THE CONTINUING PROFESSIONAL EDUCATION ACTIVITIES OF REGISTERED DIETITIANS AND DIETETIC TECHNICIANS, REGISTERED

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Although the term *dietitian* would not be defined until 1899, the relationship between nutritional advice and good health can be traced back to ancient times. A stone tablet dating back to 2500 B.C. was found with the following dietary recommendation, "If a man has pain inside, food and drink coming back to his mouth....let him refrain from eating onions for three days" (American Dietetic Association, 1985). The field of dietetics gained prominence during World War I when a number of prospective soldiers were found to be in poor health due to poor nutritional status (American Dietetic Association, 1985). Dietitians were needed to determine the nutrition needs of normal individuals, the ill and the wounded, and to advise the government on better methods of food production, distribution, and preparation. The American Dietetic Association (ADA), the major professional organization for the dietetic profession was formally organized in 1917 with the motto *Quam Plurimis Prodesse* (to benefit as many as possible). These benefits extend not only to patients and clients, but also to dietetic practitioners. The mission of the ADA was in part to promote "optimal nutrition and well being for all people by advocating for its members (American Dietetic Association, 2000). With this statement the ADA has taken the responsibility to see that all those affiliated with it maintain their status as qualified professionals. Those dietetic professionals who identify themselves as registered dietitians (RDs) and their support personnel dietetic technicians, registered (DTRs) have accepted the responsibility to be

the food and nutrition experts who "apply food and nutrition to health" (American Dietetic Association, 2000).

Once an RD or DTR has become registered through the Commission on Dietetic Registration (CDR) the ADA's credentialing body, the only way they can maintain their certification is through the process of continuing professional education (CPE). The current system for CPE has been in existence for the past 29 years and consists of the mandatory reporting of attendance of dietetics-related CPE activities that have been approved by the Commission on Dietetic Registration (CDR). The 1984 Study Commission on Dietetics found this system to be lacking, determining that it "provides lifetime recertification of dietetic professionals with little assurance of competence" (American Dietetic Association, 1985). The 1984 Study Commission (American Dietetic Association, 1985) also had the following opinion:

> Recredentialing should help to assure the public of the continued competence of the practitioner. This purpose would be more likely to be achieved if the practitioners were required to participate in programs germane to their current areas of practice or programs designed to prepare them to practice in other areas. In order to insure improved performance it has become necessary to examine the CPE practices of dietetics professionals (p. 53).

Queeney and Smutz (1990) also found:

> By identifying learning needs based on performance deficiencies and developing programs that are directly related to practice, continuing professional educators are more likely to help professionals engage in learning experiences that lead to competency and enhanced performance (P. 163).

Statement of the Problem

While research has been conducted to determine the types and topics of CPE most often attended by RDs; these studies were limited to a certain area of practice such as clinical (Reddout, 1991; Klevans & Parrett, 1990) or limited to a certain state or area of the country (Mutch & Wenberg, 1986; Haughton & Traylor, 1988). Only one study was found that surveyed both RDs and DTRs regarding their CPE activities (Flynn et al., 1991). As RDs and DTRs have different job tasks and responsibilities it is reasonable to assume they will attend different topics and types of CPE activities. The problem to be investigated in this study is the effect of characteristics of dietetic profession on the fulfillment of continuing professional education.

Purpose of the Study and Research Objectives

The purpose of the present study is to determine if the guidance used to select CPE activities, the selection of and likelihood to attend CPE activities, the effect of CPE activities on learning needs, and the ability to find CPE activities differs between RDs and DTRs. The research objectives include the following.

1. To determine if guidance received in selecting professional education activities differs between RDs and DTRs.
2. To determine if types of CPE activities attended differ between RDs and DTRs.
3. To determine if there is a difference between RDs and DTRs in the ability of CPE activities to improve practice.

4. To determine if ability to find CPE activities differs between RDs and DTRs.
5. To determine if likelihood to attend different CPE activities differs by RDs and DTRs.
6. To determine the effects of demographics on the types of CPE activities attended by RDs and DTRs.

Definition of Terms

CPE: continuing professional education. A term used to describe a field of educational practice designed to keep professionals current and avoid professional obsolescence caused by the growth of knowledge and the massive infusion of technology into professional practice (Queeney & Smutz, 1990).

CPEU: continuing professional education unit. A unit of measure utilized to assign credits for continuing professional education activities. In many, but not all cases, one CPEU is equal to one contact hour in a particular activity (Commission on Dietetic Registration, 1998).

CDR: the Commission on Dietetic Registration. The credentialling agency for the American Dietetic Association. Its mission is to protect the nutritional health and welfare of the public through establishing and enforcing certification and recertification standards for the dietetics profession (Commission on Dietetic Registration, 1998).

Dietetics-related to: the integration and application of principles derived from the

sciences of nutrition, biochemistry, physiology, food, management, and behavioral and social sciences to achieve and maintain people's health (Commission on Dietetic Registration, 2000).

RD: registered dietitian. A dietetic professional who has attained a minimum of a Bachelors' degree, completed a practice program approved by the Commission on Accreditation for Dietetics Education (CADE), passed a national examination, and regularly completes CPE requirements to maintain registration (American Dietetic Association, 2000).

DTR: dietetic technician, registered. A dietetic professional who has attained a minimum of two-year associates' degree, completed a dietetic technician program approved by the CADE, passed a national examination, and regularly completes CPE requirements to maintain registration (American Dietetic Association, 2000).

PDP: *Professional Development Portfolio.* A tool to guide and document the professional development of dietetic practitioners. The PDP is a five-step process of reflection, assessment of learning needs, learning plan development, learning plan implementation, and outcomes evaluation. The PDP will be required for recertification beginning June 1, 2001 (Commission on Dietetic Registration, 1998).

Significance of the Study

The PDP will become the mandatory path to recertification in 2001 for all 68,929 dietetics professionals (Rops, 1998). A pilot study is necessary to determine the propriety of the PDP and correct any problems that may be discovered before its

implementation. Proper completion of the Portfolio will be the only way an RD or DTR may maintain registration, therefore the feasibility of the PDP must be established.

A comparison of the CPE activities attended by RDs and DTRs is important because this author has found little research where both groups were studied in this area. The two groups have different credentials and responsibilities, but are often assumed to have similar learning needs and CPE interests. The PDP will require both RDs and DTRs to focus their CPE activities on improvement in their practice area. If it is discovered that RDs and DTRs vary in their learning needs, DTRs might have difficulty finding appropriate CPE activities because there are more RDs than DTRs. There is also limited information on the impact of demographics on type of CPE activities attended. If, for instance, a dietetic practitioner lived in a rural area it might be difficult to attend a seminar that is only offered in a major city some distance away.

Assumptions

1. All participants have the ability to read and understand the terminology in the survey.
2. All participants qualify for the study by currently practicing in the field of dietetics.
3. Participants will return completed surveys by the deadlines announced in the cover letters.
4. Participants will provide accurate and useable data.

Limitations

A major limitation of this study will be that the survey is very lengthy and this might discourage participation. The PDP pilot study is longitudinal and the required time commitment might also cause a low return rate. The PDP is a controversial topic in the field of dietetics. A bias could result if a majority of respondents are those who either support the new plan or oppose it. There is also the fact that all addresses will be supplied by the CDR and may not be up to date.

CHAPTER II

REVIEW OF LITERATURE

A comprehensive literature search provided information in the following areas: the profession of dietetics, the need for CPE in dietetics, the role of CPE in dietetics, the current procedures for acquiring CPE, perceived improvement of practice due to CPE, and the perceived CPE needs of dietetics professionals.

The Profession of Dietetics

In 1969 the ADA began a voluntary program of professional registration for dietitians, and dietetic technicians adopted a similar registration program in 1988 (Flynn et al., 1991). RDs and DTRs carry out different professional responsibilities. It is hard to define the role an RD or DTR plays because it differs according to their professional setting. RDs can be found not only in hospitals and long-term care facilities, but also in foodservice operations, public health departments, and home health agencies. The basic role of an RD is to deliver nutrition counsel and care, whether by providing specific client care, conducting research, or developing products. A DTR is qualified to perform nutrtiion screening and other nutrition services under the direction of a registered dietitian (Quality Management and Research Team, 1998). Some of the job duties they are qualified for are assessing clients' nutritional status, documenting client care, and designing specialized meal plans (Arena & Walters, 1997). The duties of a DTR will vary according to job setting, individual skills, and position of management.

The database of the ADA was updated in 1997 (Bryk & Soto, 1999). Of the 57,243 eligible members, 40,637 returned useable surveys. The survey found that a majority of RDs were female (98%) and white (91%). A majority of DTRs were female (96%) and white (98%). The most recent CDR *Dietetics Practice Audit* was conducted in 1995. It found that most RDs and DTRs are employed in acute care (hospital) or long-term care settings. Forty-four percent of RDs and 45% of DTRs are found in acute care settings, and 25% of RDs and 44% DTRs work in long-term care facilities (Kane et al, 1996).

Role of CPE in Dietetics

The professional registration program for RDs and DTRs was designed "to assure continuing competency of dietitians, guaranteed by evidence of self- improvement through continuing education" (Bogle, 1974). One of the requirements of an RD or DTR to maintain registration is the completion of continuing professional education (CPE) activities. In its first position paper on continuing education the ADA recognized continuing education as a life-long process. The objectives of continuing education are to: "enhance the knowledge of the individual member thereby improving her competency, and enable the individual member to contribute to the advancement of the profession of dietetics (American Dietetic Association, 1974). The requirement of continuing education can also be found in Standards five and six of the American Dietetic Association's *Standards of Professional Practice for Dietetics Professionals*. These Standards of Professional Practice are "defined statements of a dietetics professional's

responsibility for providing services in all areas of practice" (Standards of Practice Task Force, 1998).

Need for CPE in Dietetics

Due to the constant changes in health care and advances in medical technology, current skills must be maintained and new skills added in order to provide quality nutritional care. There is also the need to add skills and competencies when seeking career advancement. Duyff (1999) states that if nutrition professionals do not participate in lifelong learning they might find "our opportunities limited and our skills outdated, perhaps no longer in demand."

Snyder et al (1985) surveyed 138 dietitians who indicated they had some type of administrative responsibility in their current job. Fifty surveys were completed and it was found that dietitians often find themselves in administrative positions while lacking skills in almost every aspect of general administration. Respondents were asked to rate themselves on 59 general administrative competencies in areas like organization and administration, communications, and leadership and supervision using a five-point Likert-type scale with 1 meaning "no competence" and 5 denoting "utmost competence". The dietitians thought themselves to be competent in only 3 of the 59 areas: evaluating employees technical performance, communicating with key personnel about employee and equipment load, and review new methods for techniques and tasks.

CPE Procedures

All RDs must complete at least 75 continuing professional education units (CPEUs) over a five-year period and all DTRs must complete at least 50 CPEUs in a five-year period. These CPEUs may be in the form of experiential opportunities, formal academic classroom study lectures, seminars, workshops, exhibits, or independent study. Currently, only those CPEUs with prior or subsequent approval from CDR can be counted towards the number of required hours. With this being the only stipulation, there is currently no way to insure the CPEUs earned are in any way addressing skills needed or improving practice. Queeney and Smutz (1990) are of the opinion that professionals are unknowledgeable consumers of CPE, "They are unaware of the range of their learning needs, and thus may have trouble determining which programs will be most useful to them in their daily practice" (p.184).

Perceived Improvement of Practice Due to CPE

It is difficult to establish the benefits of CPE activities because the standards dietetics professionals use to assess their skill levels are often unknown. Reddout (1991) surveyed 484 clinical RDs from the northeast United States and had a 40% response rate. The study participants were asked to rate areas of practice, termed "outcomes", on a scale of one to four with one being "not at all affected by continuing education" and four being "greatly affected by continuing education". The participants rated both CDR-approved and non-CDR-approved activities (those activities not applicable for registration status). The study found that all non-CDR-approved continuing education programs were rated

higher than CDR-approved programs for improvement in practice. This study also examined the standards used by the RDs to assess the impact of CPE on their practice. Fifty-seven percent said they used their own personal standards, 27% used their job descriptions, and only 9% used ADA standards to evaluate their practice.

Continuing Education Needs of Dietetics Professionals

Queeney and Smutz (1990) have found that it is difficult to appropriately assess the learning needs of professionals. Many professionals will identify their weak areas as those they consider necessary for advancement, those they seldom use, or newly introduced concepts. Few will rate themselves as lacking in their day to day skills. It is very hard to assess the continuing education needs of dietetics professionals, as there is no universal scale. Very little research was found on the topic. When studies are conducted to gauge learning needs they are often limited to one area of practice or part of the country.

Mutch and Wenberg (1986) surveyed the membership of the Michigan Dietetic Association to assess their learning needs as indicated by their preference of topic and type of CPE. All 1,511 members of the Michigan Dietetic Association were mailed surveys. There was a 53% response rate. The survey contained a list of 40 topics of continuing education. Respondents were given two ways to indicate which topics they preferred. They could assign a need score of "high", "low", or "none" to each topic. Or they could choose the three topics they found "most relevant to professional growth right now". Obesity programs received the highest need score. When the topics were ranked, clinical nutrition issues, especially for specific disease states, received a majority of the

top rankings. Topics were also rated on preferred level of instruction, either basic or advanced. Clinical nutrition topics were highly requested in an advance form and basic information was requested in the areas of marketing, computer use, change agentry processes, and methods of legislation. As for types of instruction, the workshop format was most preferred, followed by lectures. Burkholder and Eisele (1984) also conducted research on the CPE needs of dietitians but it was based on activity content such as progress in heart disease research, not mode of CPE delivery. Haughton and Traylor (1988) and Hess and Haughton (1996) conducted research on the continuing education needs of public health nutritionists. Both of these studies were not limited to RDs and DTRs and the data was not presented based on credential type. Haughton and Traylor (1988) and Hess and Haughton (1996) studied knowledge and skills such as "knows how to function as an interdisciplinary team member" only.

Only one study was found that separately examined the CPE needs of RDs and DTRs. Flynn et al. (1991) surveyed 4,000 RDs and 1,000 DTRs randomly selected from CDR files. The survey included questions on the factors that influenced the choice of current and preferred CPE activities, topics most likely to be selected, and demographic characteristics.

The response rate from the RDs was 61% and 43% for the DTRs. Each method and topic of CPE was treated as a separate question. RDs most often attended state dietetic association meetings or workshops (51%), workshops or meetings sponsored by other organizations (48%), and district dietetic association workshops or meetings (46%). DTRs were found to attend workshops or meetings sponsored by other organizations

(32%), district dietetic association workshops or meetings (28%), and workshops or meetings sponsored by local hospitals (24%) (Flynn et al., 1991).

As for future CPE activities, both RDs and DTRs indicated they preferred attending lectures (64%, 54%, respectively). Also highly rated by both groups were workshops with attendee participation (60%, 44%, respectively). Least preferred methods of CPE by both RDs and DTRs were computer-assisted instruction (47%, 50%, respectively) and study groups/journal clubs (44%, 47%, respectively). There were also similarities between the two groups in the area of CPE topic preference. CPE topics were examined according to the level of information requested, either basic or advanced. A majority of both RDs (56%) and DTRs (74%) requested grantsmanship information at a basic level (Flynn et al., 1991).

Differences between the two groups were found when the desire for CPE at an advanced level was examined. Most RDs preferred advanced information on obesity and weight control (72%), while a majority of DTRs wanted advanced information on foodservice equipment (38%) (Flynn et al., 1991). This is an indication that due to their different job responsibilities, the topic and level of instruction of CPE activities will vary between RDs and DTRs.

The researchers noted that the survey results were not examined by geographic area or other attributes of respondents. The study also found there is evidence to suggest certain practitioners rely on self-study mechanisms because they are unable to attend workshops or other events (Flynn et al., 1991).

CHAPTER III

METHODOLOGY

The purpose of the current study was to compare the continuing professional education activities of registered dietitians (RDs) to those of dietetic technicians, registered (DTRs). This chapter includes a description of the population studied, the instrumentation used, and the research design and procedures.

Subjects

The subjects in the present study were RDs and DTRs, registered with the Commission on Dietetic Registration (CDR), who began a new 5-year certification period on June 1, 1998. According to the CDR there were 530 DTRs and 9,500 RDs who met these qualifications and were included in the sampling pool. All 530 DTRs were invited to participate in this study. The 3,000 RDs were selected by a stratified random sample by state based on the number of RDs in each state. The CDR provided a list of names and addresses of these 3000 RDs and 530 DTRs. Approval from the Institutional Review Board, Oklahoma State University was obtained prior to circulation of the surveys (Appendices A,B).

Instrumentation

The research instrument used in the present study was the baseline survey of *Your Opinion of Professional Development* developed and pretested by Dr. Kathryn S. Keim,

RD, LD, and Dr. Christine Johnson at Oklahoma State University with input from the National Pilot Test Team of the Competency Assurance Panel of the CDR. This baseline survey was the first part of the CDR's *Professional Development Portfolio* pilot study. The survey questions were written to meet specific objectives as put forward in the request for proposal from the CDR (Appendix C). Several experts in the field of dietetics reviewed the survey. A pretest of the survey was conducted by mailing the survey to 50 RDs and 30 DTRs. Eighteen RDs and 10 DTRs returned completed surveys for a response rate of 35%. The RDs and DTRs had no problems answering the survey questions on the pre-pilot. Changes were made in the survey based on input from the experts and the pre-pilot data.

Questions from the survey section entitled "Continuing Professional Education Activities" were used in the present study. The questions pertained to the guidance received in choosing continuing professional education (CPE) activities, the CPE activities attended in the past twelve months, the effect of attending CPE activities on learning needs (improving practice), the ability of dietetic professionals to find appropriate CPE activities, the CPE activities that are likely to be attended in the future, and effect of demographics on types of CPE activities attended (Appendix D). Also included were demographic questions regarding age, area of credentials, year of registration, area of residency, employment status, job functions, and focus of CPE (Appendix D).

The question measuring effect of attending CPE activities on learning needs (improving practice) was a Likert-type question that asked respondents to indicate how strongly they agreed or disagreed to seven statements. Each response was associated

with a point value from zero to four with a higher number indicating stronger agreement to the statement; "don't know" or "zero" responses were not included in the analysis.

To determine the reliability of the question measuring effect of attending CPE activities on learning needs (improving practice) Principal Components factor analysis with varimax rotation and internal reliability analysis were conducted. Using Principal Components factor analysis all seven items loaded on one factor. The Cronbach's alpha was .91. These results indicate high reliability for this scale (Carmines and Zeller, 1979).

A composite scale score was generated by totaling the answers of each respondent to the seven statements in the improving practice question. The minimum possible score was seven while the maximum was 28. Higher scores indicated a greater perception that CPE improved practice.

The question measuring the ability of RDs and DTRs to find appropriate CPE activities was also a Likert-type question. Respondents indicated how strongly they agreed or disagreed to four statements. Each response was associated with a point value from zero to four with a higher number indicating stronger agreement to the statement, "don't know" or "zero" responses were not included in the analysis.

To determine reliability of the question measuring the ability of RDs and DTRs to find appropriate CPE activities Principal Components factor analysis with varimax rotation and internal reliability analysis were conducted. Using Principal Components factor analysis all four items loaded on one factor. The Cronbach's alpha was .85. These results indicate high reliability for this scale (Carmines and Zeller, 1979).

A composite scale score was generated by totaling the answers of each respondent to the four statements in the find appropriate CPE activities question. The minimum

possible score was four while the maximum was 16. Higher scores indicated a greater ability to find appropriate CPE activities.

The scale scores to determine the likelihood to attend future CPE activities were generated by using Likert-type responses to each CPE activity. The scale responses ranged from one to five with a higher number indicating a stronger desire for the activity in question.

Due to the high number of CPE activities in this question, Principal Components factor analysis with varimax rotation was conducted as a data reduction step. CPE activities with a factor loading of .4 or greater were included in each factor and five factors were generated (Table 1). The factors were named based on the types of CPE activities in each factor. The CPE activity of self-study loaded on two separate factors. The decision was made to place the self-study activity with factor five as the factor loading was greater (.521) for this factor than for factor two (.472). It appears that respondents perceive self-study differently.

Cronbach's alpha was conducted to determine the reliability of each factor generated (Table 2). Factors with a reliability of .7 or higher indicated a strong internal reliability for the factors (Carmines and Zeller, 1979). While the Professional meeting/organization CPE activities factor had a reliability close to .7, it only loaded three items and thus was not included in the analysis. The decision was made to only use Factor 1 Experiential CPE activities and Factor 2 Technological CPE activities in further analysis.

Composite scale scores for the two factors were generated by summing the answers of respondents to the items in each factor. The minimum score for Factor 1

Experiential CPE activities was six and the maximum score was 30. The minimum score for Factor 2 Technological CPE activities was four and the maximum score was 20. The higher the score the more likely the dietetics professional was to attend CPE activities in the factor.

Table 1. Factors generated from data reduction of list of potential CPE[1] activities.

Factors/CPE activities	Factor loadings[2]
Factor 1: Experiential CPE activities	
Experiential skill development	.572
Certificate programs	.824
Certification	.812
Academic coursework	.580
Residency and fellowship programs	.626
Sponsored independent learning	.426
Factor 2: Technological CPE activities	
Videos, audio, and computer based materials	.709
Internet, Web based course	.738
Courses by satellite	.737
Distance learning	.677
Factor 3: Academic CPE activities	
Lectures	.774
Workshops	.678
Seminars	.780
Case seminars	.414
Factor 4: Professional meeting/organization CPE activities	
Exhibits	.770
Professional leadership	.593
Posters	.776
Factor 5: Individualized CPE activities	
Journal clubs and study groups	.619
Self-study programs	.521
Professional reading	.556

[1] CPE = Continuing Professional Education

[2] Each factor includes CPE activities that loaded >.40 and is named for the dominant concept.

Table 2. Cronbach's alpha reliability of scale scores from list of CPE[1] activities.

Scale Score	Alpha
Experiential CPE activities	76
Technological CPE activities	73
Academic CPE activities	63
Professional meeting/organization CPE activities	66
Individualized CPE activities	.35

[1] CPE = Continuing Professional Education

Research Design

The research design used in the present study was the descriptive status survey. Descriptive research involves the collection of data to test hypotheses or answer questions about the current status of the study's subjects and is concerned with the assessment of the subjects' conditions, demographic information, and procedures (Gay, 1996). This study focused on the current status of the population with respect to related variables and did not attempt to manipulate variables.

Procedure

The surveys were distributed by mail using a modified Dillman method (Salant & Dillman, 1994). Every member of the sample group was sent a copy of the survey instrument, a postage-paid self-addressed return envelope, a cover letter requesting them to complete and return the survey, and a consent form (Appendix E). A reminder postcard was sent to every member of the sample one week after the first mailing. A second copy of the survey instrument along with another return envelope and cover letter were sent three weeks after the first mailing to all those who fail to respond. At no time did names of the subjects appear on the surveys. A subject number was assigned to each member of the sample and appeared on the survey instrument and mailing label. The subject numbers were only used to track the surveys and the code list was kept in a locked drawer.

Analysis of Data

Data was coded and entered into a database using the Statistical Package for the Social Sciences (SPSS version 8.0, Chicago, IL) to generate frequencies, means, scale scores, and reliability coefficients. Descriptive statistics, frequencies and means were generated to describe the population. A χ^2 was generated to compare RDs and DTRs in the guidance they receive when selecting CPE activities, the effect of employment status and job function on types of CPE activities attended, and the effect of job function on ability to find CPE activities as well as focus for CPE. Independent *t*-tests were used to analyze the types of CPE activities chosen between RDs and DTRs. To determine if the ability of CPE activities to improve practice differed between RDs and DTRs, scale scores were generated and independent *t*-tests were conducted. Mean scores, frequencies, and scale scores were generated, and *t*-tests were run to determine if the availability of CPE activities differed between RDs and DTRs. Mean scores and frequencies were generated, and *t*-tests were conducted to determine if there was a difference in the types of CPE activities likely to be attended by RDs and DTRs. Separate analysis on RDs and DTRs using ANOVA to determine how area of residence, employment status, and job function each related to the ability of RDs and DTRs to find CPE activities.

Statistical Analysis

The following hypotheses were developed for the present study.

1. There is no difference between RDs and DTRs in the guidance received when deciding on which CPE activities to attend.

2. There is no difference between RDs and DTRs in the types of CPE activities attended.
3. There is no difference between RDs and DTRs in the ability of CPE activities to improve practice.
4. There is no difference between RDs and DTRs in the availability of CPE activities.
5. There is no difference in the types of CPE activities RDs and DTRs are likely to attend.
6. Employment status has no effect on the types of CPE activities attended by RDs and DTRs.
7. Job function has no effect on the types of CPE activities attended by RDs and DTRs.
8. Area of focus of CPE has no effect on the ability of RDs and DTRs to find CPE activities.
9. Area of residence has no effect on the ability of RDs and DTRs to find adequate CPE.
10. Employment status does not effect the ability of RDs and DTRs to find adequate CPE.
11. Job function does not effect the ability of RDs and DTRs to find adequate CPE.
12. Area of focus for CPE does not differ by job function for RDs and DTRs.

CHAPTER IV

RESULTS

Demographic Data of Dietetics Professionals

Table 3 summarizes the demographic data. Of the 3,530 surveys mailed, 1,428 subjects returned useable surveys, for a 40% response rate. One thousand two hundred and thirty-nine registered dietitians (RDs) out of the 3,000 selected for the study completed their surveys (41% response rate), while 171 of the 530 dietetic technicians registered (DTRs) returned their surveys (32% response rate). Eighteen respondents chose not to indicate their credentials.

Most respondents from both credential groups were between the ages of 31 and 50 (Table 3). Almost all of the participants were Caucasian females, and more than half lived in suburban areas of the United States. More than half the respondents, both RDs and DTRs, were employed full-time. When respondents were asked their primary work setting, they were able to mark more than one response, resulting in no clear majority. Most RDs worked in acute-care facilities, long-term care facilities, or in an ambulatory/outpatient clinic or office. Many of the DTRs worked in acute-care or long-term care facilities. When asked about job function, again the participants were able to mark more than one answer, but a majority of both RDs and DTRs indicated they performed clinical services.

Half of the RDs held a master's degree, while a majority of DTRs had an associate degree. Study participants were asked in what area of continuing professional education (CPE) they planned to focus their time. Respondents were able to mark as

many areas as they chose, but a majority from both credential groups said they wanted to participate in clinical nutrition activities. Household income, as opposed to the individual's income was requested, because it was believed to be a more accurate indication of the resources available for continuing professional education. Twenty-nine percent of the RDs' household income was over $80,000 a year, while 31% of DTRs' household income was from $20,001-30,000. Four percent of the respondents from both groups chose not to disclose their income.

Sources of Guidance for Continuing Professional Education

More DTRs than RDs indicated they received guidance from all sources except the family (Table 4). Significantly more RDs than DTRs indicated they did not need any guidance when selecting continuing professional education activities.

Mode of CPE

Respondents were given a list of various methods of continuing education, and asked to enter the number of hours they had spent in each activity during the previous year. The wide range of answers given made it difficult to determine actual attendance so any answer greater than zero was recoded as the number one. Therefore, the number one indicated the respondent had attended the activity, while a zero meant the activity had not been attended. Lectures, workshops, seminars, self-study programs, and exhibits received the highest attendance, by both groups (Table 5). The activities with the lowest participation by RDs were residency and fellowship programs, distance learning,

internet/web based courses, sponsored independent learning, and certification, in that order. DTRs seldom chose residency and fellowship programs, distance learning, sponsored independent learning, internet/web based courses, and professional leadership. Lectures, workshops, journal clubs and study groups, self-study programs courses by satellite, exhibits, professional leadership, professional reading, and posters were attended or had more participation by RDs than DTRs.

Practice Improvement

Respondents answered a question containing seven statements about the effect the CPE activities they attended on learning needs (improving practice). They were asked to indicate their agreement with each statement on a scale of zero to four. A composite scale score was calculated by totaling the answers of each respondent; "don't know" or "zero" responses were not included in the scale score. The minimum possible score was seven while the maximum was 28. Higher scores indicated a greater satisfaction with continuing education. There was no significant difference between RDs and DTRs in their perception of how the CPE activities they attended improved their practice skills (Table 6). Both RDs and DTRs viewed the CPE activities they attended as having a positive influence on their practice.

Ability to Find CPE

Study participants were given four statements concerning their ability to find appropriate CPE activities. They indicated their agreement to the statements using a

scale of zero to four with zero meaning "don't know" and four meaning "strongly agree" with the statement. A composite scale score was generated for each statement by totaling the answers of each respondent, not including the "don't know" responses. The minimum possible score was four and the maximum possible score was 16. The higher the score the more positive the response. There was no difference between RDs and DTRs in their ability to find appropriate CPE activities (Table 7), both scores were very positive.

Likelihood to Attend CPE Activities

Respondents were given a list of 20 types of CPE delivery modes (i.e. lectures) and asked to indicate their likelihood to attend each mode in the future. They answered the question using a scale of one to five with one being "least likely to attend" and five being "most likely to attend". Principal Component Factor analysis was performed on the question due to the large number of activities listed. Activities with similarities loaded on to two factors. The Experiential factor included more traditional forms of CPE activities such as experiential skill development, certificate programs certification, academic coursework, residency and fellowships, and sponsored independent learning. The Technological factor was composed of activities involving video, audio, and computer, Internet and web-based courses, courses by satellite, and distance learning. The Experiential factor score had a minimum possible score of six and a maximum score of 30. The Technological factor score had a minimum possible score of four and a maximum score of 20. The higher the score the more likely the dietetics professional was to attend CPE activities in the factor.

The two types of practitioners were compared to each other. DTRs were more likely to attend CPE activities of an academic or experiential nature than RDs (Table 8). There was no difference between RDs and DTRs in their likelihood to attend technologically presented CPE activities.

Effect of Employment Status on Attendance of CPE Activities

Table 9 summarizes the attendance of RDs at selected types of CPE activities based on employment status. RDs who were employed full-time were more likely to attend lectures, workshops, seminars, exhibits, poster sessions, experiential skill developments, and professional leadership, and participated in professional reading, video/computer based, and satellite activities and RDs who were not employed were less likely to participate in these activities. The opposite association was seen for self-study programs. RDs who were not employed were more likely to use self-study programs and employed RDs were less likely to use this method. DTRs who were employed full-time were more likely to attend lectures and seminars (Table 10). There was no significant difference in the percentages of DTRs who attended workshops and exhibits and participated in self-study programs when examined according to employment status.

Job Function as it Effects Attendance of CPE Activities

RDs who worked in clinical services attended lectures, seminars, and participated in self-study programs more than those who worked in others areas of dietetics (Table 11). Those employed in foodservices attended seminars and exhibits more than those in

other jobs. If the respondents practiced in foodservices, fewer of them attended lectures and conducted less professional reading than all others. More public health and wellness RDs participated in workshops and did more professional reading than other RDs. Those RDs who were in research and education did not participate in self-study programs to the extent of others but did attend more poster sessions than RDs in other areas. Sales/marketing dietitians attended more experiential skill development activities and exhibits than all others did. RDs who worked in nutrition information did not significantly attend more activities when compared to other RDs.

Clinical DTRs attended seminars more than all other DTRs (Table 12). DTRs employed in research and education participated in self-study programs more than DTRs in other areas. Analysis was not performed if the numbers in each cell were too low (Tables 11 & 12).

Effect of Focus of CPE on CPE Attendance

More RDs who wanted CPE in foodservice attended seminars and exhibits more than all other RDs (Table 13). More RDs whose focus of CPE was in clinical nutrition attended seminars and participated in self-study programs compared to those who wanted CPE in other areas. RDs who focused on community nutrition CPE did not differ from other RDs in kind of CPE activity attended. RDs interested in foods/food science CPE activities attended more exhibits than all other RDs. Those who said they wanted business/ communication CPE attended experiential skill development activities and exhibits more than RDs interested in other areas. RDs focusing their CPE activities on the area of management attended more workshops, seminars, and exhibits than other dietitians but not as many participated in self-study programs as much as other RDs. RDs

who said their focus was on education attended more workshops, experiential skill development activities, and poster sessions than other RDs. RDs focused on research CPE activities attended poster sessions more than other dietitians. Analysis was not performed on cells with small numbers (Table 13).

More DTRs who had clinical nutrition as their CPE focus attended seminars compared to all other DTRs (Table 14). The DTRs who wanted CPE activities in the area of management more, attended more workshops and seminars compared to other DTRs. DTRs interested in the areas of foodservice, community nutrition, foods/food science, business/communication, and research did not differ from other DTRs in type of CPE activity they attended. It should be noted that analysis was not performed if numbers in each cell were too small (Table 14).

Effect of Area of Residence on Ability to Find CPE Activities

Respondents were given four statements regarding their ability to find CPE activities. They were asked to indicate their agreement to each statement on a scale of zero to four, with zero indicating a "don't know" response, one indicating strongly disagree, and four indicating strongly agree. The ability of RDs to find CPE activities that met their learning needs was not significantly affected by the geographical area in which they lived (Table 15). The ability of RDs to find CPE activities that were affordable and fit their schedules was also not significantly affected by their geographical area of residence. RDs who lived in rural areas were less likely to find CPE activities that were geographically accessible than were those who lived in suburban or urban areas. The responses of RDs who lived outside the US were not included in the analysis

because only eight RDs living abroad participated in the study. The ability of DTRs to find appropriate CPE activities was not significantly affected by geographic area of residence (Table 16).

Effect of Employment Status on Ability to Find CPE

Participants responded to statements about their ability to find CPE activities with the response categories ranging from one, meaning strongly disagree, to four, meaning strongly agree. A response option zero meaning don't know was offered but was not included in the analysis. A mean response was generated and then an ANOVA was performed to determine if the employment status of a dietetics professional effected ability to find appropriate CPE activities. A lower score meant disagreement and a higher score mean strong agreement with the statements. The employment status of RDs and DTRs had no significant effect on their ability to find suitable CPE activities (Tables 17 and 18, respectively).

Effect of Job Function on Ability to Find CPE

Table 19 summarizes the effect of job function on the ability of RDs to find CPE activities. The term "all others" is used in the table to represent all other job functions as compared to each individual job function. Participants responded to four statements to indicate their ability to find CPE activities. They were asked to respond on a scale of one to four with one being strongly disagree and four being strongly agree. A response of zero, meaning "don't know", was available but not included in the analysis. A mean

response was generated with a lower mean indicating disagreement and a higher mean indicating agreement. RDs working in foodservice and those working in sales and marketing could not find CPE activities that met their learning needs as well as RDs working in other areas of dietetics (Table 19). Those RDs who worked in public health and wellness and those working in research and higher education were able to find CPE activities that met their learning needs more so than all other RDs. RDs working in research and higher education responded they could find CPE activities that were geographically accessible more so than RDs in all other areas of practice. The ability of DTRs to find CPE activities was not significantly compromised by their job functions (Table 20).

Effect of Job Function on Area of Focus for CPE

Table 21 summarizes how the job function of an RD affects her or his area of focus for CPE. More RDs in clinical services want CPE activities in clinical nutrition but fewer wanted CPE activities in community nutrition, food science, business/communication, management, education, or research. More food service RDs want CPE activities in the areas of food service, clinical nutrition, and management. Fewer food service RDs want CPE activities in community nutrition, food science, business/communication, education, or research. More RDs working in public health and wellness desire CPE in the subjects of clinical nutrition and community nutrition, but do not want CPE activities in food service, food science, management, or education. Research and higher education RDs are more interested in clinical nutrition and education activities. Research and higher education RDs are less interested in food service, business/communication, management, or research CPE activities. More RDs who said

they worked primarily in sales and marketing want activities in business/communication but fewer want CPE activities in clinical nutrition, food science, or management. Those RDs working in nutrition information were less interested in activities in food service, community nutrition, food science, business/communication, or education.

DTRs who work in clinical services were interested in clinical nutrition activities more than other DTRs, but were less interested in CPE activities in community nutrition (Table 22). Food service DTRs were interested in food service more than all other DTRs but are less interested in management activities. Those DTRs who work in public health and wellness were interested in CPE activities in community nutrition but had less interest in activities in food service, clinical nutrition, or education. The DTRs who work primarily in nutrition information were more interested in clinical nutrition and community nutrition CPE activities and were less interested in education activities. It should be noted that due to the small number of DTR respondents in the areas of research/higher education and sales/marketing these results were not included in the analysis.

Table 3. Demographic characteristics of the study population.

Demographic characteristic	RD[1] (n = 1240) n[3] (%)	DTR[2] (n = 170) n (%)
Age (n=1408)		
20-30	109 (8.8)	20 (11.8)
31-40	498 (40.2)	58 (34.1)
41-50	506 (40.9)	63 (37.1)
51-60	104 (8.4)	28 (16.5)
61-70	16 (1.3)	1 (0.6)
Above 70	5 (0.4)	0 (0.0)
Gender (n=1409)		
Female	1209 (97.6)	159 (93.5)
Male	30 (2.4)	11 (6.5)
Race/Ethnicity (n=1409)		
White (not Hispanic)	1128 (91.0)	147 (86.5)
Black (not Hispanic)	27 (2.2)	11 (6.5)
Hispanic	16 (1.3)	5 (2.9)
Asian or Pacific Islander	43 (3.5)	3 (1.8)
American Indian, Alaskan Native, or Hawaiian Native	3 (0.2)	0 (0.0)
Prefer not to disclose	22 (1.8)	4 (2.4)
Area of residence (n=1393)		
Rural	239 (19.4)	50 (30.5)
Suburban	631 (51.3)	77 (47.0)
Urban	350 (28.5)	37 (22.6)
Outside the United States	9 (0.7)	0 (0.0)
Employment status (n=1406)		
Full-time	733 (59.3)	110 (64.7)
Part-time	348 (28.2)	31 (18.2)
Not employed	155 (12.5)	29 (17.1)
Primary (at least 20% of time) work setting (n=1224)		
Acute-care facility	369 (34.1)	49 (34.8)
Long-term care facility	221 (20.4)	57 (40.4)
Home care facility	34 (3.1)	0 (0.0)
School foodservice operation	33 (3.0)	4 (2.8)
Commercial foodservice operation	11 (1.0)	4 (2.8)
Community/ public health facility or organization	165 (15.2)	24 (17.0)
Ambulatory/ outpatient clinic or office	212 (19.6)	6 (4.3)
Pharmaceutical company	13 (1.2)	0 (0.0)
Manufacturer/ distributor/ retailer	20 (1.8)	3 (2.1)
College/university foodservice	3 (0.3)	1 (0.7)
College/university faculty	99 (9.1)	2 (1.4)
HMO, physician or other health care provider	47 (4.3)	4 (2.8)
Private practice/primarily individual client counseling	81 (7.5)	1 (0.7)
Consultation, primarily to health care facilities	110 (10.2)	2 (1.4)
Consultation, primarily to other organizations/industries/media	64 (5.9)	1 (0.7)
Other	175 (16.2)	27 (19.1)

[1] RD = Registered dietitian.
[2] DTR = Dietetic technician, registered
[3] Percents are within the category of RD or DTR by item.
[4] CPE = Continuing Professional Education

Table 3. Continued

Demographic characteristic	RD[1] n (%)	DTR[2] n (%)
Job function (at least 20% of time) (n=1217)		
Clinical services	578 (53.6)	85 (61.2)
Foodservices	219 (20.3)	62 (44.6)
Public/commercial foodservices	25 (2.3)	4 (2.9)
Public health/community nutrition	245 (22.7)	25 (18.0)
Wellness/disease prevention	226 (21.0)	15 (10.8)
Research	71 (6.6)	7 (5.0)
Sales/marketing or product development	60 (5.6)	5 (3.6)
Nutrition information/ communication	320 (29.7)	55 (39.6)
Higher education	101 (9.4)	2 (1.4)
Other	113 (10.5)	11 (7.9)
Highest degree earned (n=1401)		
Associate degree	0	129 (76.8)
Bachelor's degree	559 (45.3)	35 (20.8)
Master's degree	621 (50.4)	3 (1.8)
Doctoral degree	53 (4.3)	1 (0.6)
Focus of CPE[4] (n=1396)		
Foodservice	188 (15.3)	58 (34.5)
Clinical nutrition	804 (65.5)	112 (66.7)
Community nutrition	416 (33.9)	61 (36.3)
Foods/food science	107 (8.7)	31 (18.5)
Business/communication	222 (18.1)	20 (11.9)
Management	289 (23.5)	43 (25.6)
Education	298 (24.3)	31 (18.5)
Research	129 (10.5)	12 (7.1)
Annual gross household income (n=1354)		
Less than $20,000	56 (4.7)	28 (17.2)
$20,001- 30,000	74 (6.2)	50 (30.7)
$30,001- 40,000	173 (14.5)	23 (14.1)
$40,001- 50,000	194 (16.3)	15 (9.2)
$50,001- 60,000	131 (11.0)	20 (12.3)
$60,001- 70,000	114 (9.6)	7 (4.3)
$70,001- 80,000	104 (8.7)	8 (4.9)
Over $80,000	345 (29.0)	12 (7.4)

[1] RD = Registered dietitian.
[2] DTR = Dietetic technician, registered.
[3] Percents are within the category of RD or DTR by item.
[4] CPE = Continuing Professional Education.

Table 4. Guidance sources used by respondents when selecting continuing professional education activities.

Sources of Guidance	RD (n=1234)		DTR (n=166)		p value[3]
	n	%	n	%	
CDR[1] Staff	19	1.5	15	9.0	.000
PDP[2] Guide	5	0.4	5	3.0	.000
Career enhancement literature	301	24.4	70	42.2	.000
Professional colleague	361	29.3	76	45.8	.000
Supervisor/professor	280	22.7	71	42.8	000
Career enhancement workshops	193	15.7	38	22.9	.018
Family	92	7.5	14	8.4	NS[4]
Did not need guidance	573	46.5	37	22.3	.000

[1] Commission on Dietetic Registration.
[2] *Professional Development Portfolio.*
[3] All χ^2 analysis compares row percents.
[4] NS = not significant.

Table 5. Types of continuing professional education activities attended by respondents.

CPE[1] Activity	RD (n = 1240)		DTR (n = 170)		p[2]
	n	%	n	%	
Lectures	715	57.7	72	42.4	.000
Workshops	531	42.8	43	25.3	.000
Journal clubs and study groups	144	11.6	9	5.3	.012
Seminars	604	48.7	72	42.4	NS[3]
Case Presentations	110	8.9	8	4.7	NS
Video/audio/computer based materials	174	14.0	16	9.4	NS
Self-study programs	372	30.0	38	22.4	.039
Internet, Web based course	32	2.6	5	2.9	NS
Courses by satellite	145	11.7	9	5.3	.012
Distance learning	22	1.8	3	1.8	NS
Experiential skill development	104	8.4	13	7.6	NS
Certificate programs	106	8.5	22	12.9	NS
Certification	53	4.3	10	5.9	NS
Academic coursework	90	7.3	16	9.4	NS
Exhibits	411	33.1	36	21.2	.002
Professional leadership	104	8.4	6	3.5	.022
Professional reading	290	23.4	16	9.4	.000
Posters	208	16.8	16	9.4	.013
Residency and fellowship programs	7	0.6	1	0.6	NS
Sponsored independent learning	39	3.1	3	1.8	NS

[1] Continuing Professional Education.

[2] All χ^2 analysis compares row percents.

[3] NS = Not significant.

Table 6. Perception that CPE[1] activities improved practice of RDs[2] and DTRs[3].

Scale	RD (n)	DTR (n)	p value
Ability of CPE activities to meet learning needs (improve practice)	21.4 ± 3.5 (1025)	21.1 ± 4.0 (110)	NS[4]

[1] CPE = Continuing professional education.
[2] RD = Registered dietitians.
[3] DTR = Dietetic technicians, registered.
[4] NS = not significant using independent t-test.

Table 7. Ability of RDs[1] and DTRs[2] to find appropriate CPE[3] activities.

Scale	RD (n)	DTR (n)	p value
Ability to find appropriate CPE activities	11.7 ± 2.3 (1135)	11.6 ± 2.5 (134)	NS[4]

[1] RD = Registered dietitians.
[2] DTR = Dietetic technicians, registered.
[3] CPE = Continuing Professional Education.
[4] NS = Not significant using independent t-test.

Table 8. Likelihood of RDs[1] and DTRs[2] to attend groups of CPE[3] activities.

Factor	RD (n)	DTR (n)	p value
Experiential CPE activities	14.3 ± 4.4[4] (1133)	16.0 ± 5.4 (155)	.000
Technological CPE activities	10.1 ± 3.6 (1168)	9.7 ± 3.9 (156)	NS

[1] RD = Registered dietitians.
[2] DTR = Dietetic technicians, registered.
[3] CPE = Continuing Professional Education.
[4] Means compared across rows.

Table 9. Effect of employment status on type of CPE[1] activities[2] attended by RDs[3] (n = 1236).

		Full-time		Part-time		Not-employed		p value[4]
		n	%	n	%	n	%	
Lectures	Not attended	268	36.6	145	41.7	110	71.0	
	Attended	465	63.4	203	58.3	45	29.0	.000
Workshops	Not attended	367	50.1	207	59.5	131	84.5	
	Attended	366	49.9	141	40.5	24	15.5	.000
Seminars	Not attended	335	45.7	185	53.2	114	73.5	
	Attended	398	54.3	163	46.8	41	26.5	.000
Self-study programs	Not attended	566	77.2	222	63.8	78	50.3	
	Attended	167	22.8	126	36.2	77	49.7	.000
Exhibits	Not attended	439	59.9	249	71.6	137	88.4	
	Attended	294	40.1	99	28.4	18	11.6	.000
Professional reading	Not attended	550	75.0	265	76.1	131	84.5	
	Attended	183	25.0	83	23.9	24	15.5	.040
Posters	Not attended	588	80.2	296	85.1	144	92.9	
	Attended	145	19.8	52	14.9	11	7.1	.000
Video/ Computer Based	Not attended	602	82.1	308	88.5	152	98.1	
	Attended	131	17.9	40	11.5	3	1.9	.000
Satellite	Not attended	626	85.4	317	91.1	148	95.5	
	Attended	107	14.6	31	8.9	7	4.5	.000
Experiential skill Development	Not attended	662	90.3	318	91.4	152	98.1	
	Attended	71	9.7	30	8.6	3	1.9	.007
Professional leadership	Not attended	647	88.3	333	95.7	152	98.1	
	Attended	86	11.7	15	4.3	3	1.5	.000

[1] CPE = Continuing Professional Education.
[2] Activities with highest attendance selected
[3] RDs = Registered dietitians.
[4] All χ^2 analysis compares row percents.

Table 10. Effect of employment status on type of CPE[1] activities[2] attended by DTRs[3] (n=170).

		Full-time		Part-time		Not-employed		p value
		n	%	n	%	n	%	
Lectures	Not attended	57	51.8	17	54.8	24	82.8	
	Attended	53	48.2	14	45.2	5	17.2	.010
Workshops	Not attended	78	70.9	23	74.2	26	89.7	
	Attended	32	29.1	8	25.8	3	10.3	NS[4]
Seminars	Not attended	56	50.9	18	58.1	24	82.8	
	Attended	54	49.1	13	41.9	5	17.2	.008
Self-study programs	Not attended	83	75.5	22	71.0	27	93.1	
	Attended	27	24.5	9	29.0	2	6.9	NS
Exhibits	Not attended	86	78.2	23	74.2	25	86.2	
	Attended	24	21.8	8	25.8	4	13.8	NS

[1] CPE = Continuing Professional Education.
[2] Activities with highest attendance selected.
[3] DTRs = Dietetic technicians, registered.
[4] All χ^2 analysis compares row percents.
[5] NS = Not Significant.

Table 11. Percentage of RDs[1] that attended various types of CPE[2] activities[3] by job function (n = 1078).

	CPE Activity															
	Lectures		Workshops		Seminars		Self-study programs		Experiential skill development		Exhibits		Professional reading		Posters	
Job Function	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Clinical Services	373	64.5	266	46.0	320	55.4	175	30.3	58	10.0	204	35.3	150	26.0	111	19.2
All others	293	58.6	239	47.8	241	48.2	118	23.6	43	8.6	189	37.8	114	22.8	85	17.0
p[4]		.046		NS[5]		.019		.014		NS		NS		NS		NS
Foodservices	132	56.2	114	48.5	146	62.1	66	28.1	24	10.2	115	48.9	42	17.9	44	18.7
All others	534	63.3	391	46.4	415	49.2	227	26.9	77	9.1	278	33.0	222	26.3	152	18.0
p		.045		NS		.000		NS		NS		.000		.008		NS
Public Health/Wellness	231	61.6	196	52.3	191	50.9	91	24.3	39	10.4	128	34.1	106	28.3	59	15.7
All others	435	61.9	309	44.0	370	52.6	202	28.7	62	8.8	265	37.7	158	22.5	137	19.5
p		NS		.009		NS		NS		NS		NS		.035		NS
Research/Education	98	67.1	61	41.8	72	49.3	28	19.2	14	9.6	61	41.8	41	28.1	47	32.2
All others	568	60.9	444	47.6	489	52.5	265	28.4	87	9.3	332	35.6	223	23.9	149	16.0
p		NS		NS		NS		.019		NS		NS		NS		.000
Sales/Marketing	43	71.7	28	46.7	30	50.0			10	16.7	35	58.3	15	25.0		
All others	623	61.2	477	46.9	531	52.2			91	8.9	358	35.2	249	24.5		
p		NS		NS		NS				.046		.000		NS		
Nutrition Information	199	62.2	162	50.6	178	55.6	90	28.1	37	11.6	123	38.4	85	26.6	53	16.6
All others	467	61.6	343	45.3	383	50.5	203	26.8	64	8.4	270	35.6	179	23.6	143	18.9
p		NS		NS		NS		NS		NS		NS		NS		NS

[1] RDs = Registered dietitians.
[2] CPE = Continuing Professional Education.
[3] Activities with highest attendance selected.
[4] All χ^2 analysis compares within job function.
[5] NS = Not Significant.

Table 12. Percentage of DTRs[1] that attended various types of CPE[2] activities[3] by job function (n = 139).

	CPE Activity									
	Lectures		Workshops		Seminars		Self-study programs		Exhibits	
Job Function	n	%	n	%	n	%	n	%	n	%
Clinical Services	43	50.6	26	30.6	47	55.3	21	24.7	23	27.1
All others	23	42.6	14	25.9	18	33.3	14	25.9	9	16.7
p[4]		NS[5]		NS		.011		NS		NS
Foodservices	33	52.4	21	33.3	35	55.6	15	23.8	15	23.8
All others	33	43.4	19	25.0	30	39.5	20	26.3	17	22.4
p		NS		NS		NS		NS		NS
Public Health/Wellness	20	62.5	12	37.5						
All others	46	43.0	28	26.2						
p		NS		NS						
Nutrition Information	27	49.1	16	29.1			14	25.5		
All others	39	46.4	24	28.6			21	25.0		
p		NS		NS				NS		

[1] DTRs = Dietetic technicians, registered.
[2] CPE = Continuing Professional Education.
[3] Activities with highest attendance selected.
[4] All χ^2 analysis compares within job function
[5] NS = Not Significant.

Table 13. Effect of CPE[1] focus on modes of receiving CPE by RDs[2] (n = 1228).

	CPE Activity															
	Lectures		Workshops		Seminars		Self-study programs		Experiential Skill Development		Exhibits		Professional reading		Posters	
Focus of CPE	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Foodservice	104	55.3	92	48.9	106	56.4	60	31.9	19	10.1	98	52.1	41	21.8	36	19.1
All others	605	58.2	436	41.9	495	47.6	309	29.7	84	8.1	312	30.0	247	23.8	170	16.3
p[3]		NS[4]		NS		.027		NS		NS		.000		NS		NS
Clinical nutrition	475	59.1	343	42.7	415	51.6	269	33.5	62	7.7	254	31.6	194	24.1	138	17.2
All others	234	55.2	185	43.6	186	43.9	100	23.6	41	9.7	156	36.8	94	22.2	68	16.0
p		NS		NS		.010		.000		NS		NS		NS		NS
Community nutrition	225	54.1	194	46.6	199	47.8	132	31.7	28	6.7	131	31.5	94	22.6	72	17.3
All others	484	59.6	334	41.1	402	49.5	237	29.2	75	9.2	279	34.4	194	23.9	134	16.5
p		NS		NS		NS		NS		NS		NS		NS		NS
Foods/Food science	56	52.3	39	36.4	52	48.6	41	38.3	9	8.4	46	43.0	30	28.0	18	16.8
All others	653	58.3	489	43.6	549	49.0	328	29.3	94	8.4	364	32.5	258	23.0	188	16.8
p		NS		NS		NS		NS		NS		.027		NS		NS

[1] CPE = Continuing professional education.
[2] RDs = Registered dietitians.
[3] All χ^2 analysis compares within job function.
[4] NS = Not significant.

Table 13. Continued.

	CPE Activity															
	Lectures		Workshops		Seminars		Self-study programs		Experiential Skill Development		Exhibits		Professional reading		Posters	
Focus of CPE	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Business/Communication	130	58.6	102	45.9	117	52.7	68	30.6	29	13.1	96	43.2	58	26.1	45	20.3
All others	579	57.6	426	42.3	484	48.1	301	29.9	74	7.4	314	31.2	230	22.9	161	16.0
p		NS		NS		NS		NS		.005		.001		NS		NS
Management	160	55.4	157	54.3	171	59.2	73	25.3	28	9.7	127	43.9	67	23.2	51	17.6
All others	549	58.5	371	39.5	430	45.8	296	31.5	75	8.0	283	30.1	221	23.5	155	16.5
p		NS		.000		.000		.042		NS		.000		NS		NS
Education	179	60.1	146	49.0	140	47.0	84	28.2	34	11.4	109	36.6	75	25.2	65	21.8
All others	530	57.0	382	41.1	461	49.6	285	30.6	69	7.4	301	32.4	213	22.9	141	15.2
p		NS		.016		NS		NS		.031		NS		NS		.007
Research	84	65.1	52	40.3	58	45.0			15	11.6			31	24.0	31	24.0
All others	625	56.9	476	43.3	543	49.4			88	8.0			257	23.4	175	15.9
p		NS		NS		NS				NS				NS		.020

[1] CPE = Continuing professional education.
[2] RDs = Registered dietitians.
[3] All χ^2 analysis compares within job function
[4] NS = Not significant.

Table 14. Effect of CPE[1] focus on modes of receiving CPE by DTRs[2] (n = 168).

	CPE Activity									
	Lectures		Workshops		Seminars		Self-study programs		Exhibits	
Focus of CPE	n	%	n	%	n	%	n	%	n	%
Foodservice	23	39.7	16	27.6	29	50.0			15	25.9
All others	48	43.6	27	24.5	41	37.3			21	19.1
p[3]		NS[4]		NS		NS				NS
Clinical nutrition	46	41.1	29	25.9	53	47.3	25	22.3	28	25.0
All others	25	4.6	14	25.0	17	30.4	12	21.4	8	14.3
p		NS		NS		.036		NS		NS
Community nutrition	30	49.2	15	24.6			13	21.3		
All others	41	38.3	28	26.2			24	22.4		
p		NS		NS				NS		
Foods/Food science	16	51.6			14	45.2	7	22.6		
All others	55	40.1			56	40.9	30	21.9		
p		NS				NS		NS		

[1] CPE = Continuing professional education.
[2] DTRs = Dietetic technicians, registered.
[3] All χ^2 analysis compares within job function.
[4] NS = Not significant.

Table 14. Continued.

	CPE Activity									
	Lectures		Workshops		Seminars		Self-study programs		Exhibits	
Focus of CPE	n	%	n	%	n	%	n	%	n	%
Business/Communication	9	45.0	6	30.0						
All others	62	41.9	37	25.0						
p		NS		NS						
Management	22	51.2	17	39.5	26	60.5			10	23.3
All others	49	39.2	26	20.8	44	35.2			26	20.8
p		NS		.015		.004				NS
Education			9	29.0			8	25.8		
All others			34	24.8			29	21.2		
p				NS				NS		

[1] CPE = Continuing professional education.
[2] DTRs = Dietetic technicians, registered.
[3] All χ^2 analysis compares within job function.
[4] NS = Not significant.

Table 15. Effect of area of residence on ability of RDs[1] to find CPE[2] activities (n = 1228).

	Rural (n = 231)	Suburban (n = 584)	Urban (n = 320)
Met learning needs	3.0 ± 0.6[a]	3.0 ± 0.7[a]	3.0 ± 0.6[a]
Were affordable	2.8 ± 0.7[a]	2.9 ± 0.7[a]	2.9 ± 0.7[a]
Were geographically accessible	2.7 ± 0.8[a]	3.0 ± 0.7[b]	2.9 ± 0.7[b]
Fit my schedule	2.8 ± 0.7[a]	2.9 ± 0.7[a]	3.0 ± 0.7[a]

[1] RDs = Registered dietitians.
[2] CPE = Continuing Professional Education.
[a] Means with different superscripts across rows are significantly different at $p<.05$ using ANOVA and Scheffe's post hoc test.

Table 16. Effect of area of residence on ability of DTRs[1] to find CPE[2] activities (n = 168).

	Rural (n = 39)	Suburban (n = 68)	Urban (n = 29)
Met learning needs	2.9 ± 0.7[3]	3.0 ± 0.6	3.0 ± 0.7
Were affordable	2.7 ± 0.8	2.8 ± 0.8	2.8 ± 0.8
Were geographically accessible	2.7 ± 0.8	2.9 ± 0.8	3.0 ± 0.7
Fit my schedule	2.8 ± 0.7	2.9 ± 0.7	3.0 ± 0.8

[1] DTRs = Dietetic technicians, registered.
[2] CPE = Continuing Professional Education.
[3] Means not significantly different across rows at $p<.05$ using ANOVA.

Table 17. The effect of employment status on the ability of RDs[1] to find appropriate CPE[2] activities.

	Employment Status		
	Full-time (n = 698)	Part-time (n = 332)	Not employed (n = 128)
Met learning needs	3.0 ± 0.6[3]	2.9 ± 0.7	2.9 ± 0.6
Were affordable	2.9 ± 0.7	2.9 ± 0.7	2.8 ± 0.7
Were geographically accessible	2.9 ± 0.7	2.9 ± 0.8	2.9 ± 0.7
Fit my schedule	2.9 ± 0.7	2.9 ± 0.7	3.0 ± 0.7

[1] RDs = Registered dietitians.
[2] CPE = Continuing Professional Education.
[3] All means not significantly different across rows at $p<.05$ using ANOVA.

Table 18. The effect of employment status on the ability of DTRs[1] to find appropriate CPE[2] activities.

	Employment Status		
	Full-time (n = 94)	Part-time (n = 30)	Not employed (n = 15)
Met learning needs	3.0 ± 0.7[3]	3.0 ± 0.6	2.9 ± 0.8
Were affordable	2.8 ± 0.8	2.7 ± 0.9	2.6 ± 0.9
Were geographically accessible	3.0 ± 0.7	2.8 ± 0.9	2.6 ± 1.0
Fit my schedule	2.9 ± 0.7	2.8 ± 0.8	2.7 ± 0.9

[1] DTRs = Dietetic technicians, registered.
[2] CPE = Continuing Professional Education.
[3] Means not significantly different across rows at $p<.05$ using ANOVA

Table 19. The effect of job function on the ability of RDs[1] to find appropriate CPE[2] activities.

Job Function	Clinical Services (n = 561)	All Others (n = 474)	Food Services (n = 228)	All Others (n = 805)	Public Health / Wellness (n = 362)	All Others (n = 671)
Met learning needs	3.0 ± 0.6[a]	3.0 ± 0.7[a]	2.8 ± 0.7[a]	3.0 ± 0.7[b]	3.1 ± 0.6[a]	3.0 ± 0.7[b]
Were affordable	2.9 ± 0.7[a]	2.9 ± 0.7[a]	2.9 ± 0.7[a]	2.9 ± 0.7[a]	2.8 ± 0.7[a]	2.9 ± 0.7[a]
Were geographically accessible	2.9 ± 0.8[a]	2.9 ± 0.8[a]	2.9 ± 0.7[a]	2.9 ± 0.8[a]	2.9 ± 0.7[a]	2.9 ± 0.8[a]
Fit my schedule	2.9 ± 0.7[a]	2.9 ± 0.7[a]	2.8 ± 0.7[a]	2.9 ± 0.7[a]	2.9 ± 0.7[a]	2.9 ± 0.7[a]

[1] RDs = Registered Dietitians.
[2] CPE = Continuing Professional Education.
[a] Means within job function pairs with different superscripts are significantly different at $p<0.05$ using independent t-test.

Table 19. Continued.

Job Function	Research/ Higher Education (n = 140)	All Others (n = 894)	Sales/ Marketing (n = 57)	All Others (n = 964)	Nutrition Information (n = 311)	All Others (n = 722)
Met learning needs	3.1 ± 0.7^a	3.0 ± 0.7^b	2.7 ± 0.8^a	3.0 ± 0.7^b	3.0 ± 0.7^a	3.0 ± 0.7^a
Were affordable	3.0 ± 0.7^a	2.9 ± 0.7^a	2.8 ± 0.8^a	2.9 ± 0.7^a	2.9 ± 0.7^a	2.9 ± 0.7^a
Were geographically accessible	3.0 ± 0.8^a	2.9 ± 0.8^b	2.9 ± 0.8^a	2.9 ± 0.8^a	2.9 ± 0.8^a	2.9 ± 0.8^a
Fit my schedule	3.0 ± 0.8^a	2.9 ± 0.7^a	2.8 ± 0.8^a	2.9 ± 0.7^a	2.9 ± 0.7^a	2.9 ± 0.7^a

[1] RDs = Registered Dietitians.
[2] CPE = Continuing Professional Education.
[a] Means within job function pairs with different superscripts are significantly different at $p<0.05$ using independent t-test.

Table 20. The effect of job function on the ability of DTRs[1] to find appropriate CPE[2] activities.

Job Function	Clinical Services (n = 76)	All Others (n = 45)	Food Services (n = 58)	All Others (n = 63)	Public Health /Wellness (n = 28)	All Others (n = 95)	Nutrition Information (n = 48)	All Others (n = 76)
Met learning needs	3.0 ± 0.6[3]	3.0 ± 0.7	3.0 ± 0.6	3.0 ± 0.6	3.0 ± 0.6	3.0 ± 0.6	2.9 ± 0.7	3.0 ± 0.6
Were affordable	2.7 ± 0.8	2.9 ± 0.7	2.7 ± 0.8	2.7 ± 0.7	2.8 ± 0.7	2.8 ± 0.7	2.7 ± 0.8	2.9 ± 0.8
Were geographically accessible	2.9 ± 0.8	2.9 ± 0.7	2.9 ± 0.8	2.9 ± 0.7	2.9 ± 0.7	2.9 ± 0.8	2.9 ± 0.8	3.0 ± 0.8
Fit my schedule	2.9 ± 0.7	2.9 ± 0.7	2.8 ± 0.7	2.9 ± 0.6	2.9 ± 0.6	2.9 ± 0.7	2.8 ± 0.7	2.9 ± 0.7

[1] DTRs = Dietetic Technicians, Registered.
[2] CPE = Continuing Professional Education
[3] Means within job function pairs are not significantly different at $p<0.05$ using independent t-test.

Table 21. Effect of job function on the area of focus for CPE[1] activities of RDs[2].

Focus of CPE		Job Function: Clinical Services (n = 575) n	%	Food Services (n = 234) n	%	Public Health/Wellness (n = 375) n	%	Research/Higher Education (n = 146) n	%	Sales/Marketing (n = 60) n	%	Nutrition Information (n = 320) n	%
Food Service													
	yes	87	15.1	135	57.7	23	6.1	9	6.1	9	15.0	40	12.5
	no	488	84.9	99	42.3	352	93.8	137	93.8	51	85.0	280	87.5
	p[3]	NS[4]		.000		.000		.000		NS		.042	
Clinical Nutrition	yes	528	91.8	135	57.7	204	54.4	79	54.1	24	40.0	206	64.4
	no	47	8.2	99	42.3	171	45.6	67	45.9	36	60.0	114	35.6
	p	.000		.011		000		.004		.000		NS	
Community Nutrition	yes	124	21.6	91	17.5	247	65.8	42	28.7	16	26.7	141	44.1
	no	451	78.4	193	82.5	128	34.1	104	71.2	44	73.3	179	55.9
	p	.000		.000		000		NS		NS		.000	
Food Science													
	yes	34	5.9	38	16.2	21	5.6	13	8.9	12	20.0	34	10.6
	no	541	94.1	196	83.8	354	94.4	133	91.1	48	80.0	286	89.4
	p	.005		.000		.028		NS		.001		.048	

[1] CPE = Continuing Professional Education.
[2] RDs = Registered Dietitians.
[3] All χ^2 analysis compares within job function
[4] NS = Not Significant.

Table 21. Continued.

Focus of CPE		Job Function: Clinical Services (n = 575) n	%	Food Services (n = 234) n	%	Public Health/Wellness (n = 375) n	%	Research/Higher Education (n = 146) n	%	Sales/Marketing (n = 60) n	%	Nutrition Information (n = 320) n	%
Business/ Communication	yes	67	11.6	63	27.0	72	19.2	18	12.3	41	68.3	80	25.0
	no	508	88.3	171	73.1	303	80.1	128	87.7	19	31.7	240	75.0
	p[3]	.000		.000		NS[4]		.047		.000		000	
Management													
	yes	116	20.2	135	57.7	70	18.7	15	10.3	24	40.0	66	20.6
	no	454	79.8	99	42.3	305	81.3	131	89.7	36	60.0	254	79.4
	p	000		.000		.001		.000		.000		NS	
Education													
	yes	106	18.4	34	14.5	113	30.1	84	57.5	16	26.6	108	33.7
	no	469	81.5	200	85.5	262	69 8	62	42.5	44	73.3	212	66.2
	p	.000		.000		.003		.000		NS		000	
Research													
	yes	39	6.8	6	2.5	35	9.3	67	45.9	7	11.6	34	10.6
	no	536	93.2	228	97.4	340	90.6	79	54.1	53	88.3	286	89.4
	p	.000		.000		NS		000		NS		NS	

[1] CPE = Continuing Professional Education.
[2] RDs = Registered Dietitians
[3] All χ^2 analysis compares within job function.
[4] NS = Not Significant.

Table 22. Effect of job function on the area of focus for CPE[1] activities of DTRs[2].

Focus of CPE		Job Function: Clinical Services (n = 85) n	%	Food Services (n = 63) n	%	Public Health/Wellness (n = 32) n	%	Nutrition Information (n = 55) n	%
Food Service									
	yes	27	31.8	37	58.7	4	12.5	15	27.3
	no	58	68.2	26	41.2	28	87.5	40	72.7
	p[3]	NS[4]		.000		.003		NS	
Clinical Nutrition	yes	72	84.7	43	68.3	15	46.9	30	54.5
	no	13	15.3	20	31.7	17	53.1	25	45.4
	p	.000		NS		.008		.019	
Community Nutrition	yes	23	27.0	18	28.6	24	75.0	29	52.7
	no	62	72.9	45	71.4	8	25.0	26	47.3
	p	.011		NS		.000		.000	
Food Science									
	yes	13	15.3	14	22.2	3	9.4	8	14.5
	no	72	84.7	49	77.8	29	90.6	47	85.4
	p	NS		NS		NS		NS	
Business/ Communication	yes	7	8.2	8	12.7	3	9.4	8	14.5
	no	78	91.8	55	87.3	29	90.6	47	85.4
	p[3]	NS[4]		NS		NS		NS	
Management									
	yes	20	23.5	27	42.9	4	87.5	10	18.2
	no	65	76.5	36	57.1	28	12.5	45	81.8
	p	NS		.000		NS		NS	
Education									
	yes	11	12.9	8	12.7	11	34.4	18	32.7
	no	74	87.0	55	87.3	21	65.6	37	67.3
	p	NS		NS		.006		.000	
Research									
	yes	5	5.9	2	3.2	1	3.1	3	5.4
	no	80	94.1	61	96.8	31	96.9	52	94.5
	p	NS		NS		NS		NS	

[1] CPE = Continuing Professional Education.
[2] DTRs = Dietetic Technicians, Registered.
[3] All χ^2 analysis compares within job function.
[4] NS = Not Significant.

CHAPTER V

DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This study was conducted to compare the continuing professional education (CPE) of registered dietitians (RDs) and dietetic technicians, registered (DTRs). The data collected in this study examined the guidance used to select and selection of CPE activities, the effect of CPE activities on learning needs, the ability of RDs and DTRs to find CPE activities, and the type of CPE activities likely to be attended in the future.

Study Population

The population of the present study was very similar to that of the demographic characteristics of ADA members (Bryk and Soto, 1999). In both studies almost all of the participants were Caucasian females between the ages of 31 and 50 years old (Table 3). Regarding primary work setting, in the current study, Bryk and Soto (1999) and Kane et al (1996), most RDs worked in acute care, ambulatory care, or extended (long term) care facilities. DTRs in the present study and Bryk and Soto (1999) also had similar work settings, in that many worked in acute or extended care facilities. There was a slight difference in education level between the current study and Bryk and Soto (1999). In the present study half of the RDs held a master's degree while in the Bryk and Soto study (1999) only 40% had a master's degree. DTRs had similar education levels in the present study and Bryk and Soto (1999). The population in the present study is also comparable to Flynn et al. (1991) and Kane et al. (1996) in that the job function with the highest percentages for both RDs and DTRs was clinical.

Sources of Guidance for Continuing Professional Education

In the present study DTRs were more likely than RDs to receive guidance in their selection of CPE activities from several sources (Table 4). In fact more RDs reported they did not need guidance. A reason for this may be that RDs are in positions of greater flexibility while DTRs are in more highly supervised positions. RDs also had higher levels of education (see Table 3) which implies they are more self directed, and more confident in making decisions on their own. Thus DTRs may need more guidance than RDs under the Portfolio system of professional development. Both groups were in agreement that the family was not an influence in determining their selection of CPE activities.

Current and Future Modes of CPE

The survey used in the present study and the Flynn et al. study (1991) were not exactly the same, but there were similarities that can be compared. Flynn et al. (1991) categorized workshops by sponsoring group while the present study used a general mode of "workshops" (Table 5). In the study by Flynn et al. (1991) respondents could only select up to three events, while the present study did not limit respondents to a number of choices. In the Flynn et al. study (1991) the modes "ADA *Journal* continuing education articles" and "workshop with attendee participation" were referred to as "self-study programs" and "experiential skill development", respectively, in the current study. The term "presentation" was used in the Flynn et al. (1991) study, and in the current study the terms lectures and seminars were both listed. A final difference between study methods

is due to a change in allowable CPE activities. In the current study professional reading and professional leadership are approved CPE activities, but when Flynn et al. (1991) conducted their study CDR had not approved these two modes. Flynn et al. (1991) found that RDs most often attended state dietetic association meetings or workshops, workshops or meetings sponsored by other organizations, or district dietetic association workshops or meetings. Flynn et al. (1991) also found that DTRs attended workshops or meetings sponsored by other organizations, district dietetic association workshops or meetings, and workshops or meetings sponsored by local hospitals. In the present study workshops had the third highest percentage of participation, preceded by lectures and seminars respctively, by both RDs and DTRs. Higher percentages of RDs and DTRs participated in exhibits and self-study programs in the present study than the equivalent choices in Flynn et al. (1991).

Comparisons can also be made in the likelihood of dietetics professionals attending future activities between Flynn et al. (1991) and the present study. Flynn et al. (1991) found that both RDs and DTRs would choose to attend lectures and workshops in the future, but would not use computer-assisted instruction, study group/journal club, satellite broadcast, or audio and videocassette. Flynn et al. (1991) found that higher percentages of RDs than DTRs said they preferred lectures and workshops while in the current study the opposite was found. When the two groups in the present study were compared it was found that DTRs were more likely than RDs to attend activities of an experiential nature (Table 8). While in Flynn et al. (1991) neither RDs nor DTRs said they would use activities of a technological nature. Possible reasons for the differences between the two studies include fact that the study by Flynn et al. (1991) was conducted a

decade ago when it is assumed there were very few options in computer-assisted instruction and internet-based education was not even a possibility. Duyff (1999) is of the opinion that, due to technology, today there are jobs in areas such as nutrition software and Web site design, as well as services and skills that did not exist even five years ago.

Ability to Find CPE and Resulting Practice Improvement

Both RDs and DTRs in this study were able to find appropriate CPE activities. This might be due to the wide range of activities available that were not limited to certain types or topics as long as they were related to dietetics. Both groups of dietetics professionals perceived the CPE activities they attended would positively influence their practice. This is not surprising because it should be expected that no professional would waste their time or money on something from which they did not intend to benefit (Tables 6 and 7). The results from the present study differed with Queeney and Smutz (1990) who measured actual performance to determine learning needs and found that professionals did not know their learning needs based on actual performance and therefore would have problems finding continuing education that was beneficial to their practice.

Effect of Employment Status on Attendance at CPE Activities

The present study found that participation in CPE activities varied with employment status (Tables 9 and 10). A greater percentage of RDs who had part- or full-

time employment attended activities that would require time away from work such as lectures, workshops, seminars, exhibits, poster sessions, experiential skill developments, and professional leadership. A higher percentage of part- and full-time employed DTRs also attended lectures and seminars. This could be because these types of activities are commonly offered during the workweek or they might be offered at the employment site. A greater percentage of RDs employed either part- or full-time participated in activities that could be completed on their own time such as professional reading, video/computer based activities, and satellite activities. It was interesting to note that there was an inverse association between employment status and participation in self-study programs. A higher percentage of part-time or unemployed RDs participated in self-study programs but not in other similar activities that could be completed at home. The same shift was not seen in DTRs, their employment status did not have the same association with self-study in DTRs as it did in RDs. This could be due to the non-availability of desired topics in these modes of activities for DTRs or the affordability of self-study programs.

Job Function as it Effects Attendance of CPE Activities

No other research could be found that examined CPE activities as they related to job function. Several categories of job functions of both professional groups were found to be associated with certain types of CPE activities (Tables 11 and 12). For example, RDs working in health and wellness participated in more workshops and conducted more professional reading than all other RDs. Conversely, those who were employed in foodservice attended seminars and exhibits more than other professions but had lower attendance at lectures and conducted less professional reading than all others. Clinical

RDs participated in lectures, seminars, and self-study programs more than all other RDs, while DTRs employed in clinical services only had a higher percentage attendance at seminars over all other DTRs. These differences by job function could be due to the types of topics offered in the specific CPE activity modes, and whether the topic applies to a certain job function. An RD employed in foodservice might have a low attendance at lectures because the only lectures available to her were topics related to clinical dietetics.

Effect of Focus of CPE on CPE Attendance

The present study found that depending on focus of CPE, both RDs and DTRs desired types or modes of CPE in different areas (Tables 13 and 14). For instance, when compared to all other areas of focus for CPE, a higher percentage of RDs who wanted CPE in clinical nutrition attended seminars and self-study programs, but RDs who wanted CPE in the area of business/communication had a higher percentage attendance at experiential skill development and exhibits. Among DTRs the only significant results were that DTRs wanting CPE activities in management attended workshops and seminars more than all others. As with job function, attendance at certain CPE activities when based on focus of CPE could be due to the topics offered in each CPE activity mode.

Effect of Area of Residence on Ability to Find CPE Activities

While the ability of DTRs in the present study to find CPE activities was not influenced by area of residence, RDs who lived in rural areas were less likely to find CPE activities that were geographically accessible (Tables 15 and 16). This might be due to

the fact that seminars and workshops are commonly held in major metropolitan areas. This means a rural RD has to take time off from work, and spend additional money on travel and lodging. It is unclear why rural DTRs were not equally effected.

Effect of Employment Status on Ability to Find CPE

While the employment status of RDs and DTRs affected attendance at certain CPE activities it did not affect their overall ability to find suitable CPE activities (Tables 17 and 18). One reason might be that unemployed RDs used self-study programs to maintain their registration and that may make geographic accessibility a non-issue where employment status is concerned. It is difficult to tell from the data in the present study what mode of CPE unemployed DTRs are using to maintain their registration because they reported participating in few CPE activities (Table 10). Another possible reason employment status did not affect ability to find CPE is that maintenance of registration is dependent upon completion of CPE hours so the dietetics professionals made sure they found CPE activities to meet the required number of hours.

Effect of Job Function on Ability to Find CPE

Job function had an impact on the ability of RDs to find CPE activities but it did not significantly affect DTRs (Tables 19 and 20). Food service and sales/marketing RDs could not find CPE activities that met their learning needs as well as all other RDs. But public health/wellness and research/higher education RDs indicated they were able to find activities to meet their learning needs more than all other areas of job function. No

RDs or DTRs in any job function had a difference in ability to find CPE activities that were affordable or fit their schedules but research/higher education RDs were able to find more geographically accessible CPE activities than any other job function. This might be due to the fact that many research/higher education professionals receive support from their institutions to attend CPE or their university or research center sponsors CPE activities. Again these findings would indicate that topical availability of CPE activities varies according to job function.

Effect of Job Function on Area of Focus for CPE

Area of job function was found to have an effect on focus for CPE of RDs and DTRs (Tables 21 and 22). Clinical services RDs and DTRs had a significantly greater desire for CPE in the area of clinical nutrition but did not want activities in any other area. Food services RDs and DTRs wanted CPE in the areas of food services and clinical nutrition, but only food services RDs had a significant desire for management CPE. This might be because food services RDs have greater opportunities for management than DTRs. Some management or food service RDs may also have clinical responsibilities. It was also interesting to note that while several job functions matched with a corresponding focus of CPE, for example RDs and DTRs in clinical services preferred CPE in clinical nutrition, there were job functions that did not match to any area of focus for CPE. For instance, research/ higher education RDs did not have a significant preference for CPE activities in research; the reasons for this are unclear. Nutrition information RDs did not have a significant preference in any area of focus. While there was no specific area of focus for nutrition education DTRs with this same job function

had a significant desire for CPE activities in the areas of clinical nutrition and community nutrition while nutrition information RDs did not desire CPE in these areas.

Conclusions

The objectives of this study were to compare RDs and DTRs in the guidance they used to select CPE activities, the CPE activities they attended or were likely to attend, the effect of the CPE activities attended on their learning needs, their ability to find CPE activities, and the effect of demographics on their choice of CPE activities. Conclusions were made for each hypothesis.

Hypothesis One

There is no difference in the guidance received by RDs and DTRs when deciding on which CPE activities to attend. Hypothesis one was rejected because significantly more RDs than DTRs indicated they needed no guidance in selecting CPE activities, while significantly more DTRs than RDs requested guidance from all areas except the family.

Hypothesis Two

There is no difference between RDs and DTRs in the type of CPE activities attended. Hypothesis two was rejected because significantly higher percentages of RDs than DTRs attended lectures, workshops, exhibits, professional leadership, and poster sessions, and participated more in self-study programs, courses by satellite, and professional reading.

Hypothesis Three

There is no difference between RDs and DTRs in the ability of CPE activities to improve practice. We failed to reject hypothesis three because there was no significant difference between RDs and DTRs in their perception of the effect of the CPE activities they attended on improving their practice.

Hypothesis Four

There is no difference between RDs and DTRs in the availability of CPE activities. We failed to reject hypothesis four because there was no significant difference between RDs and DTRs in their ability to find CPE activities.

Hypothesis Five

There is no difference in the types of CPE activities RDs and DTRs are likely to attend. Hypothesis five was rejected because RDs were more likely than DTRs to attend CPE activities of an academic/experiential nature when compared between groups. RDs were more likely to attend technological modes of activities and DTRs were more likely to attend academic/experiential types of activities.

Hypothesis Six

Employment status has no effect on the types of CPE activities attended by RDs and DTRs. Hypothesis six was rejected because RDs with different employment status selected different types of CPE activities but there were few differences among DTRs.

Hypothesis Seven

Job function has no effect on the types of CPE activities attended by RDs and DTRs. Hypothesis seven was rejected because several job functions were found to have a significantly higher or lower percentage attendance at specific modes of CPE activities.

Hypothesis Eight

Area of focus of CPE has no effect on the ability of RDs and DTRs to find CPE activities. Hypothesis eight was rejected because focus of CPE affected the types of activities attended by those RDs desiring CPE in every area except community nutrition. Also focus of CPE effected the modes of CPE activities attended by DTRs desiring CPE in the areas of clinical nutrition, management, and research.

Hypothesis Nine

Area of residence does not effect the ability of RDs and DTRs to find adequate CPE. This hypothesis was partially rejected because RDs who lived in rural areas were not able to find geographically accessible CPE activities as well as those RDs who lived in suburban or urban areas while there were no differences among DTRs.

Hypothesis Ten

Employment status does not affect the ability of RDs and DTRs to find adequate CPE. We failed to reject hypothesis ten because employment status was not found to have a significant effect on ability to find meaningful CPE activities.

Hypothesis Eleven

Job function does not effect the ability of RDs and DTRs to find adequate CPE. Hypothesis eleven was rejected when it was found that for RDs there were significant differences between job function and ability to find CPE activities that met learning needs and were geographically accessible. However, there were no significant differences among DTRs, thus we failed to reject this hypothesis for DTRs.

Hypothesis Twelve

Area of focus for CPE does not differ by job function for RDs and DTRs. Hypothesis twelve was rejected because it was found that job function had a significant effect on the CPE focus of RDs and DTRs.

Implications

This study showed that RDs and DTRs do not conduct their professional development in similar ways. RDs and DTRs differ in the guidance they need in selecting CPE activities and the modes of CPE activities they attend. Those who work with DTRs as well as state, district and local associations need to be ready to provide more guidance with CPE activities. CPE vendors should take the differences between RDs and DTRs that were found in the present study seriously. RDs and DTRs should not be seen as the same when it comes to CPE needs. Although certain modes of CPE activities were not specified as being indicated for certain groups of dietetics professionals there was a tendency for certain modes to be preferred by one group over another. If providers of certain modes of CPE activity begin to target certain groups of

dietetics professionals this might further enhance their ability to meet the learning needs of RDs and DTRs. Vendors should also note that there are specific groups of dietetics professionals who might not be having their CPE needs met. Geographic accessibility is an important consideration for anyone who provides CPE activities. If dietetics professionals are going to be expected to take on more responsibility for identifying CPE activities to meet their learning needs, then adequate opportunities must be made available to them. This information is especially important in light of the changes occurring in CPE for dietetics professionals beginning June 1, 2001.

Recommendations for Further Research

Certainly more research needs to be done in this area. More specific research into how job function, area of practice, and focus of CPE relate to CPE can be done. It is also unclear if ability to find meaningful CPE activities differs by area of the country or even on a state to state basis. Two groups that should be further evaluated are RDs and DTRs in rural areas. There are specific questions that remain unanswered. It is unknown what unemployed DTRs are doing to maintain their registration. It is also unclear what specific assistance is needed by DTRs to select CPE activities. It would also be valuable to learn how providers of CPE activities can present technological methods so they are more attractive to DTRs. Focus groups conducted with these groups on the state and district level as well as with dietetics practice groups would further assess their CPE needs.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 04-01-98 **IRB #: HE-98-089**

Proposal Title: NATIONAL PILOT TEST OF THE PROFESSIONAL DEVELOPMENT 2001 PROCESS MODEL

Principal Investigator(s): Kathryn S. Keim, Christine A. Johnson

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD.
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:
The only problem is on the consent form; Christine Johnson's entire phone number should be listed.

Signature: _____
Chair of Institutional Review Board

Date: April 2, 1998

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL FOR CONTINUATION

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

DATE: 04-01-98 **IRB #: HE-98-089A**

Proposal Title: NATIONAL PILOT TEST OF THE PROFESSIONAL DEVELOPMENT 2001 PROCESS MODEL

Principal Investigator(s): Kathryn S. Keim, Christine A. Johnson

Reviewed and Processed as: Modification & Continuation

Approval Status Recommended by Reviewer(s): Approved

Signature. Carol Olson Date: January 28, 1999

Carol Olson, Director of University Research Compliance

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX C

CDR STUDY OBJECTIVES

ADA/CDR Survey
Match of Objectives to Final Survey Questions
Final – June 18, 1998

Objective	Questions on Survey
1. Determine participants' expectations (awareness, understanding, perceptions) of the *Professional Development Portfolio* recertification system.	1, 2, 3, 4, 5, 6 a-w, 7k
2. Determine participants' perceptions of how well the *Portfolio* embodies the aim and goals of the recertification process specified in Section II of the RFP.	6 a-w, 7 k
3. Determine participants' perceptions about using professional self-reflection processes.	8, 10 a-j
4. Determine participants' perceptions about learning needs assessment processes.	12, 15 a-h
5. Identify professional self-reflection strategies used by participants.	11
6. Identify learning needs assessment strategies used by participants.	14
7. Identify effectiveness of professional self-reflection steps in assisting participants to complete their learning plans.	10 i
8. Identify effectiveness of learning needs assessment steps in assisting participants to complete their learning plans.	15 h
9. Determine types of learning plans developed by practitioners.	16, 18, 19
10. Determine types of CPE activities attended.	21 a-nn
11. Determine participants' perceptions of how well the process impacted the transfer of learning to practice.	22 c, d, e, f, 23

Objective	Questions on Survey
12. Identify how CDR can provide feedback to providers of professional development activities to assist in targeting their efforts.	24, 25, 26
13. Evaluate how well professional development activities help participants meet identified career goals.	22 b
14. Evaluate how well continuing education activities help participants meet learning needs.	21 a-nn, 22 a, g
15. Evaluate completion practices of participants.	27, 28
16. Evaluate how well the *Portfolio* forms work. (Are they user-friendly? How can they be improved?)	29, 30, 31
17. Evaluate the relationship of learning needs to meeting career goals.	22 a. b
18. Determine where participants received assistance to conduct professional development using the *Portfolio*.	9, 13, 17, 20,
19. Determine participants' attitudes toward professional development.	7a - j

APPENDIX D

COVER LETTER AND SURVEY INSTRUMENT

OKLAHOMA STATE UNIVERSITY

Bureau for Social Research
306B Human Environmental Sciences
Stillwater, Oklahoma 74078-6117
405-744-5054 FAX 405-744-7113

OSU

July 31, 1998

Dear Registered Dietitian and Dietetic Technician, Registered

The Commission on Dietetic Registration (CDR) needs your help. In the past month you should have received a survey in the mail regarding the implementation of a professional development system for recertification called the *Professional Development Portfolio*. CDR has identified you as a potential respondent, and we have not received your completed survey. Your input is vital in refining the process for recertification.

CDR has selected Oklahoma State University's Bureau for Social Research as the contractor conducting this pilot test. Kathryn S. Keim, PhD, RD, LD and Christine A. Johnson, PhD are the co-investigators.

- As a selected participant, you are requested to complete the enclosed baseline survey. It will take approximately 20 minutes to complete and will assess your perceptions, knowledge, and attitudes towards professional development.
- After the baseline survey is completed, you will be randomly assigned to the control or intervention group. The control group will continue using the current process of recertification of continuing education hour reporting. The intervention group will use the *Portfolio* for recertification. Any hours accrued by the control or intervention group will be counted toward CDR recertification.
- Both groups will complete two more surveys during the time of the pilot test, which lasts approximately two years. The surveys will determine issues related to professional development in general and the *Portfolio* specifically. You will receive Survey #2 in about a year and Survey #3 approximately a year after that.
- The intervention group will receive the forms and procedures to implement the *Portfolio*.

Your responses will be **kept confidential**. The number written on the survey enables us to track the responses and will **not** be used for identification purposes. CDR will receive only aggregate data results.

Please return the enclosed baseline survey and a **SIGNED** consent form in the enclosed prepaid self-addressed envelope to the Bureau for Social Research at Oklahoma State University, by **August 19, 1998**.

If you have any questions regarding the survey or need another copy, please contact the following persons:

Dr. Kathryn S. Keim at 405-744-8293 or

Dr. Christine A. Johnson at 405-744-6701

Thank you for volunteering to participate! Your input is imperative to evaluate and help refine the new *Professional Development Portfolio*.

Sincerely,

Kathryn S. Keim

Kathryn S. Keim, PhD, RD/LD
Assistant Professor, Nutritional Sciences

Christine A. Johnson

Christine A. Johnson, PhD
Director, Bureau for Social Research

Bringing Dreams to Life

The Campaign for OSU

Your Opinion of Professional Development

Department of Nutritional Sciences and
Bureau for Social Research
Oklahoma State University

Professional Development Portfolio Survey

Subject Number: _____

1. The new *Professional Development Portfolio* recertification system is proposed by the Commission on Dietetic Registration (CDR) for Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs) to maintain registration and keep up to date with new knowledge in the field. My awareness of the portfolio is ... (Circle one number.)

   1 NOT AWARE
   2 SOMEWHAT AWARE
   3 VERY AWARE

2. My understanding of how to use the *Professional Development Portfolio* to maintain registration and keep up to date is ... (Circle one number.)

   1 DO NOT UNDERSTAND
   2 UNDERSTAND SOMEWHAT
   3 UNDERSTAND VERY WELL

3. During the development of the *Professional Development Portfolio* did you send comments to CDR? (Circle one number.)

   1 NO
   2 YES

4. Have you attended a workshop that dealt with how to use the *Professional Development Portfolio*? (Circle one number.)

   1 NO
   2 YES

5. I know exactly what to do when I need to start using the *Professional Development Portfolio* to maintain my registration status. (Circle one number.)

   1 NO
   2 SOMEWHAT
   3 YES

Question 6 is to determine your perceptions of the Professional Development Portfolio. Please indicate whether you STRONGLY AGREE or SA (4), AGREE or A (3), DISAGREE or D (2), or

STRONGLY DISAGREE or SD (1) with the following series of statements. You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

6. I perceive the Professional Development Portfolio to maintain registration and keep up to date as one that...

Statement	SA	A	D	SD	DK
a. is easy to use.	4	3	2	1	0
b. is expensive.	4	3	2	1	0
c. promotes lifelong learning.	4	3	2	1	0
d. is confusing.	4	3	2	1	0
e. will improve my practice skills.	4	3	2	1	0
f. will meet my educational needs.	4	3	2	1	0
g. provides for periodic reassessment.	4	3	2	1	0
h. aids my professional development.	4	3	2	1	0
i. is accountable.	4	3	2	1	0
j. is accessible.	4	3	2	1	0
k. is punitive.	4	3	2	1	0
l. helps me determine my career goals.	4	3	2	1	0
m. helps me attain my career goals.	4	3	2	1	0
n. is measurable.	4	3	2	1	0
o. is valued by my supervisor.	4	3	2	1	0
p. is valued by me.	4	3	2	1	0
q. is valued by my clients.	4	3	2	1	0
r. is affordable.	4	3	2	1	0
s. can be managed by CDR.	4	3	2	1	0
t. can be managed by me.	4	3	2	1	0
u. is easy to understand.	4	3	2	1	0
v. takes a long time to complete.	4	3	2	1	0
w. will require random audits to ensure accountability.	4	3	2	1	0

Question 7 is to determine your opinion regarding professional development. Please indicate whether you STRONGLY AGREE or SA (4), AGREE or A (3), DISAGREE or D (2), or STRONGLY DISAGREE or SD (1) with the following series of statements. You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

7. Professional development ...

Statement	SA	A	D	SD	DK
a. is important.	4	3	2	1	0
b. is difficult to accomplish.	4	3	2	1	0
c. is something I have always done.	4	3	2	1	0
d. needs to be done to ensure competency.	4	3	2	1	0
e. is something I have always enjoyed doing.	4	3	2	1	0
f. needs to be mandated by the professional organization.	4	3	2	1	0
g. needs to be done to protect the public.	4	3	2	1	0
h. is expensive.	4	3	2	1	0
i. takes a lot of time.	4	3	2	1	0
j. is difficult to do because I can't find the right continuing professional education activities.	4	3	2	1	0
k. is something that must be randomly audited to ensue accountability.	4	3	2	1	0

Professional Self-Reflection

Professional self-reflection is the process of reviewing experiences to learn and gain insight in preparation for future experiences and learning.

8. During the last five years did you conduct professional self-reflection? (Circle one number.)

   1 NO, If you DID NOT, **go to question 13**.
   2 YES

9. While reflecting on my career goals, I received guidance from ... (Circle all that apply.)

   a. CDR staff.
   b. *Professional Development Portfolio* Guide.
   c. literature about career planning.
   d. a professional colleague.
   e. my supervisor/professor.
   f. career planning workshops.
   g. my family.
   h. I did not need guidance.

Question 10 is to determine how you felt when conducting your **professional self-reflection** to determine your career goals. Please indicate whether you STRONGLY AGREE or SA (4), AGREE or A (3), DISAGREE or D (2), or STRONGLY DISAGREE or SD (1) with the following series of statements. You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

10. When doing professional self-reflection in order to determine my career goals, I felt...

Statement	SA	A	D	SD	DK
a. confident.	4	3	2	1	0
b. I knew what I was doing.	4	3	2	1	0
c. it was worth doing.	4	3	2	1	0
d. it was easy to do.	4	3	2	1	0
e. I needed more guidance.	4	3	2	1	0
f. confused.	4	3	2	1	0
g. it took a short time to do.	4	3	2	1	0
h. it was an effective way to determine my overall career goals.	4	3	2	1	0
i. it was an easy way to determine career goals.	4	3	2	1	0

11. Below is a list of strategies that could be used to establish career goals. Circle all that you used to determine your career goals. (Circle all that apply.)

a. Determined my professional strengths and weaknesses.
b. Worked with a mentor/sponsor.
c. Determined professional opportunities available.
d. Determined where I want to be in 5 years.
e. Matched my career goals with the needs of my work place.
f. Determined what I enjoy doing.
g. Determined what career would fit in with family needs.
h. Considered the needs of my community.
i. Considered the external factors or trends that affect my professional practice.
j. Other (Please specify _____).

Learning Needs Assessment

Learning needs assessment is the process of collecting and evaluating data concerning one's skills and knowledge to determine individual strengths and weaknesses.

12. Did you conduct a learning needs assessment? (Circle one number.)

1 NO, If you DID NOT, **go to question 16**.
2 YES

13. While conducting my learning needs assessment, I received guidance from... (Circle all that apply.)

a. CDR staff.
b. *Professional Development Portfolio* Guide.
c. literature about career planning.
d. a professional colleague.
e. my supervisor/professor.
f. career planning workshops.
g. my family.
h. I did not need guidance.

14. I used the following formal learning needs assessment tools. (Circle all that apply.)

a. CDR Learning Needs Assessment tool
b. My employer's performance assessment and objectives
c. CDR self-assessment modules
d. CDR specialty practice simulations
e. ADA Dietetic Practice Group learning needs assessment tools
f. Other professional assessment instrument (Please specify instrument used.)
_____

Question 15 is to determine how you felt when conducting your **learning needs assessment** to determine your educational needs to improve practice. Please indicate whether you STRONGLY AGREE or SA (4), AGREE or A (3), DISAGREE or D (2), or STRONGLY DISAGREE or SD (1) with the following series of statements. You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

15. When doing an assessment of my learning needs to improve my practice; I felt ... (Circle one number for each statement.)

Statement	**SA**	**A**	**D**	**SD**	**DK**
a. confident.	4	3	2	1	0
b. I knew what I was doing.	4	3	2	1	0
c. it is worth doing.	4	3	2	1	0
d. it is easy to do.	4	3	2	1	0
e. I needed more guidance on how to do this	4	3	2	1	0
f. confused.	4	3	2	1	0
g. it took too much time.	4	3	2	1	0
h. it was an effective way to determine what continuing professional education activities I would need to improve my practice.	4	3	2	1	0

Learning Plan Development

A **learning plan** is a formalized plan to meet professional goals and learning needs identified through a learning needs assessment.

16. Did you develop a learning plan? (Circle one number.)

1 NO, If you DID NOT, **go to question 20.**
2 YES

17. While preparing my learning plan, I received guidance from... (Circle all that apply.)

a. CDR staff.
b. *Professional Development Portfolio* Guide.
c. literature about career planning.
d. a professional colleague.
e. my supervisor/professor.
f. career planning workshops.
g. my family.
h. I did not need guidance.

18. The learning plan I developed is best described by the following statement. (Circle one number.)

1 Focused on a specific content area (e.g. gerontology, renal, or cardiovascular).
2 Focused on a specific area of practice (e.g. clinical, management, community).
3 More broad, based on individual needs and goals.
4 Other (Please describe _____).

19. The approximate length of time it took me to develop my learning plan was... (Fill in the blank.)

_____ **HOURS**

Continuing Professional Education Activities

20. While deciding on the continuing professional education activities to attend, I received guidance from... (Circle all that apply.)

a. CDR staff.
b. Professional Development Portfolio Guide.
c. literature about career and skill enhancement.
d. a professional colleague.
e. my supervisor/professor.
f. career and skill enhancement workshops.
g. my family.
h. I did not need guidance.

21. Please read the following list of potential continuing professional education activities (CPE). In each category, enter the number of CPE clock hours you attended in the past 12 months. Circle NO or YES to answer if the activity met your learning needs.

CPE Activities	CPE Hours (#)	Met My Learning Needs
Lectures	a.	b. 1 NO 2 YES
Workshops	c.	d. 1 NO 2 YES
Journal clubs and study groups	e.	f. 1 NO 2 YES
Seminars	g.	h. 1 NO 2 YES
Case presentations	i.	j. 1 NO 2 YES
Video, audio, and computer based materials	k.	l. 1 NO 2 YES
Self-study programs	m.	n. 1 NO 2 YES
Internet, Web based course	o.	p. 1 NO 2 YES
Courses by satellite	q.	r. 1 NO 2 YES
Distance learning	s.	t. 1 NO 2 YES

21. Continued

Please read the following list of potential continuing professional education activities (CPE). In each category, enter the number of CPE clock hours you attended in the past 12 months. Circle NO or YES to answer if the activity met your learning needs.

CPE Activities	CPE Hours (#)	Met My Learning Needs
Experiential skill development (e.g. culinary skills, physical assessment training)	u.	v. 1 NO 2 YES
Certificate programs	w.	x. 1 NO 2 YES
Certification (e.g. specialist, CDE)	y.	z. 1 NO 2 YES
Academic coursework	aa.	bb. 1 NO 2 YES
Exhibits	cc.	dd. 1 NO 2 YES
Professional leadership	ee.	ff. 1 NO 2 YES
Professional reading	gg.	hh. 1 NO 2 YES
Posters	il.	jj. 1 NO 2 YES
Residency and fellowship programs	kk.	ll. 1 NO 2 YES
Sponsored independent learning (e.g. mentoring)	mm.	nn. 1 NO 2 YES

Question 22 is to determine the relationship among continuing professional education activities, learning needs, career goals, and transfer of skills to practice. Please indicate whether you STRONGLY AGREE or SA (4), AGREE or A (3), DISAGREE or D(2), or STRONGLY DISAGREE or SD (1) with the following series of statements. You may circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

22. The continuing professional education activities I completed over the past 12 months...

Statement	**SA**	**A**	**D**	**SD**	**DK**
a. met my learning needs.	4	3	2	1	0
b. allowed me to move closer to meeting my career goals.	4	3	2	1	0
c. increased my competence to practice.	4	3	2	1	0
d. increased my practice skills.	4	3	2	1	0
e. allowed me to maintain my competence to practice.	4	3	2	1	0
f. allowed me to maintain my practice skills.	4	3	2	1	0
g. increased my knowledge.	4	3	2	1	0

23. Based on the continuing professional education activities I attended over the past 12 months, my practice skills in the following areas improved. List several practice skills and mark with an X your beginning level of proficiency **AND** indicate with a √ your achieved level of proficiency after professional development activities.

Practice Skill	Level of Proficiency Achieved (√) Indicate with an X your beginning level of proficiency. Indicate with a √ your achieved level of proficiency. Novice — Expert
Example: Nutrition assessment	•—x———————√———•
a.	b. •——————————•
c.	d. •——————————•
e.	f. •——————————•

Question 24 is to determine adequacy of continuing professional education (CPE) activities in your content area to meet your learning needs and career goals. Please indicate whether you STRONGLY AGREE or SA (4), AGREE or A (3), DISAGREE or D (2), or STRONGLY DISAGREE or SD (1) with the following series of statements. You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

24. Over the past 12 months I was able to find CPE activities that ...

Statement	**SA**	**A**	**D**	**SD**	**DK**
a. met my learning needs.	4	3	2	1	0
b. were affordable.	4	3	2	1	0
c. were geographically accessible.	4	3	2	1	0
d. fit my schedule.	4	3	2	1	0

25. Below is a list of information that could be given to state associations and other providers to help them design continuing professional education activities to meet your needs. This type of information will be given to providers as group data, not individual data. Circle all that you think should be given to the providers.

a. Professional goals
b. Specific learning needs (knowledge and skills)
c. Level of proficiency desired
d. Content area of learning needs (e.g. gerontology, renal or CVD)
e. Area of practice of learning needs (e.g. clinical, mgt, community)

26. Please read the following list of potential continuing professional education (CPE) activities. For each category rate on a scale of 1 to 5, with 1 = least likely to attend and 5 = most likely to attend, how likely you are to attend each type of activity.

	CPE Activity	Least likely to attend				Most likely to attend
a.	Lectures	1	2	3	4	5
b.	Workshops	1	2	3	4	5
c.	Journal clubs and study groups	1	2	3	4	5
d.	Seminars	1	2	3	4	5
e.	Case presentations	1	2	3	4	5
f.	Video, audio, and computer based materials	1	2	3	4	5
g.	Self-study programs	1	2	3	4	5
h.	Internet, Web based course	1	2	3	4	5
i.	Courses by satellite	1	2	3	4	5
j.	Distance learning	1	2	3	4	5
k.	Experiential skill development	1	2	3	4	5
l.	Certificate programs	1	2	3	4	5
m.	Certification	1	2	3	4	5
n.	Academic coursework	1	2	3	4	5
o.	Exhibits	1	2	3	4	5
p.	Professional leadership	1	2	3	4	5
q.	Professional reading	1	2	3	4	5
r.	Posters	1	2	3	4	5
s.	Residency and fellowship programs	1	2	3	4	5
t.	Sponsored independent learning	1	2	3	4	5

If you **DID NOT** use the *Professional Development Portfolio* forms **go to question 32**.

The following set of questions are for those who actually used the *Professional Development Portfolio* forms.

27. Place an X by the *Professional Development Portfolio* forms you used and filled out completely during the past 12 months. (Mark all that apply.)

a. _____ Form 1 - Step One: Professional Self-reflection
b. _____ Form 2 - Step Two: Learning Needs Assessment
c. _____ Form 3 - Step Three: Learning Plan
d. _____ Form 4 - Step Four: Implementation of Learning Plan: Learning Activities Log
e. _____ Form 5 - Step Five: Evaluation of Learning Plan Outcomes

28. Place an X by the *Professional Development Portfolio* forms you used, filled out, and submitted to CDR as part of your Professional Development Portfolio. (Mark all that apply.)

a. _____ Form 3 - Step Three: Learning Plan
b. _____ Form 4 - Step Four: Implementation of Learning Plan: Learning Activities Log
c. _____ Form 5 - Step Five: Evaluation of Learning Plan Outcomes

29. Use the following scale to indicate how user-friendly the following *Professional Development Portfolio* forms were in determining professional development needs and completing the whole professional development process. Please indicate whether the forms are VERY Easy to Use or VEU (3), Easy to Use or EU (2), and Not Easy to Use or NEU (1). You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

Statement	VEU	EU	NEU	DK
a. Form 1 – Professional Self-reflection	3	2	1	0
b. Form 2 – Learning Needs Assessment	3	2	1	0
c. Form 3 – Learning Plan	3	2	1	0
d. Form 4 – Implementation of Learning Plan: Learning Activities Log	3	2	1	0
e. Form 5 – Evaluation of Learning Plan Outcomes	3	2	1	0

30. For each form you found not easy to use or NEU, how could the form be changed to make it easier to use?

31. Use the following scale to indicate how effective the *Professional Development Portfolio* tools were in managing your professional development. Please indicate whether the steps are Very Effective or VE (3), Effective or E (2) or Not Effective or NE (1). You may also circle 0 for DON'T KNOW or DK. (Circle one number for each statement.)

PDP Tools	VE	E	NE	DK
a. Step One: Professional Self-reflection	3	2	1	0
b. Step Two: Learning Needs Assessment	3	2	1	0
c. Step Three: Learning Plan	3	2	1	0
d. Step Four: Implementation of Learning Plan: Learning Activities Log	3	2	1	0
e. Step Five: Evaluation of Learning Plan Outcomes	3	2	1	0

32. My age in years is... (Circle one number.)

1 20 - 30
2 31 - 40
3 41 - 50
4 51 - 60
5 61 - 70
6 ABOVE 70

33. My gender is... (Circle one number.)

1 FEMALE
2 MALE

34. My race/ethnic origin is... (Circle one number.)

1 White (not Hispanic)
2 Black (not Hispanic)
3 Hispanic
4 Asian or Pacific Islander
5 American Indian, Alaskan Native, or Hawaiian Native
6 Prefer not to disclose

35. I am credentialled as an... (Circle one number.)

1 RD
2 DTR

36. The area I live is best described as... (Circle one number.)

1 RURAL
2 SUBURBAN
3 URBAN
4 OUTSIDE THE UNITED STATES

37. In what year were you first registered? (Fill in the blank.)

_____ YEAR

38. Licensure is mandatory in the state in which I practice. (Circle one number.)

1 NO
2 YES

39. My employment status is best described as ... (Circle one number.)

1 FULL-TIME
2 PART-TIME
3 NOT EMPLOYED, **Go to question 42**.

40. Which of the following best describe(s) the setting(s) in which you spend your work time? (Please circle all settings where you spend at least 20% of your work time.)

a. Acute-care facility
b. Long-term care facility
c. Home care agency
d. School foodservice operation
e. Commercial foodservice operation
f. Community/public health facility or organization
g. Ambulatory/outpatient clinic or office
h. Pharmaceutical company
i. Manufacturer/distributor/retailer
j. College/university foodservice
k. College/university faculty
l. HMO, physician or other health care provider
m. Private practice/primarily individual client counseling
n. Consultation, primarily to health care facilities
o. Consultation, primarily to other organizations/industries/media
p. Other (Please specify_____)

41. Please circle the job function(s), which best describe(s) where you spend at least 20% of your work time. (Circle all that apply.)

a. Clinical services
b. Foodservices
c. Public/commercial foodservices
d. Public health/community nutrition
e. Wellness/disease prevention
f. Research
g. Sales/marketing or product development
h. Nutrition information/communication
i. Higher education
j. Other (Please specify _____)

42. Please circle the highest degree earned. (Circle one number.)

1 Associate degree(s)
2 Bachelor's degree(s)
3 Master's degree(s)
4 Doctoral degree(s)

43. If you are currently enrolled in school, please indicate the degree program(s) of study. (Circle one number.)

1 Not currently enrolled in school
2 Associate degree(s)
3 Bachelor's degree(s)
4 Master's degree(s)
5 Doctoral degree(s)

44. Please select the area(s) that best describe(s) the focus of your continuing professional education. (Please circle all that apply.)

a. Foodservice
b. Clinical nutrition
c. Community nutrition
d. Foods/food science
e. Business/communication
f. Management
g. Education
h. Research

45. Give your annual gross household income. Annual gross income is the expected income for an entire 12 months of 1998. (Circle one number.)

1 Less than $20,000
2 $20,001 - 30,000
3 $30,001 - 40,000
4 $40,001 - 50,000
5 $50,001 - 60,000
6 $60,001 - 70,000
7 $70,001 - 80,000
8 Over $80,000

Thank you for taking the time to complete the survey!

We welcome any other comments you would like to make about the process of professional development.

APPENDIX E

CONSENT FORM

Consent Form

"I, _____, hereby authorize or direct Dr. Kathryn S. Keim and Dr. Christine A. Johnson, or associates of their choosing, to perform the following procedure."

Procedure.

1. As a selected participant, I will complete a baseline survey that will take approximately 20 minutes, to assess my perceptions, knowledge, and attitudes towards professional development.

2. After the baseline survey is completed, I will be randomly assigned to the control or intervention group. The control group will continue the current process of recertification of continuing education hour reporting. The intervention group will use the *Portfolio* for recertification. Any hours I accrue will be counted toward CDR recertification.

3. Both groups will complete two more surveys during the time of the pilot test, which will span approximately two years. The other two surveys will take approximately 30 minutes to complete. These surveys will determine issues related to professional development in general and the *Portfolio* specifically.

4. The intervention group will receive the forms and procedures to implement the *Portfolio*.

Duration of subject's participation.

Completion of the three surveys will take approximately 1.5 hours. The full length of the pilot test is a little over two years.

Confidentiality of records.

Only subject numbers will be written on the surveys. The key that matches the subject number with the name and address will be kept in a locked file drawer in the investigators' office. All tracking will use subject number, and only group data will appear in any manuscripts. No names will appear in any reports.

Possible discomforts or risks.

There are no discomforts or risks due to participating in the pilot test of the *Professional Development Portfolio*.

Possible benefits for subjects/society.

The information collected and learned from this project will improve the process of professional development that the Commission on Dietetic Registration is implementing. Having effective and knowledgeable registered dietitians and dietetic technicians, registered in the work force is a positive aspect for society.

--OVER--

"This is done as part of an investigation entitled "National Pilot Test of the *Professional Development Portfolio*".

"I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the project director."

I may contact Dr. Kathryn S. Keim at 405-744-8293 or Dr. Christine A. Johnson at 405-744-6701. I may also contact Gay Clarkson, IRB Executive Secretary, 305 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number: (405) 744-5700.

I have read and fully understand the consent form. I sign it freely and voluntarily.

Date: _____. Time: _____(a.m./p.m.)

Signed: _____
Signature of Subject

VITA

Kimberly Ann Williams

Candidate for the Degree of

Master of Science

Thesis: THE CONTINUING PROFESSIONAL EDUCATION ACTIVITIES OF REGISTERED DIETITIANS AND DIETETIC TECHNICIANS, REGISTERED

Major Field: Nutritional Sciences

Biographical:

Personal Data: Born in Bartlesville, Oklahoma, on August 2, 1975, the daughter of Bruce and Ann Williams.

Education: Graduated from Bartlesville High School, Bartlesville, Oklahoma in May 1994; received Bachelor of Science degree in Nutritional Sciences, emphasis in Dietetics from Oklahoma State University, Stillwater, Oklahoma in May 1998. Completed the requirements for the Master of Science degree with a major in Nutritional Sciences at Oklahoma State University in December, 2000.

Experience: Employed as a Graduate Research Assistant by the Oklahoma State University Bureau for Social Research, Oklahoma State University, May 1998 to May 2000, and as a Graduate Research Assistant by the Department of Nutritional Sciences, Oklahoma State University, August 2000 to present.

Professional Memberships: American Dietetic Association; Oklahoma Dietetic Association.