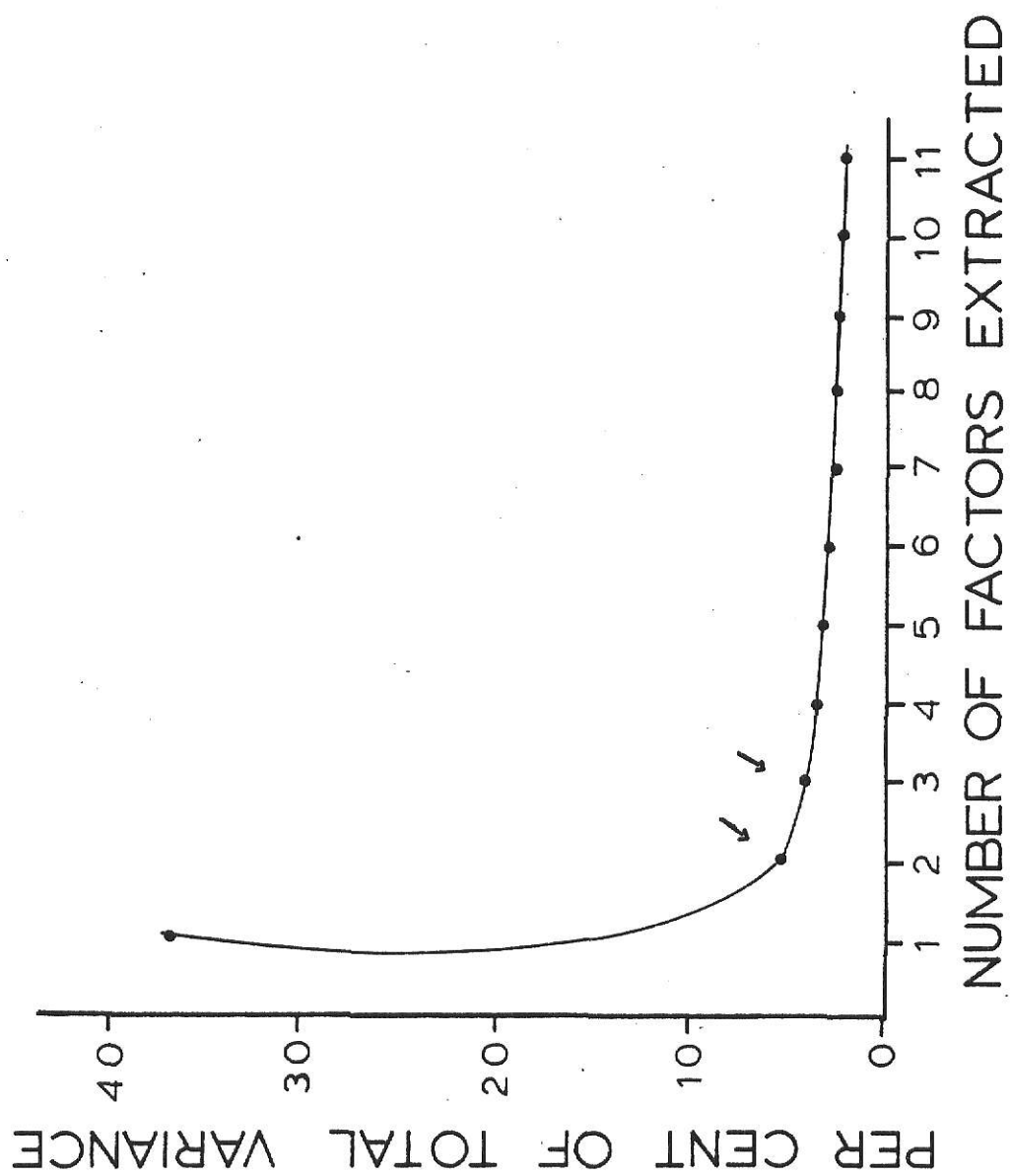


Table 11: Rotated factor loadings from analysis of potential for delegation ratings of administrative functional responsibilities

item number	functional responsibility	factor I (36.7) ¹	factor II (5.2)	factor III (4.6)
1	evaluates effectiveness of systems	.031	<u>.433</u> ²	.264
4	uses performance appraisal	.206	<u>.565</u>	.284
5	plans food production	.228	.164	<u>.420</u>
6	develops department goals	.126	<u>.604</u>	.153
7	develops job descriptions	.159	<u>.483</u>	.333
8	identifies labor laws	.209	<u>.628</u>	.199
11	implements new systems	.322	.313	.309
12	plans master schedule	.212	.249	<u>.445</u>
13	uses management techniques	.165	<u>.493</u>	.331
18	plans sanitation schedules	.281	.089	<u>.551</u>
21	provides motivational environment for administrative staff	<u>.413</u>	.139	<u>.462</u>
22	develops standardized recipes	.192	.154	<u>.673</u>
24a	uses menu planning principles	.031	.224	<u>.693</u>
24b	incorporates individual requirements into menus	.131	.192	<u>.677</u>
24c	considers resources in menu	.055	<u>.417</u>	<u>.644</u>
25	redesigns systems	.128	<u>.694</u>	.303
28	maintains records	<u>.408</u>	.259	.354

¹Figures represent percentage of variance accounted for by factor.

²Factor loadings underlined represent functional responsibilities contributing to that factor at .40 level.

Table 11: (cont.)

item number	functional responsibility	factor I (36.7)	factor II (5.2)	factor III (4.6)
29	develops purchasing specifications	.364	<u>.403</u>	<u>.442</u>
30	maintains current knowledge	.344	<u>.486</u>	.374
31	prepares proposals	.291	<u>.582</u>	.249
32	determines man-hour requirements	<u>.458</u>	<u>.513</u>	.244
33	evaluates job descriptions	<u>.540</u>	.229	.290
35	solves problems	<u>.614</u>	.386	.152
36a	interviews and selects clinical personnel	.384	<u>.545</u>	-.089
37	maintains effective communication	<u>.503</u>	.375	.131
38	develops staffing patterns for clinical personnel	<u>.431</u>	<u>.606</u>	-.108
39	provides motivational environment for clinical staff	<u>.550</u>	.209	.298
42	develops policies and procedures	.384	<u>.572</u>	.229
44a	interviews and selects administrative personnel	<u>.421</u>	<u>.578</u>	.105
44b	orients new personnel	<u>.532</u>	<u>.451</u>	-.012
44c	conducts in-service training	<u>.619</u>	.362	-.046
46	identifies legislation and funds in community nutrition	.335	<u>.407</u>	.168
47	plans budget	.063	<u>.730</u>	.281
49	analyzes and modifies menus	.338	.164	<u>.483</u>
55	develops systems	<u>.403</u>	<u>.428</u>	.187
56	prepares reports	<u>.565</u>	.131	.341
58	identifies and analyzes problems	<u>.503</u>	.230	.395

Table 11: (cont.)

item number	functional responsibility	factor I (36.7)	factor II (5.2)	factor III (4.6)
59	plans orientation and in-service training	<u>.663</u>	.233	.263
60	delegates	<u>.644</u>	.279	.151
61a	coordinates departmental systems	<u>.670</u>	.254	.359
61b	coordinates interdepartmental systems	<u>.640</u>	.388	.167
61c	coordinates labor and equipment	<u>.728</u>	.212	.225
62a	monitors production and service	<u>.643</u>	-.024	.514
62b	supervises personnel effectively	<u>.640</u>	.175	.296
62c	monitors receiving, storage, and sanitation	<u>.626</u>	-.095	<u>.511</u>
63	implements new approaches	<u>.636</u>	.279	.105
64	designs inventory system	<u>.445</u>	.290	.235
66	uses effective merchandizing techniques	<u>.464</u>	.208	.389
68	acts appropriately during union organization	.295	<u>.521</u>	.082
69	determines and justifies new equipment needs	.313	<u>.541</u>	.224
70	evaluates client acceptance	.295	.207	.385
71	implements policies and procedures	<u>.572</u>	.286	.267

comprising Factor II. The remaining items focused on union-management relations and on the employment process (interviewing, selection, training, and employee evaluation). Analysis of the functional responsibilities in relation to the potential for delegation categories indicated that Factor II items were primarily in the two categories with least potential for delegation, or those that the dietitian should perform or only be assisted by the technician.

The emphasis of Factor III was on responsibilities related to the functional subsystems of a foodservice operation. Menu planning, food production, and procurement tasks formed the nucleus of this factor. All of the items loading on Factor III were in the two categories with highest delegation potential, indicating the technician could perform the activities with supervision of the dietitian or the technician and dietitian could share responsibility.

Clinical Functional Responsibilities. The clinical category consisted of sixteen functional responsibilities; two factors were identified with the analysis and were confirmed using the scree test (Figure 2). The two factors accounted for 54.8 per cent of the variance. Item loadings for each of the sixteen functional responsibilities for the two factors are shown in Table 12. Nine functional responsibilities had a loading of .40 or greater on Factor I. Factor II also included nine functional responsibilities with significant factor loadings. Two of the sixteen items loaded on both Factors I and II.

Planning and provision of nutrition care was the primary focus of Factor I; whereas, evaluation of nutrition care services was the secondary focus. Factor II was concerned with planning and monitoring nutrition care and effective interaction on the health care team. The majority of

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Figure 2. Graphic presentation of variance accounted for by factors extracted (scree test) from clinical functional responsibilities

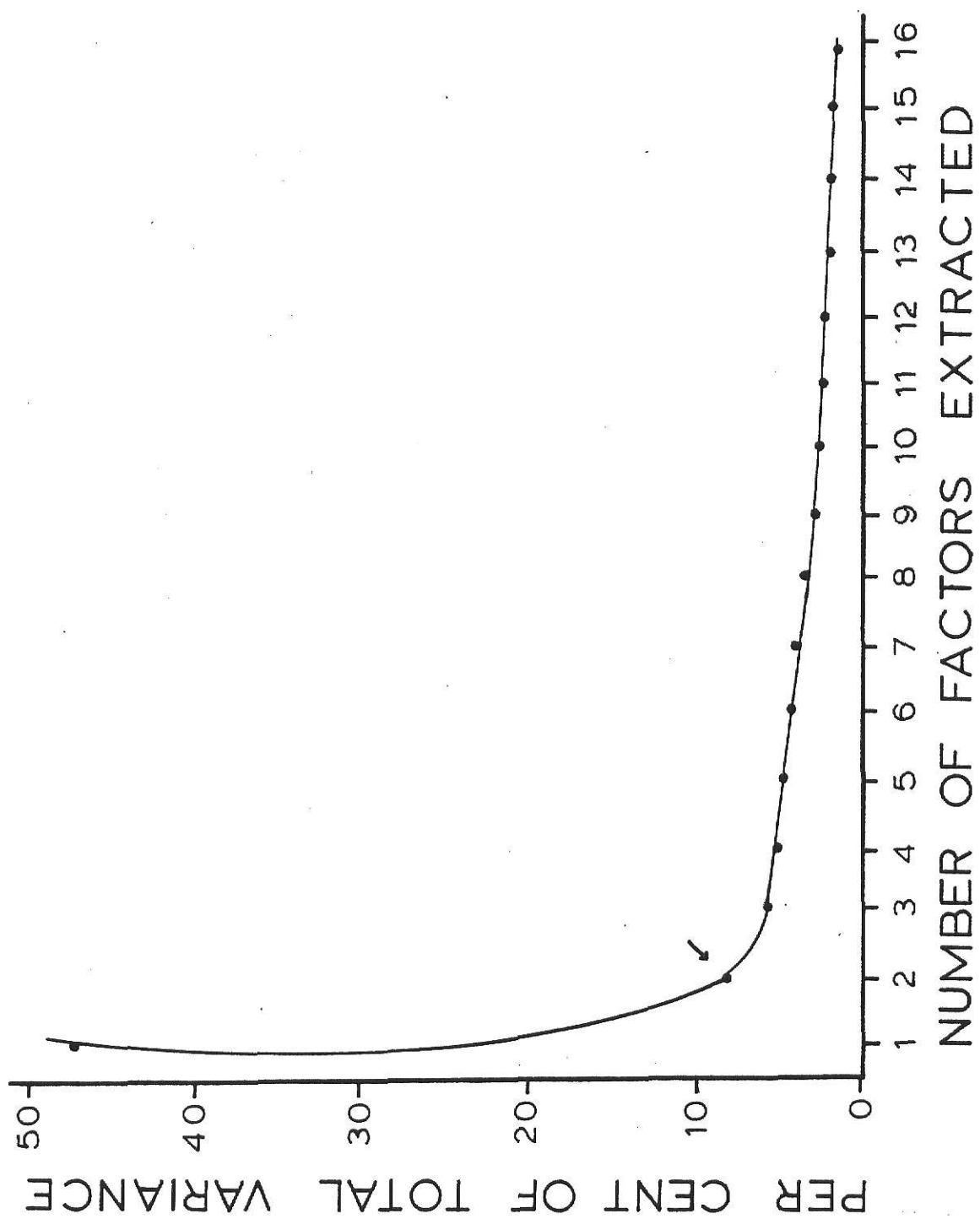


Table 12: Rotated factor loadings from analysis of potential for delegation ratings of clinical functional responsibilities

item number	functional responsibility	factor I (47.1%) ¹	factor II (7.7%)
9	recommends changes in nutrition care	.103	<u>.697</u> ²
14	utilizes outside agencies for continuing care	.124	<u>.671</u>
16	monitors and charts progress of nutrition care	.319	<u>.716</u>
17	maintains records of nutrition care unit	.322	<u>.584</u>
19	develops nutrition care plans	.399	<u>.676</u>
20	participates in health team activities	.396	<u>.665</u>
26	serves as nutritional consultant to health team	<u>.500</u>	<u>.558</u>
27	communicates to appropriate personnel	.399	<u>.645</u>
41	identifies those requiring nutrition care	<u>.616</u>	.257
43	provides individual and group nutrition counseling	<u>.534</u>	<u>.515</u>
45	maintains current knowledge	<u>.609</u>	.231
52	assesses nutritional status	<u>.762</u>	.237
53	analyzes previous nutritional intake	<u>.778</u>	.242
54	evaluates socio-psychological factors in nutrition care	<u>.799</u>	.230
65	evaluates effectiveness of nutrition care services	<u>.598</u>	.237
67	relates medical status to nutritional planning	<u>.667</u>	.360

¹Figure represents percentage of variance accounted for by factor.

²Factor loadings underlined represent functional responsibilities contributing to that factor at .40 level.

the functional responsibilities comprising both factors were primarily in the category of the technician assisting the dietitian. Factor II, however, included more emphasis on areas of responsibility in which the dietitian should retain primary authority and responsibility; i.e., those with least potential for delegation (Table 5).

General Dietetic Functional Responsibilities. The category of general dietetic functional responsibilities included fourteen statements. The analysis yielded two factors for this category, which also was confirmed using the scree test (Figure 3). The two factors accounted for 51.1 per cent of the variance. As shown in Table 13, ten functional responsibilities loaded on the first factor at .40 or greater and seven functional responsibilities loaded on the second factor at the same minimal level or above. In this general dietetic category, three functional responsibilities loaded on both factors.

Community-oriented and nutrition education activities comprised the core of responsibilities in Factor I. Direction of personnel in nutrition care services was underscored in Factor II. Most of the items that loaded significantly on both Factors I and II in the general dietetics category were classified as dietitian assisted by technician functional responsibilities in the previous analysis (Tables 4 and 5).

Figure 3. Graphic presentation of variance accounted for by factors extracted (scree test) from general functional responsibilities

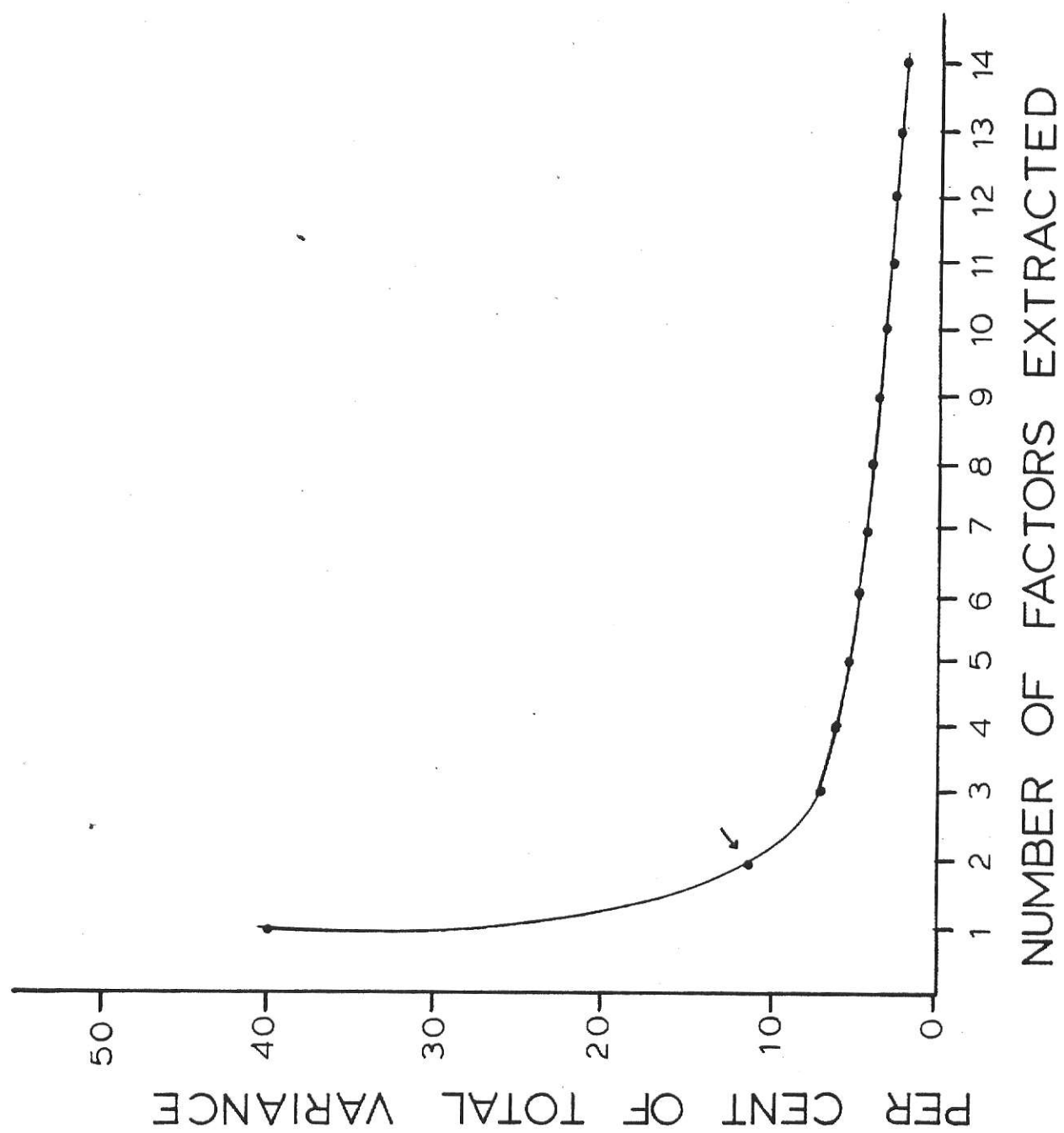


Table 13: Rotated factor loadings from analysis of potential for delegation ratings of general functional responsibilities

item number	functional responsibility	factor I (40.0%) ¹	factor II (11.1%)
2	plans nutrition education	<u>.718</u> ²	.010
3	obtains nutrition education materials	<u>.665</u>	-.031
10	utilizes community programs	<u>.689</u>	.169
15	analyzes new approaches	<u>.473</u>	.227
23	cooperates in design of community programs	<u>.614</u>	<u>.418</u>
34	assigns and coordinates personnel	.302	<u>.620</u>
36b	orients new clinical personnel	-.023	<u>.833</u>
36c	conducts in-service training	.112	<u>.793</u>
40	plans nutritional guidelines	<u>.477</u>	<u>.432</u>
48	serves as community resource person	<u>.684</u>	.260
50	obtains training materials	<u>.697</u>	.246
51	identifies need for community programs	<u>.752</u>	.293
57	identifies need for changes in nutrition care	<u>.558</u>	<u>.402</u>
72	supervises nutrition care personnel	.287	<u>.593</u>

¹Figure represents percentage of variance accounted for by factor.

²Factor loadings underlined represent functional responsibilities contributing to factor at .40 level.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

A profession has an obligation to society to provide competent practitioners. In dietetics, as in other professions utilizing trained supportive personnel, delineation of the competencies required at each level is required. In recent years, attention has been given to identifying competencies for entry-level dietitians. With the emerging role of the dietetic technician on the dietetic team, attention must be focused on identifying entry-level competencies for that level. Although some skills are learned on the job, the beginning dietetic technician is assumed to have a certain amount of knowledge and competency. In preparation of dietetic technicians, a prime concern of educators is defining areas of practice and expected levels of performance.

In 1972, Cagguila was commissioned by The American Dietetic Association (ADA) Executive Board to develop entry-level competencies for the generalist dietitian as a first step in the process of identifying competencies for the profession. As dietitians move beyond entry-level, they become involved with higher level activities, which may lead to delegation of some entry-level activities to supportive personnel. As defined by ADA, the dietetic technician is the first line of supportive personnel for the dietitian; thus, technicians should be prepared adequately to assume responsibility for tasks delegated to them. To ensure validity for the academic and clinical preparation of dietetic technicians, input is needed from practitioners and employers.

The primary purpose of this study was to secure information from a random sample of hospital dietetic practitioners concerning areas of responsibility of these dietitians and to identify activities that hospital dietitians were willing to delegate to dietetic technicians. The competencies developed by Cagguila were used as the basis for this research. A secondary focus was on the educational background desired of technicians and future employment possibilities for graduates of dietetic technician programs. The results can yield pertinent data for educational planning for dietetic technician programs.

Hospital dietetic practitioners who were members of The American Dietetic Association in a five state region in the midwest were sent a research instrument that contained three parts. In Part I, biographical and demographic information was requested about the respondent and the hospital in which he/she worked. Questions in Part II concerned experience of the dietitian in working with dietetic technicians, information about technicians on staff of hospitals, and educational opportunities and job possibilities for dietetic technicians within the facility served by the dietitian. The third part of the instrument consisted of eighty-two competency statements, referred to in this study as functional responsibilities, to which the dietitians were asked to indicate their degree of responsibility for the task and who should perform the task (dietitian, dietitian assisted by technician, or technician alone). The ratings on appropriate responsibility for performance were translated into four classifications on potential for delegation: highest potential for delegation to technician, potential for shared responsibility of dietitian and dietetic technician, potential for technician assisting dietitian, and lowest potential for delegation to technician.

Dietitians indicated a willingness to employ formally qualified dietetic technicians. The dietitians reported a future need to hire technicians trained in foodservice management and nutrition care, although a greater demand for nutrition care technicians was reflected. An interesting response was the perceived need for technicians prepared as generalists; that is, graduates of programs including equal emphasis in foodservice management and nutrition, an option not presently available for approved dietetic technician programs. Nearly two-thirds of the respondents indicated there were persons on their staffs with capability to become a dietetic technician; the number varied from one to over ten.

Initially, the functional responsibilities were divided into the administrative and clinical classifications as suggested by Cagguila. In the administrative categorization some of the activities with highest potential for delegation were "monitors production and service," "supervises personnel effectively," "prepares reports," and "plans food production." Some of the activities with potential for shared responsibility of dietitians and dietetic technicians were "plans master schedule," "coordinates departmental systems," "identifies and analyzes problems," and "considers resources in menu planning."

In the clinical classification, none of the functional responsibilities received high enough delegation potential ratings to fall into the highest potential for delegation to the technician category. The category on potential for shared responsibility of dietitians and dietetic technicians included items such as "maintains records of nutrition care unit," "analyzes previous nutritional intake," "supervises personnel," and "maintains current knowledge." The category of potential for the technician assisting the dietitian was comprised of nearly two-thirds of

the clinical statements (twenty-one items) and were activities involved in developing patient nutritional care plans; e.g., "monitors and charts progress of nutrition care," "identifies those requiring nutrition care," "assesses nutritional status," "obtains nutrition education materials," and "evaluates effectiveness of nutrition care services."

When ratings of functional responsibilities were compared by position groups (director or assistant, administrative/generalist, and clinical dietitian), significant differences were found for eight administrative and seven clinical functional responsibilities. Ratings in each area indicated that dietitians who were administrators were more willing to delegate activities than were the clinical dietitians. Also, differences among position groups were significant on ratings for functional responsibilities with least potential for delegation.

Analysis of years in the profession as related to ratings of delegation potential of functional responsibilities produced low correlation coefficients, indicating a limited relationship. The data suggested, however, that younger dietitians were less willing to delegate some functional responsibilities in administrative practice than those with more experience. The reverse pattern was found in analysis of ratings on clinical responsibilities.

Because previous research had suggested that the two classifications of Cagguila's might not be clear-cut descriptions of administrative and clinical practice, ratings on degree of responsibility for the eighty-two functions were analyzed to study differences among the position groups. Functions were classified as administrative if those in director/assistant positions indicated greatest degree of responsibility; conversely, those categorized as clinical were those rated as being the

responsibility of clinicians primarily. The functional responsibilities on which ratings did not differ among position groups were considered to be general dietetic functions. Results indicated there was a core of general dietetic functional responsibilities that are part of dietetic practice regardless of area of specialization. The administrative category defined by this analysis was comprised of all but one of Cagguila's forty-seven administrative competency statements and six of the competencies from her clinical grouping.

The clinical category from the analysis in this research was comprised of only sixteen of Cagguila's thirty-five clinical competencies. The resultant general dietetics core was composed of nineteen of Cagguila's clinical statements and one administrative competency statement. The three classifications defined then were subjected to principal component analysis. Three factors emerged in the administrative group and two in both the clinical and the general dietetics groupings of functional responsibilities.

Conclusions and Recommendations

The purpose of this research was to identify areas of responsibility dietitians are willing to delegate to dietetic technicians to assist in defining the scope of practice for the technician. The respondents indicated that potential existed within their areas of responsibility for delegation to technicians. Responses of the dietitians suggested an active role for the qualified technician in health care facilities in both foodservice management and nutrition care. The nature of various tasks, however, influences the delegation potential.

Additional research is needed to define further the competencies in each area of practice with delegation potential. Studies could amplify the dietitians' perceptions of technician performance and also the degree to which technicians are performing functional responsibilities dietitians indicated willingness to delegate. Also, the criteria dietitians use in identifying staff with potential for becoming a dietetic technician should be explored.

Within the broad classifications of administrative and clinical, dietitians denoted a number of responsibilities with delegation potential. Based on the competencies defined for entry-level dietetic practice, dietitians were more willing to delegate in the foodservice management area than in clinical dietetics.

Administrative activities that were reported as having the highest potential for delegation to technicians provide the basis for defining competencies for foodservice management programs for technicians. The areas of responsibility emerging as appropriate functions for technicians were routine operational activities:

- "monitors receiving, storage, and sanitation,"
- "monitors production and service,"
- "develops standardized recipes,"
- "plans sanitation schedules,"
- "plans food production,"
- "provides motivational environment,"
- "supervises personnel effectively,"
- "uses menu planning principles," and
- "prepares reports."

Of secondary importance in a technician foodservice management program should be the activities dietitians indicated as having potential for shared responsibility of dietitians and dietetic technicians. These activities were concerned primarily with direction of employees in regular operational activities:

- "plans master schedule,"
- "incorporates individual requirements into menus,"
- "evaluates job descriptions,"
- "uses effective merchandising techniques,"
- "plans orientation and in-service training,"
- "coordinates labor and equipment,"
- "delegates,"
- "evaluates client acceptance,"
- "coordinates departmental systems,"
- "identifies and analyzes problems,"
- "implements policies and procedures,"
- "maintains records,"
- "considers resources in menu planning,"
- "analyzes and modifies menus,"
- "develops purchasing specifications,"
- "implements new systems,"
- "solves problems," and
- "obtains training materials."

The third category of activities were those identified as beyond the responsibility level for technicians, but having potential for technicians assisting the dietitian in the accomplishment of the functions. For technicians to be prepared for this assisting role, some emphasis in programs should be focused on these areas of responsibility, which emphasize the organizing and controlling functions:

- "uses management techniques,"
- "coordinates interdepartmental systems,"
- "conducts in-service training,"
- "determines man-hour requirements,"
- "maintains effective communication,"
- "designs inventory system,"
- "maintains current knowledge,"
- "orients new personnel,"
- "develops job descriptions,"
- "uses performance appraisal,"
- "develops systems,"
- "determines and justifies new equipment needs,"
- "evaluates effectiveness of systems,"
- "acts appropriately during union organization," and
- "develops department goals."

Because the activities included in this third grouping involve higher level managerial skills, experience as a technician with progressive levels of responsibility probably would be needed to gain appropriate competency to assist the dietitian effectively. A program preparing

entry-level technicians should not be expected to produce graduates with skills needed to perform in the areas included in this third category of functional responsibilities.

The remaining activities, or those with lowest potential for delegation, should be considered as professional level and beyond the scope of practice for technicians. Probably the extent of preparation in liberal-general and in professional education is not sufficient in the technician program to permit competency development in the areas of responsibility defined as having limited potential for delegation. Conceptual level skills are emphasized in these functional responsibilities.

Although none of the clinical dietetic competencies evaluated by dietitians were considered to have high potential for delegation to technicians, those earmarked as having potential for shared responsibility of dietitians and dietetic technicians provide a core of emphasis for technician programs in nutrition care. These activities, which probably should be included in technical programs, involve provision of adequate daily nutritional care to patients:

- "provides motivation environment,"
- "maintains records of nutrition care unit,"
- "analyzes previous nutritional intake,"
- "supervises personnel,"
- "orients new personnel,"
- "analyzes new approaches," and
- "maintains current knowledge."

Secondary focus in nutrition care technician programs perhaps should be on those activities with potential for the technician assisting the dietitian. These activities were concerned with developing plans for nutritional care of clients within and without the facility by utilizing community agencies and appropriate learning materials:

"monitors and charts progress of nutrition care,"
 "evaluates socio-psychological factors in nutrition care,"
 "conducts in-service training,"
 "implements new approaches,"
 "identifies those requiring nutrition care,"
 "provides individual and group nutrition counselling,"
 "identifies need for changes in nutrition care,"
 "utilizes outside agencies for continuing care,"
 "assigns and coordinates personnel,"
 "assesses nutritional status,"
 "utilizes community programs,"
 "communicates to appropriate personnel,"
 "obtains nutrition education materials,"
 "serves as community resource person,"
 "cooperates in design of community programs,"
 "develops nutrition care plans,"
 "plans nutrition education,"
 "evaluates effectiveness of nutrition care services,"
 "identifies need for community programs,"
 "prepares proposals," and
 "relates medical status to nutritional planning."

Again, as with the administrative grouping, experience in a technician role would be needed to develop adequate proficiency to assist the dietitian in performing the functions in this third category.

The remaining clinical activities were those with lowest potential for delegation. The roles encompassed in those functions were clearly beyond technician competency and were in the realm of professional responsibilities; e.g., serving as a consultant to health team members and planning nutritional guidelines.

Previous studies have reported unwillingness on the part of technician program applicants to relocate in a geographic area beyond fifty miles for either study or future jobs. Perhaps this explains the recommendation by surveyed dietitians that future dietetic technician programs be located at nearby community and junior colleges. A concern with this suggestion is that after a short span of time the pool of applicants will be reduced to the point where the program will be forced to disband, thus affecting decision-making in starting new programs.

Strong support was shown in this study for employment of dietetic technicians educated by programs with equal emphasis on foodservice management and nutrition care. In light of this finding, it is recommended that The American Dietetic Association review the present approved program options and explore the feasibility of approving dietetic technician programs with a general emphasis.

Dietetic technician educators also have emphasized that in programs preparing dietetic technicians, a primary concern must be to prepare technicians to understand their role on the dietetic team in relation to that of the dietitian. Technicians should be prepared and encouraged to perform competently in the areas in which they are qualified, thus actualizing both their potential and the potential of dietitians. Results of this research should provide baseline data to assist in defining scope of practice for technicians and in differentiating roles of dietitians and dietetic technicians.

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APPENDIXES

APPENDIX A
The Research Instrument

ILLEGIBLE DOCUMENT

**THE FOLLOWING
DOCUMENT(S) IS OF
POOR LEGIBILITY IN
THE ORIGINAL**

**THIS IS THE BEST
COPY AVAILABLE**

CAREER LADDERING IN DIETETIC EDUCATION 120

Cosponsored by:

The University of Kansas
Department of Dietetics
and Nutrition

Kansas State University
Department of Dietetics,
Restaurant and Institutional
Management

Kansas Dietetic
Association

Part I.

1. In which state do you live?
 - ☐ (1) Colorado
 - ☐ (2) Kansas
 - ☐ (3) Missouri
 - ☐ (4) Nebraska
 - ☐ (5) Oklahoma
2. What year did you become a member of The American Dietetic Association?

_____ year
3. Please indicate:
 - ☐ (1) Registered Dietitian
 - ☐ (2) ADA - not registered
4. How did you become an ADA member?
 - ☐ (1) Coordinated Undergraduate Program
 - ☐ (2) Internship
 - ☐ (3) Traineeship
 - ☐ (4) Work Experience or Preplanned Experience
 - ☐ (5) Advanced Degree
5. Please indicate your highest degree.
 - ☐ (1) Bachelor's
 - ☐ (2) Master's
 - ☐ (3) Ph.D.
6. How long have you been employed in the profession since becoming an ADA member (include total number of years employed part- or full-time)?

_____ years
7. How many years have you been employed in your present position?

_____ years
8. Please check the classification that best describes your present position.
 - ☐ (1) Director of Dietary Department
 - ☐ (2) Assistant or Associate Director
 - ☐ (3) Head Administrative dietitian
 - ☐ (4) Head Clinical dietitian
 - ☐ (5) Administrative staff dietitian
 - ☐ (6) Clinical staff dietitian
 - ☐ (7) Generalist (both administrative and clinical dietitian)
 - ☐ (8) Other, please specify: _____
9. Please indicate the size of the hospital in which you are employed.
 - ☐ (1) 100 beds or under
 - ☐ (2) 101 to 300 beds
 - ☐ (3) 301 to 500 beds
 - ☐ (4) over 500 beds
 - ☐ (5) not presently employed
 - ☐ (6) employed at other type of facility, please specify: _____
10. Which of each of the following two sets of descriptors is characteristic of the type of facility in which you are employed?

<ul style="list-style-type: none"> <input type="checkbox"/> (1) long-term <input type="checkbox"/> (2) short-term 	<ul style="list-style-type: none"> <input type="checkbox"/> (1) general medical and surgical <input type="checkbox"/> (2) children's <input type="checkbox"/> (3) psychiatric <input type="checkbox"/> (4) mental retardation <input type="checkbox"/> (5) university medical center <input type="checkbox"/> (6) student health center <input type="checkbox"/> (7) other, please specify: _____
---	--
11. Number of dietitians on the staff (including yourself).
 - ☐ (1) Registered Dietitians
 - ☐ (2) ADA - not registered
12. In what size community are you employed?
 - ☐ (1) Big city (over 150,000)
 - ☐ (2) Medium city (between 25,000 and 150,000)
 - ☐ (3) Small city (between 2,500 and 25,000)
 - ☐ (4) Rural community (under 2,500)

Part II.

This section contains questions related to job and educational possibilities for dietetic technicians and the experience you have had with dietetic technicians.

For reference The American Dietetic Association defines a dietetic technician as: "a technically skilled person who has successfully completed an associate degree program which meets the educational standards established by The American Dietetic Association. The dietetic technician, working under the guidance of an R.D. or an ADA dietitian, has responsibilities in assigned areas in foodservice management; in teaching foods and nutrition principles; and in dietary counseling." J. Am. Dietet. A., 67:246, 1975.

- 1.a. Number of educationally qualified dietetic technicians on the staff (graduate of an ADA approved 2 year associate degree program in Nutrition Care or Foodservice Management)?
 - ☐ (1) Nutrition Care
 - ☐ (2) Foodservice Management
- b. How many of these qualified dietetic technicians indicated interest in completing a 4 year program to become a dietitian?

number
- c. If none are currently employed at your hospital, have you worked with a qualified dietetic technician previously?
 - ☐ (1) yes
 - ☐ (2) no
- d. Please indicate the number of persons on your staff classified as dietetic technicians.
 - ☐ (1) ADA dietetic technician members
 - ☐ (2) Classified as dietetic technicians but not ADA members
- 2.a. How many non-technicians on your staff have the capability to become a dietetic technician?

number
- b. Is there an ADA approved 2 year associate degree program for dietetic technicians available in your area (50 mile radius)?
 - ☐ (1) yes
 - ☐ (2) no
- 2.c. If a program is not available in your area, would the person(s) be willing to leave the area and the job to complete a dietetic technician program?
 - ☐ (1) yes
 - ☐ (2) no
- d. Would there be a dietetic technician position for that person(s) at your hospital after completion of the degree?
 - ☐ (1) yes
 - ☐ (2) no
3. Do you believe there is an adequate demand to support a dietetic technician program at a community or junior college in your area?
 - ☐ (1) yes
 - ☐ (2) no
 - ☐ (3) no community or junior college in area
4. If you now or in the future hire a dietetic technician, please indicate the preferred educational background for this person(s), based on the two options currently available for dietetic technicians.
 - ☐ (1) Nutrition Care
 - ☐ (2) Foodservice Management
5. A number of persons have recommended that a generalist program which includes equal emphasis on foodservice management and nutrition care be developed for dietetic technicians. Can you see a need in your facility for technicians trained as generalists?
 - ☐ (1) yes
 - ☐ (2) no

Part III.

Please read the following list of functional responsibilities and carefully evaluate each function on each of the two scales below.

Scale A. In your present job, what is your responsibility for each function?

- (1) Major responsibility
- (2) Some degree of responsibility
- (3) Not a responsibility of mine

Please circle the appropriate number of your response under Scale A below.

Scale B. Who do you believe should perform this function?

- (1) Dietitian should have total responsibility.
- (2) Dietitian with assistance of dietetic technician (75:25).
- (3) Joint involvement in the activity (50:50).
- (4) Dietetic technician with supervision of dietitian (75:25).
- (5) Dietetic technician could perform alone.

Please circle the appropriate number of your response under Scale B below.

Functional Responsibility	<u>Scale A</u>			<u>Scale B</u>				
	Are <u>you</u> responsible?			Who should perform?				
	Circle: 1	2	3	Circle: 1	2	3	4	5
1. Consistently evaluates effectiveness of systems and procedures which are utilized.	1	2	3	1	2	3	4	5
2. Plans for the use of alternate methods and/or systems for nutrition education (group classes, programmed learning material, audio-visual materials, etc.).	1	2	3	1	2	3	4	5
3. Surveys available materials and obtains those materials necessary for the implementation of nutrition care.	1	2	3	1	2	3	4	5
4. Utilizes the performance appraisal as an evaluation as well as a motivational tool for personnel.	1	2	3	1	2	3	4	5
5. Plans daily food production.	1	2	3	1	2	3	4	5
6. Develops long and short range departmental goals and objectives.	1	2	3	1	2	3	4	5
7. Develops job descriptions and specifications for personnel.	1	2	3	1	2	3	4	5
8. Identifies state, local, and federal labor laws as well as institutional personnel policies which relate to personnel management.	1	2	3	1	2	3	4	5
9. Communicates changes to appropriate clinical personnel or recommends changes to other health team members such as the physician.	1	2	3	1	2	3	4	5
10. Utilizes community related or community based institutions or programs to meet long-range objectives of nutrition care.	1	2	3	1	2	3	4	5
11. Implements new approaches.	1	2	3	1	2	3	4	5
12. Plans a master schedule for personnel.	1	2	3	1	2	3	4	5

Scale A. In your present job, what is your responsibility for each function?

- (1) Major responsibility
- (2) Some degree of responsibility
- (3) Not a responsibility of mine

Please circle the appropriate number of your response under Scale A below.

Scale B. Who do you believe should perform this function?

- (1) Dietitian should have total responsibility.
- (2) Dietitian with assistance of dietetic technician (75:25).
- (3) Joint involvement in the activity (50:50).
- (4) Dietetic technician with supervision of dietitian (75:25).
- (5) Dietetic technician could perform alone.

Please circle the appropriate number of your response under Scale B below.

Functional Responsibility	<u>Scale A</u>			<u>Scale B</u>				
	Are <u>you</u> responsible?			Who should perform?				
	Circle: 1	2	3	Circle: 1	2	3	4	5
13. Utilizes management techniques such as management by objectives.	1	2	3	1	2	3	4	5
14. Refers individuals to appropriate outside agencies or programs for continuance of care, and provides these agencies with information related to previous care.	1	2	3	1	2	3	4	5
15. Analyzes new approaches and identifies those which relate to his/her area and program.	1	2	3	1	2	3	4	5
16. Monitors and records regularly in the nutrition care plan and chart the progress of individuals to whom care is directed.	1	2	3	1	2	3	4	5
17. Maintains adequate records and a system of regularly reporting the services provided by the clinical nutrition care unit.	1	2	3	1	2	3	4	5
18. Plans sanitation schedules and procedures that conform to state and local regulations.	1	2	3	1	2	3	4	5
19. Uses information collected from nutritional assessment to develop a plan for the provision of optimal nutrition care.	1	2	3	1	2	3	4	5
20. Participates in health team activities such as case conferences, medical rounds and Grand Rounds.	1	2	3	1	2	3	4	5
21. Encourages and motivates personnel to provide optimal food-service by example and adequate reinforcement.	1	2	3	1	2	3	4	5
22. Develops standardized recipes to provide a consistent basis for quality and quantity control.	1	2	3	1	2	3	4	5
23. Cooperates with other specialists (such as the public health nutritionist) in the design of community related programs to provide preventive or interventional nutrition care.	1	2	3	1	2	3	4	5

24. Plans menus which:					
24a. incorporate principles of good menu planning, i.e. adequate nutritional content, color, texture, shape, and variety.	1	2	3	1	2 3 4 5
24b. incorporate special nutritional and/or taste requirements of individuals or groups within the institution or program.	1	2	3	1	2 3 4 5
24c. conform to budget and/or cost requirements, equipment, time, and personnel availability.	1	2	3	1	2 3 4 5
25. Redesigns systems and prepares proposals to present, explain, and justify the proposed changes.	1	2	3	1	2 3 4 5
26. Serves as a nutritional consultant to other health team members by providing nutritional information, recommendations for nutrition care and appropriate materials.	1	2	3	1	2 3 4 5
27. Communicates orally and via written communication (such as chart notes) pertinent aspects of the nutrition care plan to appropriate clinical personnel, foodservice personnel, and other health team members.	1	2	3	1	2 3 4 5
28. Maintains accurate and appropriate records for personnel management, fiscal control, and reporting purposes.	1	2	3	1	2 3 4 5
29. Develops purchasing specifications that insure quality and quantity control.	1	2	3	1	2 3 4 5
30. Maintains current knowledge of new methods and systems in administrative management.	1	2	3	1	2 3 4 5
31. Prepares a proposal to explain and justify the need for new approaches.	1	2	3	1	2 3 4 5
32. Determines man-hour requirements that relate to menu and budget specifications.	1	2	3	1	2 3 4 5
33. Conducts task analyses and work sampling studies to provide a basis for developing new and evaluating existing job descriptions and specifications.	1	2	3	1	2 3 4 5
34. Assigns nutrition care related tasks to appropriate personnel (according to the nutrition care plan) and coordinates the performance of these tasks.	1	2	3	1	2 3 4 5
35. Modifies systems and/or procedures to solve problems with appropriate personnel within area.	1	2	3	1	2 3 4 5
36. Performs the following personnel functions related to staffing for nutritional care:					
36a. interviewing and selection of clinical personnel, i.e., technician and clerk.	1	2	3	1	2 3 4 5
36b. orientating of new clinical personnel.	1	2	3	1	2 3 4 5
36c. continuing in-service training of clinical personnel.	1	2	3	1	2 3 4 5
37. Maintains effective communication with personnel through regular conferences and meetings.	1	2	3	1	2 3 4 5

Scale A. In your present job, what is your responsibility for each function?

- (1) Major responsibility
- (2) Some degree of responsibility
- (3) Not a responsibility of mine

Please circle the appropriate number of your response under Scale A below.

Scale B. Who do you believe should perform this function?

- (1) Dietitian should have total responsibility.
- (2) Dietitian with assistance of dietetic technician (75:25).
- (3) Joint involvement in the activity (50:50).
- (4) Dietetic technician with supervision of dietitian (75:25).
- (5) Dietetic technician could perform alone.

Please circle the appropriate number of your response under Scale B below.

Functional Responsibility	<u>Scale A</u>			<u>Scale B</u>				
	Are <u>you</u> responsible?			Who should perform?				
	Circle: 1	2	3	Circle: 1	2	3	4	5
38. Develops staffing patterns, job descriptions and specifications for individuals (dietitians, technicians, and clerks) involved in the provision of clinical nutrition care.	1	2	3	1	2	3	4	5
39. Encourages and motivates personnel to provide optimal care by example and adequate reinforcement.	1	2	3	1	2	3	4	5
40. Plans nutritional guidelines (i.e., diet manual, nutritional guidelines, and policies and procedures related to nutrition care) consistent with the objectives of the institution, and current nutrition knowledge.	1	2	3	1	2	3	4	5
41. Identifies individuals and/or groups who require nutrition care.	1	2	3	1	2	3	4	5
42. Develops policies and procedures that are consistent with the institution, personnel availability, and characteristics of patient.	1	2	3	1	2	3	4	5
43. Provides and directs nutrition care through individual counselling, group counselling, and alternate methods such as audio-visual programming.	1	2	3	1	2	3	4	5
44. Performs the following personnel functions:								
44a. interviewing and selection of administrative personnel such as foodservice supervisors and/or aides.	1	2	3	1	2	3	4	5
44b. orientating of new administrative personnel.	1	2	3	1	2	3	4	5
44c. continuing in-service training of administrative personnel.	1	2	3	1	2	3	4	5
45. Maintains current knowledge of new methods and approaches for the provision of nutrition care.	1	2	3	1	2	3	4	5
46. Identifies pertinent legislation and sources of outside funding that influence the provision of nutrition care in the institution and the community.	1	2	3	1	2	3	4	5

47. Plans a budget that conforms to departmental or program financial requirements.	1 2 3	1 2 3 4 5
48. Serves as an institutional or community resource for nutrition oriented consumer information.	1 2 3	1 2 3 4 5
49. Analyzes menu as to nutritional content, cost, and client acceptance, and modifies menu where result of analysis indicate it is necessary to do so.	1 2 3	1 2 3 4 5
50. Surveys and obtains appropriate training materials (audio-visual and written).	1 2 3	1 2 3 4 5
51. Identifies the need for community related or community based programs to provide preventive nutrition programs and long-term interventive nutrition care.	1 2 3	1 2 3 4 5
52. Compiles relevant information from appropriate sources (chart, nursing care plan, members of the health team such as the physician, nurse, and social worker, community agencies, and the patient or client) necessary to make a nutritional assessment.	1 2 3	1 2 3 4 5
53. Analyzes previous nutritional intake for nutritional adequacy and similarity to proposed pattern indicated by recommended modification.	1 2 3	1 2 3 4 5
54. Evaluates individual's learning ability, previous knowledge of nutritional modification(s), life style, motivational level, flexibility, acceptance of medical condition, and possible changes in nutrition care that may result from a change in position in life cycle.	1 2 3	1 2 3 4 5
55. Develops systems to support goals.	1 2 3	1 2 3 4 5
56. Prepares accurate and appropriate reports routinely.	1 2 3	1 2 3 4 5
57. Identifies the need for changes in the nutrition care objectives and methods for delivery of care.	1 2 3	1 2 3 4 5
58. Identifies and analyzes problems related to area.	1 2 3	1 2 3 4 5
59. Plans orientation and in-service training programs for all personnel involved with foodservice.	1 2 3	1 2 3 4 5
60. Delegates appropriate functions (example: daily food production planning, daily supervision of personnel or daily supervision of tray service) to supervisory personnel such as the foodservice supervisor.	1 2 3	1 2 3 4 5
61. Coordinates:		
61a. systems within area to systems in other areas of the department (example: food production systems to foodservice systems).	1 2 3	1 2 3 4 5
61b. systems within area to appropriate interdepartmental systems (example: food delivery systems to nursing service systems and procedures).	1 2 3	1 2 3 4 5
61c. utilization of labor, equipment, and personnel within area.	1 2 3	1 2 3 4 5

Scale A. In your present job, what is your responsibility for each function?

- (1) Major responsibility
- (2) Some degree of responsibility
- (3) Not a responsibility of mine

(Please circle the appropriate number of your response under Scale A below.)

Scale B. Who do you believe should perform this function?

- (1) Dietitian should have total responsibility.
- (2) Dietitian with assistance of dietetic technician (75:25).
- (3) Joint involvement in the activity (50:50).
- (4) Dietetic technician with supervision of dietitian (75:25).
- (5) Dietetic technician could perform alone.

Please circle the appropriate number of your response under Scale B below.

Functional Responsibility	<u>Scale A</u>			<u>Scale B</u>				
	Are <u>you</u> responsible?			Who should perform?				
	Circle: 1	2	3	Circle: 1	2	3	4	5
62. Maintains quality and quantity controls through:								
62a. routine monitoring of food items produced and served.								
62b. consistent supervision of personnel and the identification of factors which influence the productivity and performance of personnel.								
62c. routine monitoring of receiving, storage, and sanitation procedures.								
63. Implements new systems.								
64. Designs a non-computerized or computerized inventory system.								
65. Evaluates the effectiveness of clinical nutrition care services continuously.								
66. Uses effective merchandising techniques in the presentation of food to patients and/or clients (example: menu design).								
67. Distinguishes and relates pertinent aspects of the individual's medical status (medical history, laboratory diagnostic data, drug treatment and present medical symptoms) to nutritional planning.								
68. Utilizes appropriate management practices during union organization periods.								
69. Determines and justifies specifications for new equipment needed.								
70. Develops methods for evaluating client acceptance.								
71. Implements policies and procedures in appropriate areas.								
72. Supervises the daily performance of personnel directly involved in the provision of clinical nutrition care.								

APPENDIX B

Correspondence Accompanying Research Instrument

(Letterhead--Career Laddering in Dietetic
Education Project)

October 2, 1979

Dear Colleague:

The Department of Dietetics, Restaurant and Institutional Management at Kansas State University in cooperation with the University of Kansas College Health Sciences and Hospital is conducting a survey to distinguish between the activities performed by dietitians and dietetic technicians as part of a project on Career Laddering in Dietetic Education. This project is being cosponsored by the Kansas Dietetic Association. The survey is being sent to all dietitians who are members of The American Dietetic Association and employed as hospital dietitians in Colorado, Kansas, Missouri, Nebraska, and Oklahoma. We need your help in order to gain an accurate picture of the activities of dietitians and dietetic technicians. All information will be confidential; the questionnaire is identified by code number for follow-up purposes only. Your name will not be linked with your responses. Data from the questionnaires will be key punched and statistics summarized for the entire sample.

This survey is being conducted under guidelines established by Kansas State University. By cooperating, you will help provide answers to important questions, however, your participation is strictly voluntary. We would appreciate your responses to all items on the questionnaire; however, if there are individual items you would prefer not to answer, please leave those blank. Your return of the questionnaire will indicate your willingness to participate in the study, and we appreciate your response.

If you have any comments feel free to express them. When you have completed the questionnaire, please place it in the enclosed stamped envelope and drop it in the mail. This survey should take only about 30 minutes of your time--will you please return it to us by the end of the week? If you have any questions concerning this research, please contact by phone or mail any one of the research team. Thank you for your cooperation and time in answering the questionnaire.

Sincerely,

Pamla Hoadley
Graduate Assistant

Allene G. Vaden, Ph.D., R.D.
Associate Professor

jj

c: Susan Meredith, O.T.R.
Judith Hall, R.D.
University of Kansas College of
Health Sciences and Hospital

(Letterhead--Kansas State University)

November 2, 1979

Dear Colleague:

We need your help. Approximately three weeks ago, we sent you a questionnaire concerning role differentiation of dietitians and dietetic technicians as part of a project on Career Laddering in Dietetic Education. If you have completed the questionnaire and have sent it back, thank you! Several dietitians have not completed the survey form because their hospitals do not employ technicians--we want everyone to respond, whether or not you are working, or have worked with a dietetic technician.

In the event you did not receive the mailing, let me briefly restate the purpose of the study. We are conducting a survey of dietitians who are members of The American Dietetic Association employed as hospital dietitians in Colorado, Kansas, Missouri, Nebraska, and Oklahoma. This project is being cosponsored by the Department of Dietetics, Restaurant and Institutional Management at Kansas State University, the University of Kansas College of Health Sciences and Hospital, and the Kansas Dietetic Association. We need your responses to have reliable data on midwestern dietitians' views of dietetic technicians. As indicated earlier, all information will be completely confidential. Your name will not be linked with your responses.

Enclosed is another survey form in the event it is needed. When you have completed the questionnaire, please place it in the enclosed stamped envelope and drop it in the mail. Thank you for your cooperation and time in answering the questionnaire.

Sincerely,

Pamla Hoadley
Graduate Assistant

Allene G. Vaden, Ph.D., R.D.
Associate Professor

jj

c: Susan Meredith, O.T.R.
Judith Hall, R.D.
University of Kansas College of
Health Sciences and Hospital

APPENDIX C
Supplemental Tables
(Tables 14 and 15)

Table 14: Percentage distribution of responses on ratings for administrative functional responsibilities on Scales A and B

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility			
		1	2	3	4	5	1	2	3	
		dietitian only	dietitian with assistance of technician	joint activity	technician with supervision of dietitian	technician alone	major	some degree	none	
		%	%	%	%	%	%	%	%	%
1	evaluates effectiveness of systems	28.8	40.2	23.6	6.6	0.7	46.2	42.1	11.7	
4	uses performance appraisal	34.8	23.5	26.1	14.0	1.5	38.7	32.5	28.8	
5	plans food production	9.0	16.2	17.3	35.0	22.6	17.6	20.5	61.9	
6	develops department goals	31.5	40.4	24.8	3.0	0.4	48.0	34.3	17.7	
7	develops job descriptions	27.8	30.8	25.2	12.8	3.4	38.6	29.0	32.4	
8	identifies labor laws	40.7	35.0	16.0	6.5	1.9	35.3	22.4	42.3	
11	implements new systems	12.2	34.8	38.5	12.6	1.9	50.7	41.9	7.4	
12	plans master schedule	20.1	19.3	19.7	23.1	17.8	31.5	18.5	50.0	
13	uses management techniques	18.2	33.8	34.9	9.3	3.7	47.2	29.7	23.0	

¹N varies from 243 to 271.

Table 14: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility		
		1	2	3	4	5	1	2	3
		dieti- tician only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none
		%	%	%	%	%	%	%	%
18	plans sanitation schedules	7.3	15.7	22.6	31.4	23.0	24.3	28.0	47.8
21	provides motivational environment	4.9	14.4	45.1	17.4	18.2	45.3	35.2	19.5
22	develops standardized recipes	9.4	12.1	21.5	30.9	26.0	24.5	23.4	52.0
24a	uses menu planning principles	10.8	24.6	26.9	25.0	12.7	42.6	29.3	28.1
24b	incorporates individual requirements into menus	9.0	27.7	28.8	25.1	9.4	44.9	35.5	19.6
24c	considers resources in menu planning	18.0	30.7	26.6	20.2	4.5	40.7	26.1	33.2
25	redesigns systems	43.5	30.0	17.7	6.9	1.9	44.9	22.8	32.2
28	maintains records	22.3	23.8	23.8	23.8	6.4	36.3	22.2	41.5
29	develops purchasing specifications	25.5	26.3	20.8	20.1	7.3	33.0	14.1	53.0

Table 14: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility		
		1	2	3	4	5	1	2	3
		dietitian only	dietitian with assistance of technician	joint activity	technician with supervision of dietitian	technician alone	major	some degree	none
		%	%	%	%	%	%	%	
30	maintains current knowledge	31.4	24.5	28.7	9.6	5.7	43.2	20.3	36.5
32	determines man-hour requirements	32.0	24.7	20.5	15.8	6.9	32.6	14.4	53.0
33	evaluates job descriptions	11.9	25.4	25.8	26.5	10.4	27.4	23.0	49.6
35	solves problems	16.0	33.1	33.8	12.9	4.2	38.4	38.1	23.5
37	maintains effective communication	24.8	27.8	33.8	9.0	4.5	52.2	34.1	13.7
42	develops policies and procedures	38.1	33.6	22.0	5.2	1.1	49.4	29.0	21.6
44a	interviews and selects personnel	49.8	22.4	15.4	9.3	3.1	32.8	16.2	50.9
44b	orients new personnel	32.6	29.1	19.2	10.3	8.8	26.9	23.9	49.3
44c	conducts in-service training	29.3	26.3	25.5	11.6	7.3	31.5	25.5	43.1

Table 14: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility			
		1	2	3	4	5	1	2	3	
		dieti- tian only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none	%
		%	%	%	%	%	%	%	%	%
47	plans budget	64.5	22.6	9.1	3.0	0.8	35.5	13.6	50.6	
49	analyzes and modifies menus	19.0	32.7	23.8	17.8	6.3	40.6	37.6	21.4	
50	obtains training materials	21.4	30.6	26.6	13.7	7.4	42.1	40.6	17.0	
55	develops systems	29.7	32.7	28.6	6.0	2.6	53.5	36.4	9.7	
56	prepares reports	16.8	19.8	28.4	16.4	18.3	48.7	33.8	17.1	
58	identifies and analyzes problems	13.9	25.2	43.2	11.7	5.6	57.4	35.8	6.4	
59	plans orientation and in-service training	11.2	27.1	29.0	22.7	9.7	32.0	34.9	32.7	
60	delegates	25.9	19.2	17.3	20.7	16.5	36.6	19.6	43.4	
61a	coordinates departmental systems	22.3	21.6	29.2	16.3	10.2	32.6	27.0	40.1	

Table 14: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility			
		1	2	3	4	5	1	2	3	
		dieti- tian only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none	
		%	%	%	%	%	%	%		
61b	coordinates interdepart- mental systems	25.8	31.5	22.1	13.9	6.4	39.7	30.3	29.6	
61c	coordinates labor and equipment	15.8	24.9	28.7	16.6	13.6	32.7	33.5	33.5	
62a	monitors production and service	4.2	15.8	24.9	29.4	25.3	29.5	36.9	33.2	
62b	supervises personnel effectively	9.8	19.2	24.5	28.7	17.4	28.6	30.9	40.1	
62c	monitors receiving, storage, and sanitation	4.9	9.5	17.4	31.1	36.7	22.1	25.1	52.4	
64	designs inventory system	31.4	27.5	22.7	12.2	5.9	25.2	13.5	60.9	
66	uses effective mer- chandising techniques	10.6	23.4	36.6	20.0	9.1	31.3	35.8	32.5	

Table 14: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility			
		1	2	3	4	5	1	2	3	
		dieti- tarian only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none	%
68	acts appropriately during union organization	42.0	23.0	27.2	4.5	3.3	28.7	11.6	59.7	%
69	determines and justifies new equipment needs	33.1	31.2	23.1	9.6	3.1	34.9	16.7	48.3	%
70	evaluates client acceptance	12.0	31.6	33.5	15.0	7.9	40.6	36.8	22.6	%
71	implements policies and procedures	18.0	25.1	32.2	18.7	6.0	48.0	32.1	19.9	%

Table 15: Percentage distribution of responses on ratings for clinical functional responsibilities on Scales A and B

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility			
		1	2	3	4	5	1	2	3	
		dietitian only	dietitian with assistance of technician	joint activity	technician with supervision of dietitian	technician alone	major	some degree	none	
		%	%	%	%	%	%	%		
2	plans nutrition education	27.8	42.2	20.7	7.4	1.9	51.1	35.4	13.5	
3	obtains nutrition education materials	30.6	37.0	18.9	10.9	2.6	53.3	33.9	12.8	
9	recommends changes in nutrition care	58.9	26.0	9.4	4.9	0.8	62.4	22.5	15.1	
10	utilizes community programs	28.2	34.7	22.9	12.6	1.5	39.9	35.1	25.0	
14	utilizes outside agencies for continuing care	32.3	27.7	20.8	14.6	4.6	35.2	37.4	27.3	
15	analyzes new approaches	17.2	34.1	35.2	8.0	5.4	60.8	32.1	7.2	
16	monitors and charts progress of nutrition care	25.4	32.5	18.3	16.8	7.1	65.8	14.1	20.1	

¹N varies from 260 to 270.

Table 15: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility		
		1	2	3	4	5	1	2	3
		dietitian only	dietitian with assistance of technician	joint activity	technician with supervision of dietitian	technician alone	major	some degree	none
		%	%	%	%	%	%	%	
17	maintains records of nutrition care unit	16.3	29.2	25.0	20.8	8.7	58.8	22.8	18.4
19	develops nutrition care plans	32.3	34.6	19.9	11.7	1.5	63.0	15.5	21.5
20	participates in health team activities	49.2	21.8	17.9	7.6	3.4	50.8	19.3	29.9
23	cooperates in design of community programs	36.0	27.7	24.3	7.9	4.1	34.3	30.2	35.5
26	serves as nutritional consultant to health team	43.8	31.1	15.4	7.5	2.2	67.5	18.3	14.2
27	communicates to appropriate personnel	27.8	37.6	20.3	11.3	3.0	67.0	18.0	15.0
31	prepares proposals	40.1	27.5	21.8	7.6	3.1	46.5	27.5	26.0
34	assigns and coordinates personnel	32.6	27.7	23.5	14.0	2.3	47.0	27.3	25.8

Table 15: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility			
		1	2	3	4	5	1	2	3	
		dieti- tian only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none	
		%	%	%	%	%	%	%	%	%
36a	interviews and selects personnel	56.6	22.3	13.6	5.3	2.3	37.0	20.4	42.6	
36b	orients new personnel	24.4	28.2	27.5	11.5	8.4	38.3	33.0	28.8	
36c	conducts in-service training	27.7	26.6	27.0	12.7	6.0	41.6	32.1	26.3	
38	develops staffing patterns for clinical personnel	45.9	29.1	15.3	8.2	1.5	43.0	23.2	33.8	
39	provides motivational environment	13.4	23.8	41.6	8.9	12.3	57.7	33.1	9.2	
40	plans nutritional guidelines	53.9	27.5	14.9	3.0	0.7	56.6	31.3	12.1	
41	identifies those requiring nutrition care	20.4	37.9	27.1	10.4	4.1	61.1	21.5	17.4	
43	provides individual and group nutrition counselling	20.3	41.4	25.2	9.4	3.8	65.1	18.2	16.7	

Table 15: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility		
		1	2	3	4	5	1	2	3
		dieti- tian only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none
		%	%	%	%	%	%	%	%
45	maintains current knowledge	22.2	26.3	38.5	5.6	7.4	69.8	23.2	7.7
46	identifies legislation and funds in community nutrition	48.5	25.0	17.0	5.3	4.2	36.9	31.0	32.1
48	serves as community resource person	34.2	31.6	20.5	10.3	3.0	41.6	39.0	19.0
51	identifies need for community programs	39.2	27.4	22.1	8.7	2.3	32.5	33.2	33.9
52	assesses nutritional status	31.7	32.8	18.3	12.3	4.5	62.6	15.9	21.1
53	analyzes previous nutritional intake	22.5	30.3	18.0	18.7	10.1	63.4	17.5	18.7
54	evaluates socio- psychological factors in nutrition care	26.2	29.7	23.2	13.3	7.2	62.1	17.5	20.1

Table 15: (cont.)

item number	functional responsibility	Scale B activity should be performed by					Scale A degree of responsibility		
		1	2	3	4	5	1	2	3
		dieti- tian only	dietitian with assis- tance of technician	joint activ- ity	technician with super- vision of dietitian	techni- cian alone	major	some degree	none
		%	%	%	%	%	%	%	%
57	identifies need for changes in nutrition care	25.1	32.6	30.0	9.4	2.6	53.2	32.7	13.8
63	implements new approaches	19.6	33.6	34.0	9.8	2.6	43.5	33.2	22.9
65	evaluates effectiveness of nutrition care services	31.8	36.0	21.3	8.2	2.2	57.8	24.8	17.0
67	relates medical status to nutritional planning	38.1	35.8	15.5	7.5	2.6	66.2	14.9	18.6
72	supervises personnel	31.2	19.4	23.6	17.9	8.0	41.1	28.3	30.6

ROLE DIFFERENTIATION OF DIETITIANS
AND DIETETIC TECHNICIANS

by

PAMLA KAY HOADLEY

B.S., Friends University, 1976

AN ABSTRACT OF A MASTER'S THESIS

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MASTER OF SCIENCE

*Department of Dietetics, Restaurant
and Institutional Management*

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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ABSTRACT

Dietetics is a health service profession and dietetic practitioners are trained to assist people in obtaining optimal nourishment. Reports have indicated a shortage of dietitians exists to meet manpower needs. Several studies have suggested dietitians delegate some of their duties in order to perform more effectively in the role for which they were trained. A series of studies focusing on the defined task functions for dietetic technicians found dietitians were not willing to delegate all of those functions to technicians. The dietitians in those studies, however, indicated greater willingness to delegate to trained technicians. Qualified dietetic technicians are important members of the dietetic team, representing the career ladder step between dietetic assistants and dietitians.

This research utilized the competency statements developed by Cagguila for entry-level dietitians. The purpose of this research was to study responsibilities of hospital dietitians to discover those that could be delegated to dietetic technicians, thus providing data to assist in defining scope of practice of the technician and differentiating between roles of the dietitian and technician. The objectives of this study were to:

- (a) gain understanding of areas of responsibility of hospital dietitians;
- (b) determine activities that hospital dietitians were willing to delegate to dietetic technicians;
- (c) assist in defining scope of practice of dietetic technicians;

- (d) assist in differentiating between roles of dietitians and dietetic technicians; and
- (e) develop recommendations for educational programs on particular areas in which dietetic technicians should be trained.

Hospital dietetic practitioners who were members of The American Dietetic Association in a five state region in the midwest were sent a research instrument (N = 631). The instrument contained three parts; in Part I biographical and demographic information about the respondent and the hospital in which he/she worked was requested. Questions in Part II concerned experience of the dietitian in working with dietetic technicians, information about technicians on staff of hospitals, and educational opportunities and job possibilities for dietetic technicians within the facility served by the dietitian. The third part of the instrument consisted of eighty-two competency statements, referred to in this study as functional responsibilities, to which the dietitians were asked to (a) indicate their degree of responsibility and (b) specify who should perform the task (dietitian, dietitian assisted by technician, or technician alone). Data from 290 instruments were analyzed.

The dietitians indicated willingness to delegate tasks or functional responsibilities in varying degrees. Functional responsibilities were categorized into four groups based on responses concerning who should perform the task. Ratings were on a 1 to 5 scale, with 5 equal to greatest potential for delegation to technicians. Delegation categories were: highest potential for delegation (mean ≥ 3.00), potential for shared responsibility of dietitian and technician (mean 2.50 to 2.99), potential for technician assisting dietitian (mean 2.00 to 2.49) and lowest potential for delegation to technician (mean ≤ 1.99). Dietitians were most

willing to delegate routine operational tasks in the administrative area. They were less willing to delegate responsibilities in clinical dietetic practice.

Cagguila categorized the statements into two classifications, administrative and clinical. Responses to this study indicated that these classifications are not clear-cut descriptions of administrative and clinical dietetic practice, however; but rather, a core of general dietetic functional responsibilities are a part of both practice areas. In this research, clinical dietitians were less willing to delegate clinical or administrative duties than were the administrative dietitians. Also, differences among position groups were significant on ratings for items with lower potential for delegation.

A recommendation from this study is that curricula for dietetic technician programs need to incorporate tasks that dietitians are willing to delegate to technicians. Dietitians indicated there was potential for employing dietetic technicians in their hospitals, both in foodservice management and nutritional care. An important finding was the support found among the dietitians surveyed for dietetic technicians trained as generalists; i.e., graduates of programs which include equal emphasis on foodservice management and nutritional care.

A conclusion of this study is that dietetic technicians are the first line of support personnel to whom dietitians delegate. Dietitians are willing to delegate a variety of duties to technicians, if technicians are trained to perform the tasks. Results of the study should provide baseline data to assist in defining scope of practice of technicians and in differentiating roles of dietitians and dietetic technicians. Research toward further definition and refinement of functional responsibilities for dietetic technicians is recommended.