

Continuing Education Needs of
Manitoba Registered Dietitians

by

Janice D. Macdonald

A Thesis

Submitted to the Faculty of Graduate Studies

In Partial Fulfillment of the Requirements for the Degree of
Master of Education

Faculty of Education
University of Manitoba

1987



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Abstract

All active-practising members of the Manitoba Association of Registered Dietitians (n=182) were surveyed to determine their continuing education learning needs and preferences. Responses were received from 95 percent of the eligible membership. The self-administered questionnaire, which was validated and piloted, elicited information about preferred times and locations for continuing education programs, factors affecting participation, employer's contribution to continuing education and the need for further knowledge in 75 topic areas. The topic areas were categorized as nutritional care, behavioral/communicative and managerial sciences. Learning needs were higher for topics in the behavioral/communicative and nutritional care sciences than for topics in the managerial sciences. Those in clinical dietetics showed a preference for the nutritional care science topics while those in administrative dietetics preferred the managerial science topics. Learning needs varied little between urban and non-urban respondents, although their preferences for times and lengths of programs did differ. Respondents generally preferred full day programs held in Winnipeg on Saturdays during October. The major factors affecting participation in continuing education were the topic offered, location and time. Most dietitians received paid time of work and at least some financial contribution from their employers. It is important for learners to be involved in determining their continuing education needs and preferences to enhance the relevance, accessibility and availability of programs.

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Chapter 1

Introduction

Dietetics is a profession in transition as reflected in the many changes that have had a profound impact on it over the past decade (Chernoff, Smutz, Lindsay & Kris-Etherton, 1983). As a result, practice has broadened considerably with many dietitians now practising outside the traditional hospital setting (Calvert, Parish & Oliver, 1982).

One change related to medical and nutritional advances has created a strong need for practitioners to gain new knowledge and develop new competencies to keep up with the demands of their profession. Nutrition is presently recognized as a critical component of disease prevention and treatment and dietitians now play integral roles on health care teams.

Changes in the economic climate have reduced the number of positions available in hospitals forcing dietitians to develop skills in marketing themselves and the profession to industry, government health programs and health maintenance agencies (Cross, Van Horn, Olson & Kamath, 1984). In addition, consumer pressures have increased in recent years demanding that quality professional services be available and delivered on request (Pennington, 1980). Consumers are now more willing to question professionals' competency and are demanding that professionals be held accountable for their actions. In response to the rapidly changing

environment there has been the rise of a substantial continuing education movement (Chernoff et al. 1983).

According to Houle's (1980) classic model of professional education, a relatively short phase of pre-service education ends with certification of competence, which leads to induction into the profession. Granting of professional status is then followed by a lengthy phase of continuing education, which lasts through one's professional lifetime and requires a commitment to lifelong learning. In his emerging model of professional education, Houle (1980) presents an expanded view of continuing education as consisting of not only "maintenance and modernization" but also preparation for induction into new roles and responsibilities, and refresher training. He further suggests that each of these stages of continuing education has distinctly different goals and purposes, which programs must be specifically designed to meet.

The Canadian Dietetic Association's (CDA) commitment to continuing education for its members was reaffirmed in the 1985 Position Paper on Continuing Education (Schwartz, 1985), which stated, "The CDA recognizes the need for and value of continuing education as a means of maintaining and enhancing professional competence" (p. 120).

CDA's Position Paper (Schwartz, 1985) defined continuing education as "...planned, organized learning experiences which build upon basic knowledge obtained in preparation for entry into the profession of dietetics", with the ultimate goal of enhancing professional performance. The Position Paper also acknowledged the

role of provincial dietetic associations in providing continuing education opportunities for dietitians. The Manitoba Association of Registered Dietitians (MARD) emphasizes that "continuing education is an essential part of the life of a professional person and is beyond the basic preparation for the profession" (MARD, 1983, p. 1). MARD's continuing education role is further emphasized in their 1986-87 Strategic Plans which outline four goals for the association, one of which is to "maintain the quality of dietetic practice" as "competency is the essence of professionalism" (MARD, 1986, March, p. 1).

The challenge to providers of continuing professional education is to ensure that their programs are available, accessible, and relevant (Schwartz, 1984).

Liveright's study (cited in Flournory, 1984) contends that continuing education has to be planned, organized and developed on a lifelong basis with the goals of improving professional competency and providing personal enrichment. When there is no plan it is likely that continuing education efforts will be haphazard and counterproductive. When learning needs are recognized and goals established, continuing education strategies may be planned to achieve both personal and professional goals.

Determining needs and setting goals are not easy tasks. People often have difficulty discerning their own needs. However, when one can state what is and what is not desired, the discrepancy between the two can be considered a need (Flournory, 1984).

Stensland (1977) argues that it is essential for learners to assess their own needs. O'Conner (1978) suggests that in diagnosing needs, learners may examine their present level of professional competence, their future goals, and their awareness of issues and trends in the field. Coffing and Hutchinson (1974) further emphasize that before the continuing education process can begin, educational needs have to be identified and specifically defined as to what is lacking and the current status measured in terms of desired status. If the continuing education process does not meet the individual's interests and needs, the individual will become frustrated and swing out of the continuing education process unsatisfied (Houle, 1980).

Assessing learning needs requires a systematic process which involves the learners and occurs regularly. The most common method used to determine needs is a survey but the data collected by such means does not necessarily reflect real learning needs (Koonz, 1978). Chernoff et al. (1983) argue that their model which assesses performance skills, identifies deficiencies and develops practice-oriented continuing education programs targeted at demonstrated need circumvents the limitations of the needs assessment. However, applying this model to assess dietitians' educational needs in only one area of dietetics took two years and representation from six professional groups. Such a time frame is not practical for this study, hence the author is limited to a needs assessment acknowledging inherent limitations.

Since only one province in Canada has explored the learning needs of its provincial dietetic association members (Schwartz, 1986) it seems probable that other provinces have based their continuing education activities on limited needs information. The planners have probably relied on new developments in the art and science of nutrition, the availability of someone knowledgeable and accessible, and the appropriate financial resources to sponsor a desired program (Chernoff et al. 1983).

Certainly studies such as Schwartz's (1986) need to be a part of the continuing education process in order to make programs more useful to practitioners.

The Purpose

To ensure that the providers of continuing professional education to members of MARD plan programs which are available, accessible and relevant, it is critical that the learning needs and preferences of these professionals be identified. This encompasses an analysis of not only needs related to practice, but also the determination of factors affecting participation hence the accessibility and availability of programs.

MARD is the main provider of continuing education for its members and is committed to ensuring that its members are competent as expressed in its Strategic Plans (MARD, 1986, March). The association also has prepared guidelines for continuing education for its members which reflect those of the national association (Schwartz, 1985). These guidelines (MARD, 1983) recommend that members earn 75 points over five years or an average of fifteen

points a year. However, the Points Sub-Committee for the Association's Continuing Education Committee reported that 36 percent of members did not meet these guidelines in 1984-85 (D. Daley, personal communication, October 10, 1985). This could reflect the lack of relevant, accessible and available continuing education events for MARD members.

Statement of Purpose. The purpose of this study was to determine the current learning needs and preferences of active-practising members of MARD who reside in Manitoba for use in planning continuing education programs.

Following the lead of other researchers in the field, topics were categorized as: nutritional care sciences; behavioral, communicative and socio-cultural sciences; and managerial sciences (Burkholder & Eisele, 1984; Cross et al. 1984; Schwartz, 1986; Vanderveen & Hubbard, 1979).

In determining dietitians' preferences, several areas were considered including location and timing of continuing education programs, and factors affecting participation in continuing education. For those who have been or are employed, their employer's contributions to their continuing education and their expectations of the same also were assessed.

In order to develop a profile of Manitoba dietitians and determine relationships between such factors as area of professional responsibility and learning needs, pertinent demographic data were collected.

Study Questions. In determining demographic data and assessing learning needs and preferences of active-practising registered dietitians in Manitoba, several questions were asked:

A. General Information about Manitoba Dietitians

a) What is the age, year of undergraduate degree, employment status, area of professional responsibility or interest and number of years employed of dietitians?

b) To what professional organizations do dietitians belong?

c) Will respondents to the questionnaire generally be those who meet MARD's continuing education guidelines?

B. Continuing Education Profile

a) How do dietitians generally find out about continuing education programs?

b) What factors generally influence the dietitians' participation in continuing education programs (e.g., location, time, cost, family support, employer support, topics offered, availability of child care and continuing education credits available) and do those factors vary with the dietitians' location in Manitoba?

c) For those who were/are employed, how did/does their employer contribute to their continuing education and what were/are their expectations of the same?

d) What generally is the preferred time, length and location for continuing education programs and do these preferences vary with the dietitians' location within Manitoba?

C. Continuing Education Learning Needs

a) What are the dietitians' learning needs in the categories of nutritional care sciences; behavioral, communicative, socio-

cultural sciences; and managerial sciences and do these needs vary with the dietitians' location or area of professional responsibility?

Delimitations. This study is limited to those dietitians registered with MARD during 1985 to 1986 who reside in Manitoba and who are not retired or honorary members. According to the Registered Dietitians Act (MARD, 1981), an honorary member is not permitted to practise as a registered dietitian.

Conceptual Framework

Most of the research related to dietetic education has been concerned with academic and experiential preparation of the entry-level practitioner, few studies have been concerned with continuing education needs (Burkholder & Eisele, 1984). Of those studies which have identified learning needs using a survey approach, two concerned Canadian dietitians (Schwartz, 1986; Upton & Hedley, 1986); all other studies were of dietitians living in one or more states in the United States of America (Broski & Upp, 1979; Burkholder & Eisele, 1980; Cross et al., 1984; Vanderveen & Hubbard, 1979). Unlike the situation in Canada, continuing education and registration in the American Dietetic Association have been inextricably linked since 1969 (Cross et al. 1984).

A study of the continuing education learning needs of dietitians and factors affecting their participation in continuing education is based on three main concepts. First, that continuing education is important to the maintenance and modernization of the profession (Houle, 1980) and second, that dietitians should be

actively involved in assessing their own learning needs (Stensland, 1977). The third concept is based on the premise that there are a variety of factors affecting the participation of dietitians in continuing education.

Dao (cited in Houle, 1980) presents nine clusters of reasons for non-participation (of the general population) in learning (Figure 1). She found that clusters one and nine were the most influential reasons given for non-participation. Dao's study points out that people do not necessarily reject specific learning activities for simple or transitory reasons. Failure to participate may be caused by a deeply ingrained attitude or group of attitudes that effectively prevent action. The task of securing participation in continuing education may involve not only widespread promotion but also the exploration of deep-seated resistance among the target audience. However, these negative orientations (clusters 3, 4, 5, 6, 7, 8) do not appear to be impeding the participation of most Manitoba dietitians in continuing education since 75 percent of the membership submitted continuing education reports to the Association for 1985 to 1986 (Continuing Education Committee, 1986).

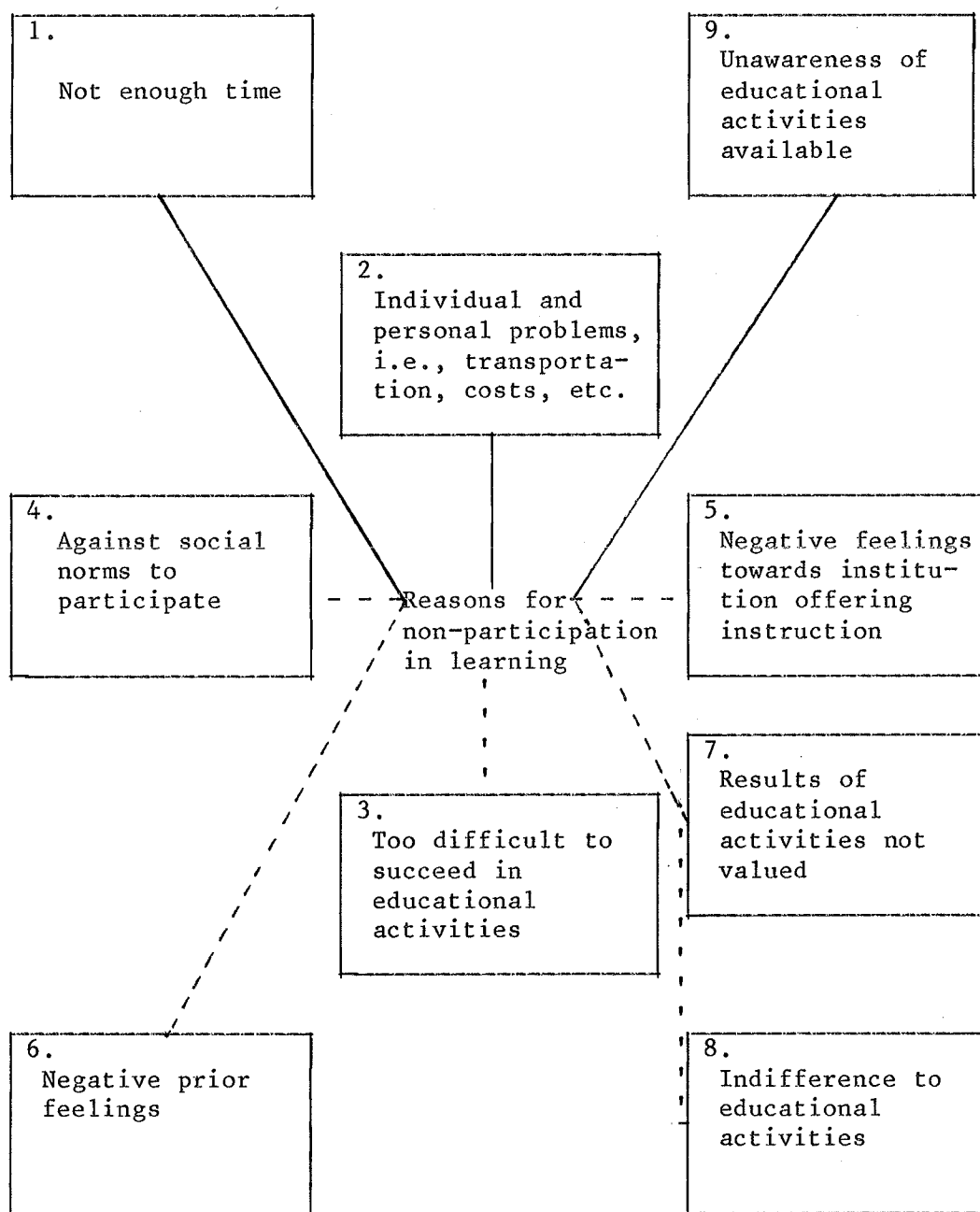


Figure 1: Dao's Nine Clusters of Reasons for Non-participation in Learning.

Although cluster two was the fourth reason given for non-participation, it may more greatly impede continuing learning in the dietetic field than in Dao's study since dietetics is virtually a female profession. In Sorensen's (1979) study of female health workers, he identifies family and household responsibilities as a "concrete" barrier to female participation in adult education. This is due to the work load and time commitment the family involves for many women. The sex-based division of labour ascribing the main part of housework and child care to women could affect women's ability to participate in continuing education. Factors to consider related to family responsibilities include family support, child care (availability and costs), transportation problems, preferred times, and length and location of continuing education (Sorenson, 1979). Smorynski and Parochka (1979) recommend that program planners identify the most convenient times and locations for continuing education programs in conjunction with work conflicts and cost problems as they identified no trends amongst the five allied health professional groups they studied. They also recommended the assessment of employers' support and contributions to continuing education as this too varied greatly amongst the health professionals. This factor could contribute to cost problems and work conflicts.

Since there is only one reported Canadian study which assessed dietitians' continuing education learning needs and preferences and factors affecting their participation (Schwartz, 1986) and since

little consistency in results exists in the American and Canadian studies, it seems clear that the Manitoba picture is unknown. The Canadian study was of members of the British Columbia Dietitians and Nutritionists Association (BCDNA) which is a much larger association than MARD and has a well established network of District Coordinators of Continuing Education. Since 1971, dietitians and nutritionists in BC also have had access to continuing education programs offered by the University of British Columbia's Division of Continuing Education in Nutrition and Dietetics. These programs are planned and sponsored in cooperation with BCDNA (Schwartz & Fielding, 1984). Neither a network of district continuing education coordinators nor a university based division of continuing education for dietitians exists in Manitoba.

Assumptions. The method of a learning needs identification with the focus on knowledge acquisition rests on three important assumptions. The first is that dietitians can adequately identify their learning needs, the second that identification of dietitians' learning needs leads to improved continuing professional education programs and the third that knowledge acquisition leads to enhanced professional performance which is the goal of continuing education (Chernoff et al. 1983; Schwartz, 1986). Assessing the preferences of dietitians related to the time, length and location of continuing education and the factors affecting their participation in continuing education also depends on assumptions one and two

stated above but reflecting preferences and factors rather than learning needs.

Definitions. There are three terms requiring definition or clarification for this study and they are "registered dietitian", "learning need" and "preference".

According to the Registered Dietitians Act (MARD, 1981), the definition of a registered dietitian is "a person whose name is entered in the register and

(i) who is a graduate of a baccalaureate degree program in foods and nutrition from the University of Manitoba or any other university accredited by the board; and

(ii) who completes an internship program or its equivalent in supervised dietetic work experience that is approved by the board and meets the requirements for membership in the association, as set out in the regulations."

A distinction must be drawn between "real" needs versus "wants". Expressed needs are often "wants" and may differ from the overall true needs (Heller & Brown, 1983; Mutch & Wenberg, 1986). A real need is an objective deficiency that actually exists and may or may not be recognized by the one who has the need. Furthermore, identified needs or wants may not be educational needs as these needs are needs that can be satisfied by a learning experience (Koonz, 1978). Hence, the learning needs identified in this study may be more accurately labelled as wants rather than needs, real or otherwise.

A "preference" according to Webster's Third International Dictionary (1981) is the act of preferring which is choosing or estimating above another. In this study it is, therefore, choosing one or more locations, times or lengths of continuing education programs as being above others.

Chapter 2

Review of Related Literature

In order to ensure that future continuing education programs for active-practising dietitians in Manitoba are relevant, accessible and available, it is critical to assess their continuing education needs and preferences.

A review of literature revealed that six studies of dietitians' perceived learning needs and/or preferences had been conducted while one separate study reported the same of five allied health professional groups which included dietitians (Broski & Upp, 1979; Burkholder & Eisele, 1984; Cross et al. 1984; Mutch & Wenberg, 1986; Schwartz, 1986; Upton & Hedley, 1986; Vanderveen & Hubbard, 1979).

All studies of only dietitians used a modified form of Vanderveen and Hubbard's (1979) questionnaire. The studies by Schwartz (1986) and Upton and Hedley (1986) were of Canadian dietitians. The remaining were of dietitians or allied health professionals living in one or more states in the United States of America. In the United States, continuing education has been mandatory for registration in the national association since 1969 (Burkholder & Eisele, 1984). However, in Canada, continuing education is voluntary (except in BC) although specific guidelines are suggested by the national association (Schwartz, 1986).

Other surveys conducted among groups of dietitians or other health professionals studied their opinions about continuing education (Holli, 1982), or factors influencing their participation

in continuing education (Hammer, 1977; Smorynski & Parochka, 1979; Sorensen, 1979).

In the next section, the discussion of dietitians' continuing education needs and preferences as reported in the literature will focus on five major areas: assessing learning needs; blocks to motivation; preferences for continuing education programs; learning needs; and demographic characteristics and continuing education preferences and learning needs.

Assessing Learning Needs

The concept of education beyond formal schooling is not a new one to dietitians. In 1969, the first committee on continuing education in dietetics was formed by the Dietetic Association of Manitoba (now MARD). This planning, however, has lacked a systematic approach. For continuing education to be effective and successful, learners should be involved in planning the programs.

With current budgetary limitations it is critical that continuing education opportunities be carefully tailored to the dietitians' needs. Those responsible for developing and offering continuing education programs can waste time, money and effort if they fail to make their programs accessible or if they do not consider their target group's career needs. By periodically assessing needs, those responsible for formulating continuing education opportunities can more sharply define the subject matter needs.

Learning behavior. According to Sorensen (1979), learning behavior can be understood by the way members of an organization

react to learning possibilities they encounter. Learning can be formal or informal, that is, planned or unplanned, respectively. This discussion is limited to learning behaviors related to formal learning situations such as workshops, lectures and inservices.

According to Sorensen (1979) our learning behavior is influenced by our educational needs as well as our motivation towards education which includes social and psychological factors. The factors that influence learning behavior include previous education, type of job, promotional opportunities, family situation and working conditions.

Motivation. Motivation is a concept used to explain why people do what they do and stems from an individual's self-identified needs and interests. These needs and interests are powerful motivators for an individual to seek continuing education (Hammer, 1977).

Knox (1974) states that an adult's participation in a continuing education program is associated with his or her perception of the following factors:

1. The importance to him [her] of the aspects of his [her] life to which the program relates.
2. The extent to which he [she] wants to increase his [her] competencies in relation to that particular aspect of his [her] life.
3. The extent to which education is seen as an effective way to increase his [her] competencies.

4. The fit between his [her] life style and the anticipated patterns of program participation.
5. The balance between the anticipated benefits and the anticipated cost of participation.
6. The external sources of encouragement. (p. 19)

The amount of motivation is related to the extent to which the individual sees the continuing education process relating to his/her needs and interests. Adults, according to Rouch (cited in Hammer, 1977) learn what they need and want to learn. They do not learn because someone else thinks they should learn. Goldenson (cited in Hammer, 1977) explains that educators within the continuing education process should take heed and consider the individual's needs and interests in order to keep the learner motivated.

An adult who enters the continuing education process because of needs identified by others may lack the motivation to learn. Hesburgh (cited in Hammer, 1977) claims that to help the adult to search for, to discover and to become interested in their needs is an art and a challenge to the field of adult education.

Blocks to Motivation

The most comprehensive national study of factors affecting participation in continuing education was conducted in the early 1970's under the auspices of the Educational Testing Service (cited in Houle, 1980). The sample was of approximately 104 million persons between the ages of 18 and 60, living in private dwellings in continental United States and who were not full-time students.

The sample was divided into "Would-Be Learners" - those who wanted to learn more about something and "Learners" - those who had in the previous 12 months received instruction. Would-Be-Learners were asked to indicate from a list of 25 reasons what kept them from studying what they wanted to learn. The professional respondents' top eight reasons from most important to least important were as follows:

1. not enough time.
2. job responsibilities
3. cost, including tuition and other expenses
4. don't want to go to school full-time
5. home responsibilities
6. amount of time required to complete program
7. courses aren't scheduled when desired
8. no information about possible learning resources.

(Table 5, p. 144)

These eight reasons fall under three major clusters as presented by Dao (cited in Houle, 1980) and discussed earlier in the Conceptual Framework. These three clusters are: (a) not enough time to participate in educational activities (could include scheduling conflicts), (b) individual and personal problems make it difficult to participate (includes costs, location and home and job responsibilities), and (c) unawareness of (no information about) educational activities available. Reasons number four and six will not be discussed since they relate more to continuing education courses.

Several studies on the continuing education needs of dietitians have identified some or all of these factors as factors affecting participation in continuing education activities. These factors will be discussed under the following headings: lack of time, cost of continuing education, location of continuing education, family responsibilities, employer support, unawareness of available resources and other possible factors affecting participation.

Lack of Time. The studies of dietitians reviewed tended not to ask specifically about lack of time but rather were continuing education programs scheduled at inconvenient times. Cross et al. (1984) in their survey of over 900 Illinois dietitians found that "programs held at inconvenient time" was the third most common reason for not attending continuing education programs. Thirty-seven percent of the sample listed this reason. Schwartz (1986), who surveyed over 300 BC dietitians and nutritionists, reported that "inconvenient time" was the number one deterrent to participation in programs and the second most important incentive if the time was convenient.

Smorynski and Parochka (1979) in their study of allied health professionals found that "time", or lack of it was the fourth most important factor affecting attendance in a continuing education program.

Inconvenient time seems to be a major factor affecting participation in continuing learning and could reflect lack of time

available, lack of release time from employer, family and job conflicts (discussed in later sections) or poor scheduling.

Cost. Although most continuing education planners assume that health professionals are able to get release time from work and are financially reimbursed for their continuing education activities, it is an inaccurate assumption (Schwartz, 1986; Smorynski & Parochka, 1979). Nearly 70 percent of Schwartz's (1986) sample expected their employers to pay all or part of their registration fees, but only 38 percent reported receiving reimbursement.

Burkholder and Eisele (1984) who surveyed over 300 dietitians in the upper midwestern states reported that the cost incurred in attending continuing education programs was one of two factors which imposed the greatest limitation on respondent participation in educational activities. Cross et al. (1984) and Broski and Upp (1979) reported similar results with cost being the second most important factor affecting participation in continuing education programs. Cost certainly appears to be an important factor to consider in planning programs.

Location. Several studies of dietitians or other health professionals have specifically identified inconvenient location or too far to travel as possible factors affecting participation. Burkholder and Eisele (1984) reported that "distance from suitable educational events" imposed the greatest limitation on respondents participating in educational events. Results from others concur with distance to travel or inconvenient location being the first or second most important factor impeding participation, particularly

to those living outside the urban center (Broski & Upp, 1979; Cross et al. 1984; Schwartz, 1986).

Preferred locations for continuing education programs must then be identified and considered by continuing education planners.

Family responsibilities. In a profession dominated by women it could be expected that family responsibilities play a more important role than in mixed or male-dominated professions. Sorenson (1979) indicated in his research that family responsibilities is a "concrete" barrier to female participation in adult education programs because of the workload and time commitment the family involves for many women.

Most of the studies previously discussed did not study the effects of family responsibilities on attendance at continuing education programs but this factor may have been reflected in other reasons such as inconvenient time or cost of participation (e.g., child care).

Cross et al. (1984) reported that 23 percent of their sample indicated family responsibilities as a reason for not attending programs. Twenty-four percent of Schwartz's (1986) respondents felt family responsibilities had much impact and less than 40 percent reported it had no impact on their participation in continuing education programs.

Sorenson (1979) explains that because most women are usually assigned the task of child care a substantial number of females have difficulties participating in educational programs outside working hours or courses scheduled away from home for several days.

The time programs are scheduled may, therefore, be of particular importance in female-dominated professions.

Employer support. Since employer support of continuing education is inconsistent, some dietitians may not obtain release time from their job to attend continuing education events. Hence, programs scheduled during work hours make attendance difficult without taking vacation time.

Broski and Upp (1979) who studied a group of five allied health professionals which included dietitians reported that lack of release time from employment was the third most important factor hindering participation in programs. Schwartz's (1986) study of BC dietitians also studied employer's contribution toward continuing education and found that 54 percent of dietitians reported receiving paid time off work while two-thirds expected this of their employers.

British Columbia dietitians and nutritionists also responded that "work responsibilities" had much impact (22 percent) or at least some impact (56 percent) on their participation. Lack of employer encouragement affected over 30 percent of dietitians whereas 60 percent responded that encouragement from their employer would act as an incentive (Schwartz, 1986). Although work responsibilities or lack of employer support are not the most important deterrents to participation in continuing education programs, they do appear to play a significant role.

Employers should probably be more supportive of continuing education since, as Hammer (1977) reports, continuing education

which meets the individual's needs and interests could impact upon their job satisfaction. Job turnover is related to job satisfaction so irrelevant or inaccessible continuing education programs could also affect job turnover which is certainly of concern to employers (Hammer, 1977). Quastel and Boshier (1982) concur that health professionals with unmet training needs are significantly more dissatisfied with their jobs than those with met training needs. They concluded that employers who provide opportunities for continuing education are likely to have more satisfied and competent employees.

Unawareness of available resources. Under this topic, lack of available resources will also be considered since a program may be assumed unavailable but in fact the dietitian may not be aware of its availability. Broski and Upp (1979) reported that "lack of available programs" hindered an average of 13 percent of respondents from participating in continuing education programs but Schwartz's (1986) results were more alarming. She reported that "lack of available courses" had some or much impact on 59 percent of dietitians, although this reason was one of the least important compared to those factors previously discussed.

Unawareness of available resources could reflect poor methods of advertising events to potential audiences. It is then important to question how dietitians most often learn about continuing education events so advertising can be disseminated more strategically. This was not an issue addressed in the studies of dietitians' continuing education needs or preferences. Heller and

Brown (1983), however, asked this question of a systematic sampling of Massachusetts registered nurses and found that respondents most often heard about programs through mailings received by their institutions and mailings from organizations to which they were members. Whether or not the same holds true for Manitoba registered dietitians is unknown but if so, it is important to know their membership status with professional organizations.

Other possible factors affecting participation. Some of the studies reviewed reported on whether or not the number of continuing education credits available or the topic offered affected participation in continuing education programs.

Burkholder and Eisele (1984) reported that the number of credits available was one of the least important factors respondents considered when selecting programs. Smorynski and Parochka's (1979) results concur. Holli's (1982) research on the opinions of metropolitan Chicago registered dietitians concerning continuing professional learning seems to support these findings. She reported that dietitians devote more time to learning activities not eligible for continuing education credit than to those eligible for credit. Results may be different for non-urban dietitians, since most programs eligible for credit are offered in urban centers.

Burkholder and Eisele (1984) reported that the relevance of the subject matter to professional practice was one of the top two reasons respondents considered when selecting educational activities.

"Interest in the topic offered" had much impact on almost 90 percent of Schwartz's (1986) respondents. Lack of interest in the topic acted as a deterrent to dietitians' participation in 92 percent of respondents. Similarly, 87 percent of Canadian dietitians reported that relevance of subject matter to professional practice was of great importance (Upton & Hedley, 1986).

Although a survey of all Illinois dietitians did not report lack of interest in program topic as the most important reason for not attending continuing education programs, it was the reason most often indicated by urban members. Those outside metropolitan Chicago listed inconvenient location most often.

Clearly, all the studies of dietitians' continuing education needs reported that the interest in the topic offered was one of the most important reasons affecting participation in events. The question to answer now is what topics interest dietitians.

Preferences for Continuing Education Programs

The studies of dietitians or other allied health professionals which attempted to identify the most convenient days and time(s) for continuing education events reported very inconsistent results. Cross et al. (1984) reported that Monday to Friday, 9:00 a.m. to 3:00 p.m., was preferred by an average of 50 percent of the sample, while one-third preferred evening programs, after 7:00 p.m., Monday to Thursday. Only one-fifth chose Monday to Friday, 4:00 to 6:00 p.m.

Schwartz (1986) not only looked at preferred day and time of day but also month of year. Fall and later winter months were preferred and Tuesday or Wednesday preferred days. Evening or all-day programs were the most popular. Approximately 20 percent had no preference for month of year or day of week but it was clear that July, August and December were unpopular months and Sunday an unpopular day. Tuesday and Wednesday also were preferred days for Michigan dietitians (Mutch & Wenberg, 1986).

Generally, the dietitians surveyed by Cross et al. (1984) and Schwartz (1986) preferred full-day programs over half-day or two-day programs. Broski and Upp's (1979) sample of allied health professionals also preferred full-day programs but Schwartz's (1986) survey of BC dietitians revealed a preference for an evening series. Upton and Hedley's (1986) sample of Canadian dietitians preferred one and two day workshops as well as evening credit courses.

Continuing Education Learning Needs

Clearly, people's needs ought to be among the basic criteria for designing educational programs. Needs are attributable to people; people have needs therefore, the concept of need is meaningful only to someone to whom the need is attributable. Because need is a concept of some desired status someone has to define the attributes of desired status. The definers may obtain this data by interview or survey which is direct contact with the needers (Coffing & Hutchinson, 1974).

The four studies of dietitians' continuing education needs reported in the literature after 1979 all modified the questionnaire first developed, validated and pre-tested by Vanderveen and Hubbard (1979). Vanderveen and Hubbard (1979), Burkholder and Eisele (1984), Schwartz (1986), and Upton and Hedley (1986), identified perceived learning needs rated on a four-point scale, ranging from high need to no need. Cross et al. (1984) asked respondents to rate topics according to the probability of their attendance at a continuing education program.

The questionnaires of four investigators listed subject matter items under three major knowledge areas: (a) nutritional care sciences, (b) behavioral, communicative, and socio-cultural sciences, and (c) managerial sciences while one researcher only looked at managerial topics (Upton & Hedley, 1986). Each researcher, except Cross et al. (1984) and Upton and Hedley (1986) reported validating and/or pretesting their revisions to Vanderveen and Hubbard's (1979) assessment tool. Cross et al. (1984) also did not report all the topics included in the questionnaire in the three knowledge areas nor the percent of respondents indicating a high or moderate need for continuing education in each topic. The three other researchers did provide this information which can be utilized in comparing topics studied and results.

Nutritional care sciences. Vanderveen and Hubbard (1979) developed 39 topics in the nutritional care sciences and subdivided the topics into four areas - nutrient related, behavior therapy related, organismic therapy related and food related. Burkholder

and Eisele (1984) reduced the number of topics to 36 by omitting 5 of the 39 topics and adding 2 topics which received increased attention in the 1980's, namely, fetal alcohol syndrome and nutritional needs of the athlete. Topics were subdivided into two areas rather than four - special nutritional needs and nutritional needs in the life continuum.

Schwartz (1986) reduced Vanderveen and Hubbard's (1979) listing to 33 topics by: (a) eliminating the more food related topics such as food processing/technology, availability of food supply, and new food products; and (b) combining two or more topics to make one (e.g., food safety, toxicants in food and food additives to food safety/additives). She also added seven completely new topics, namely, food/nutrition faddism, nutrition and athletic performance, nutritional support, anorexia nervosa/bulimia, osteoporosis/arthritis, adolescent nutrition and long-term care/home care. These, again, are concerns of the 1980's not mentioned in Vanderveen and Hubbard's (1979) questionnaire.

Schwartz (1986) also chose to separate unrelated topic areas that were combined as one topic by Vanderveen and Hubbard (1979). For example, physiologic-biochemical nutrient interactions, controlling hyper- and hypoglycemias, nutrition for physically and mentally impaired were expanded to six topics - nutritional physiology, nutritional biochemistry, diabetes, hypoglycemia, nutrition for mental impairment, and nutrition for physical rehabilitation, respectively. This separation is preferable as it is unlikely the combination of subject matter topics presented by Vanderveen and

Hubbard (1979) would be presented simultaneously in a continuing education program.

Schwartz (1986) simplified the presentation of the topics in her questionnaire which is an improvement upon Vanderveen and Hubbard's (1979) in brevity and conciseness. For example, "carcinogenesis and nutritional implications" was simplified to "nutrition and cancer" and "hyperlipidemias, hyperlipoproteinemias and diet modifications" was reduced to "diet and heart disease".

Some trends prevailed in the three studies of dietitians' learning needs in the nutritional care sciences.

Vanderveen and Hubbard (1979), and Burkholder and Eisele (1984) both reported highest expressed needs for subject matter related to the following: (a) current vitamin and mineral research; (b) drug-nutrient interaction; (c) physiologic-biochemical nutrient interactions; and (d) hormone-nutrient interrelationships. The first two topics were also in the top five expressed needs of BC dietitians (Schwartz, 1986).

Schwartz (1986) reported that other popular topics represented prevalent conditions such as osteoporosis, cancer and allergies and common situations requiring specialized knowledge such as nutritional status assessment. Lowest needs were expressed for highly specialized conditions or situations likely to be encountered by few respondents such as inborn errors of metabolism, critical care (burns, trauma and surgery) and nutrition for mental impairment. Although these particular topics were not found to be of lowest need to Ohio and upper midwestern state dietitians, the

least popular topics were also generally ones encountered by few respondents (e.g., non-traditional diets, role of carbohydrates in dental health, nutritional labelling) (Burkholder & Eisele, 1984; Vanderveen & Hubbard, 1979).

Behavioral, communicative, socio-cultural sciences.

Vanderveen and Hubbard (1979) developed 31 subject matter topics in this area, with four subareas. Burkholder and Eisele (1984) reduced the number of topics to 24 and eliminated the four subareas. Schwartz (1986) modified Vanderveen and Hubbard's (1979) listing of topics to 25 by eliminating several and combining similar topics (e.g., socioeconomic influence on food behavior and cultural bases of food beliefs to socio-cultural aspects of nutrition). She also expanded several topics of Vanderveen and Hubbard's (1979) to two separate topics as they would most likely be dealt with separately in a continuing education program. For example, effective interviewing and counselling became effective interviewing and effective counselling; writing for publication, scientific, technical and popular press became writing for popular press and scientific/technical writing. She, again, as in the nutritional care sciences topics, simplified the presentation of topics (e.g., electronic media impacts on value systems to use of mass media in education). Several new topics were added including communication skills, lobbying skills, preparation/use of audio-visual aids, debating and parliamentary procedure and medical recording skills. The area of computers was expanded to three

topics from one topic again reflecting current technology in the 1980's.

Some trends also can be found in the results of the three studies with two common topics occurring in the top five learning needs. These topics, which were practical and skill-oriented, included effective interviewing, effective counselling and teaching methods. The topic, research process, was found to be of lowest need in all three studies. Other unpopular topics included: (a) legislative process, (b) lobbying, (c) debating/parliamentary procedures, and (d) writing for publication. These are areas not frequently performed as part of the dietitian's role (Schwartz, 1986).

Managerial sciences. Vanderveen and Hubbard (1979) developed 39 questions on subject matter topics in the managerial sciences category. The level of ability to perform these activities was categorized as conceptual, human and technical. Burkholder and Eisele (1984) reduced Vanderveen and Hubbard's (1979) list of topics to 33 and Schwartz (1986) and Upton and Hedley (1986) further reduced the listing of topics to 20. To reduce the number of topics Schwartz (1986) and Upton and Hedley (1986) seemed to omit many of those found to be needed least by Vanderveen and Hubbard's (1979) sample. Schwartz (1986) added only one new topic - auditing/quality assurance which Cross et al. (1984) also included while Upton and Hedley (1986) added two new topics - strategic planning and innovative styles of human resource management.

Although there are some similarities in the results of those studies reporting management learning needs, direct comparisons are difficult since some topics were modified, or totally eliminated or completely new topics added (Burkholder & Eisele, 1984; Schwartz, 1986; Upton & Hedley, 1986; Vanderveen & Hubbard, 1979).

There are, however, some trends worth mentioning within the top five needs. Schwartz (1986) and Upton and Hedley (1986) both reported managerial effectiveness and efficiency and quality assurance among the most popular topics. Other positioning of topics related to high or moderate need varied greatly.

The apparent differences in continuing education needs could be related to the changing times or regional differences.

Demographic Characteristics and Continuing Education Needs and Preferences

Does the dietitian's area of professional responsibility or location (urban, non-urban) affect his or her continuing education needs? The studies discussed thus far did not generally determine if a relationship existed between location and learning needs or preferences but the dietitian's area of professional responsibility and learning needs was always related.

Burkholder and Eisele (1984), Cross et al. (1984), Schwartz (1986) and Upton and Hedley (1986) all reported similar results in one functional area of responsibility; the managerial science topics were chosen significantly more often by the respondents in the administrative functional area. Nutrition care topics were chosen more often by clinical dietitians in only two studies (Cross et

al. 1984; Schwartz, 1986). Burkholder and Eisele (1984) reported that the proportion of respondents who expressed a moderate to high need for knowledge about nutritional care science topics did not vary significantly across functional area.

Expressed learning needs were fairly consistent across professional roles in the behavioral, communicative, socio-cultural sciences in two of the three studies (Burkholder & Eisele, 1984; Schwartz, 1986). Cross et al. (1984), however, reported that topics from this category were chosen more often by consultants, educators and community/public health dietitians than clinical or administrative dietitians.

Cross et al. (1984) did report differences in needs and preferences based on location. They found that metropolitan Chicago dietitians and those living outside Chicago differed in their choices of continuing education topics as well as their preferences for length and times of continuing education programs.

Summary

The concept of education beyond formal schooling is not a new one to Manitoba dietitians but in order for continuing education to be effective, those responsible for formulating continuing education programs must periodically assess dietitians' needs and preferences. One method of identifying these needs involves assessing learning needs and factors affecting participation in continuing learning (Sorensen, 1979).

Several studies on the continuing education needs of health professionals (Broski & Upp, 1979; Burkholder & Eisele, 1984; Cross

et al. 1984; Schwartz, 1986) reported that the time and location of programs, the topics offered, and the cost of participation were all important factors impeding participation in continuing education events. Other reported factors affecting participation included family and job conflicts and not being aware of available resources. The continuing education credits available did not appear to affect participation in education programs.

Researchers who identified preferences for continuing education related to length and timing of the program generally reported that full-day or evening sessions were chosen over half-day or two-day programs (Broski & Upp, 1979; Cross et al. 1984; Schwartz, 1986).

Three studies of dietitians' perceived learning needs used a similar questionnaire to identify needs in the three sciences of dietetics: (a) nutritional care sciences; (b) behavioral, communicative, socio-cultural sciences; and (c) managerial sciences (Burkholder & Eisele, 1984; Schwartz, 1986; Vanderveen & Hubbard, 1979). Schwartz's (1986) questionnaire is the more up-to-date, straight-forward and concise adaptation of Vanderveen and Hubbard's (1979) questionnaire. She reduced the total number of subject matter topics in each science category, simplified the presentation of topics and included subject matter topics popular in the 1980's. There are some similarities in the expressed needs of dietitians in the two American and one Canadian studies.

Within the nutritional care sciences, highest learning needs were expressed for topics representing prevalent conditions such as

osteoporosis, allergies or cancer (Schwartz, 1986); common situations requiring specialized knowledge such as nutritional status assessment and drug-nutrient interactions; and areas of active research and emerging knowledge such as vitamins and minerals. Lowest needs were expressed for highly specialized conditions or situations likely to be encountered by few dietitians (Burkholder & Eisele, 1984; Schwartz, 1986; Vanderveen & Hubbard, 1979).

Some trends also existed in the expressed learning needs in the category of behavioral, communicative, socio-cultural sciences. The practical, skill-oriented topics such as effective interviewing, effective counselling and teaching methods were the most highly rated in terms of need. Areas not frequently performed as part of the dietitian's role (Schwartz, 1981) such as writing for publication, lobbying and the legislative process yielded the lowest expressed need. The most popular topics in the managerial sciences category were managerial effectiveness and efficiency and quality assurance.

Demographic characteristics such as area of professional responsibility may affect dietitians' learning needs for continuing education. Generally, dietitians in administrative dietetics chose topics in the managerial sciences more often whereas those in clinical dietetics chose topics in the nutritional care sciences more frequently. Expressed learning needs were fairly consistent across professional roles in the behavioral, communicative, socio-cultural sciences.

Some differences also were reported to exist between urban and non-urban dwellers and their continuing education needs and preferences.

Chapter 3

Procedures

The learning needs and preferences of dietitians and the factors that affect their participation in continuing education programs ought to be among the basic criteria for designing educational programs.

Learning needs as expressed through a survey are not necessarily real needs but might more accurately reflect wants. The determination of real learning needs involves empirically assessing performance skills of dietitians and comparing these with established standards of professional competence. This process, however, is a lengthy one requiring the expertise of several representative groups (Chernoff et al., 1983). Such a time frame is unrealistic for this study limiting the assessment of continuing education needs to those expressed by dietitians.

This method of learning needs identification, with a focus on knowledge acquisition, involves three assumptions: (1) dietitians can adequately identify their own learning needs, (2) identification of learning needs leads to improved continuing education programs and (3) knowledge acquisition results in enhanced performance, thus fulfilling the goal of continuing education (Chernoff et al., 1983; Schwartz, 1986).

Population

All 1985-1986 active-practising members of MARD who reside in the province of Manitoba, excluding those members involved in

piloting the questionnaire were surveyed. Active-practising members excluded retired and honorary members included in the 1985-1986 membership list. The total number to whom surveys were sent was 182. Sixteen member's names were deleted from the total population (n=182) when it was found during follow-up or from the returned survey that they had retired, resigned or moved out-of-province. The final population consisted of 166 members. The response rate was 95.2 percent (n=158).

Instrumentation

The learning needs of active-practising dietitians in Manitoba could be assessed using a face-to-face interview, mail questionnaire or telephone interview.

The mail questionnaire was chosen for cost and efficiency reasons. The cost per contact would be significantly lower considering the large sample and geographical dispersion of potential respondents. Dillman (1978) rates the face interview and telephone interview as preferable to the mail questionnaire in such characteristics as: 1) control over selection of respondents within sampling units, 2) likelihood that unknown bias from refusals will be avoided, 3) success with open-ended questions and controlling sequence of questions, and 4) success in avoiding item non-response. These factors, particularly, 1, 2, and 4, are not of great concern when a homogeneous, specialized sample and the "Total Design Method" by Dillman (1978) are utilized, as is the case in this study. Response rates in such samples are high in all three methods. Point 3 above - success with open-ended questions and controlling sequence of questions, is not of particular concern in this study either, since the sequence in which questions are

answered does not generally matter and open-ended questions are avoided.

Questionnaire development. The mail questionnaire used in this study (see Appendix A) was adopted from Schwartz (1986) who assessed the continuing education needs and preferences of BC dietitians and nutritionists in 1984. A copy of her instrument has been reproduced with permission in Appendix B. Her questionnaire contained three sections: (a) general information, which included questions related to age, employment status, area of professional responsibility; (b) continuing education profile which addressed the possible factors affecting dietitians' participation in continuing education activities, employer's contribution toward continuing education and dietitians' expectation of the same; and (c) learning needs in the nutritional care sciences, behavioral communicative, socio-cultural sciences and managerial sciences.

Modifications were made to all sections of Schwartz's (1986) questionnaire based on Dillman's "Total Design Method" (1978) as well as results from the piloting and the validating of the questionnaire.

Several questions which appeared in the General Information section of Schwartz's (1986) survey were omitted so that only data addressing Study questions A(a) and A(b) (page 7) were gathered. Information related to dietitians' location, age, years of experience, year of undergraduate degree, employment status, membership in professional organizations, and area of professional responsibility was collected.

A new question was included to gather data on whether or not respondents had met the continuing education guidelines by obtaining 15 credits in the previous year (see Study Question A(c), page 7). The author wished to determine if those who responded to the survey also obtained the recommended number of credits.

The second section of Schwartz's (1986) questionnaire - Continuing Education Profile, was adapted slightly and moved to the beginning of the questionnaire since this section would likely be viewed as the most useful by the respondents (Dillman, 1978). The question in Schwartz's (1986) study related to possible sources of continuing education was excluded since this study is only concerned with formal continuing education needs of Manitoba dietitians.

A new question was added to identify how dietitians are presently informed about continuing education events. The most popular sources of advertising can be evaluated by MARD and used in future planning so members are aware of all available programs (see Study Question B(a), page 7).

Three factors were added to Schwartz's (1986) list of six incentives influencing the dietitians' participation in continuing education activities. One incentive related to colleague support was omitted. The factors added included the monetary cost of participating, the number of continuing education credits available and the availability of child care at the program (see Study Question B(b), page 7). The cost of participating was added since

it represented one of the top two factors affecting participation in continuing education in three reported studies of health professionals (Broski & Upp, 1979; Burkholder & Eisele, 1984; Cross et al., 1984). Although the review of literature generally concluded that the availability of continuing education credits was usually not a factor affecting participation in continuing education events, the subjects studied were usually from urban centers. In Manitoba, dietitians are dispersed throughout the province including rural and northern areas. Most programs sponsored by MARD which offer continuing education credits are held in Winnipeg and perhaps not accessible to many rural and northern-living dietitians. Accumulating the recommended 15 credit points annually may be difficult for some of these members. The third factor was added since, according to Sorensen (1979), women with children who work outside the home have difficulties participating in educational programs outside work hours. Perhaps if child care was available, attendance would improve at evening or weekend programs.

For the purposes of this study, Schwartz's (1986) listing of incentives and deterrents was combined into one list reflecting general factors affecting participation as her study revealed that incentives and deterrents were similarly rated.

Schwartz's two questions on employer's contribution to continuing education and the dietitian's expectation of the same were replicated with minor wording adjustments (see Study Question B(c), page 7).

Schwartz's (1986) survey assessed preferences for length and times of continuing education including preferred month(s) of year, day(s) of week and time(s) of day. In this study, days of week and times of year were combined as preferred times of day could vary with the day of the week. Also times of day were more explicatedly listed, (eg. 9 a.m. - noon v.s. morning) and all months were individually listed. Since the location of a continuing education event is one of the most important factors affecting participation in programs, preferred locations were identified--Study Question B(d), page 7 (Broski & Upp, 1979; Cross et al., 1984; Schwartz, 1986).

The section on preferred formats in Schwartz's (1986) survey was not included as the format varies with the topic area and capabilities (eg. equipment) of provider.

The section of the questionnaire on learning needs was divided into the three categories of nutritional care sciences; behavioral, communicative, socio-cultural sciences; and managerial sciences but not labelled as such as was Schwartz's (1986) survey. This was to prevent the possibility of, for example, administrative dietitians rating the managerial sciences topics higher than they might have had the listing of topics not been labelled. Respondents rated each topic in each of the three science categories according to the degree of need they felt for additional knowledge in that topic area. The four point scale used to assess level of need was: 3 = high need, 2 = moderate need, 1 = low need, 0 = no need (Burkholder & Eisele, 1984; Schwartz, 1986; Vanderveen & Hubbard, 1979).

In the nutritional care sciences category, Schwartz (1986) listed 33 topics. For this study, 26 of these topics were replicated and four new topics added to reflect provincial priorities (diabetes, hypertension and disease prevention). The total number of topics in this category was 30.

The behavioral, communicative and socio-cultural sciences category of Schwartz's (1986) assessment tool contained 25 topics. Eighteen of these topics were replicated, four were added, two were moved to managerial sciences and the rest omitted as they were rated by Schwartz (1986) as least needed. The new topics reflected the changing times (marketing nutrition and computers in education) and needs expressed as important by Halford and Gallagher (1979), namely, developing nutritional care plans and assessing dietary compliance.

In the managerial sciences category, Schwartz (1986) included 20 topics. Since she developed her questionnaire more to reflect learning needs in clinical and community topics than administration she minimized this listing (N. Schwartz, personal correspondence, January 21, 1986). To reduce the possibility of overlooking or inappropriately representing topics in this area, Schwartz's (1986) listing of 20 topics was reviewed by a dietitian in management. As a result, seven topics were deleted, several reworded, and five topics added. The new topics were: recipe development/new product testing, developing policy and procedure manuals, profit-oriented services, food quality and quantity control and sanitation principles and regulations. Two computer topics as previously

mentioned were added also to this category for a total of 23 topics.

Content validation. Although Schwartz (1986) validated her questionnaire, the questionnaire used in this study was significantly modified. The content of the survey was revalidated using the face validity procedure (Moore, 1983) which is a professional appraisal of what appears to be valid for the content the test attempts to measure. Five professionals validated the content of the questionnaire according to criteria established by the author (see Appendix C). The validating committee consisted of similarly trained professionals as those in the study group (e.g., home economists) and potential users of the data.

Piloting. After modifications were made to the survey according to comments from the validating committee the questionnaire was pilot tested with the Board of Directors of MARD which included 10 members of MARD. The Board was told in general terms that a survey was to be done and they were being asked to help pretest it. They were each given the questionnaire (see Appendix A) accompanied by a cover letter (see Appendix D) and asked to fill it out in the presence of the researcher. This pretest had two crucial aspects - both the verbal feedback and nonverbal feedback. Often it is the nonverbal feedback which proves to be the most useful, for example, the hesitation before answering or the skipped question (Dillman, 1978).

Minor changes were made both to the cover letter and questionnaire based on the pretest. Questions 2 and 3 were

expanded to include not only those presently employed but also previously employed. Question 8 was expanded to read "to which centers would you be willing to travel to attend a continuing education program of interest to you". A new category was added to Question 11 to identify those unemployed but looking for work. Question 12 was reworded so those with more than one area of professional responsibility would choose the category that occupied the greatest portion of worktime. Also those not working had an opportunity to express their area of interest.

Method

Guidelines as established by Dillman (1978) were followed closely during the implementation stage. His "Total Design Method" for mail surveys was adopted to positively affect both the quality and quantity of response. To maximize survey response he recommends three things that must be done: minimize the cost for responding (including monetary and time costs), maximize rewards for doing so (mere verbal appreciation and personalization techniques are critical), and establish trust that rewards will be delivered (e.g., supplying results to decision-makers). All of these factors were considered in the design of the cover letter and implementation of the original mailing. Additional suggestions outlined by Statistics Canada were also considered; one being that potential respondents receive advance notification of the survey. Since members of MARD receive a regular newsletter, the issue released prior to the mailout of the survey included a statement

concerning the purpose of the study with a request for cooperation (MARD Newsletter, 1986).

The cover letter, which was on MARD letterhead, explained: the purpose and usefulness of the study, why each recipient's response was important to the interpretation of results, that the information they provided was confidential and that the researcher promised to share the results with the Executive of MARD and with all members through the MARD Newsletter. Each letter was individually addressed and the researcher's real signature was added to each letter. Names and addresses were individually typed onto the envelopes rather than using mimeographed address labels.

The questionnaire, cover letter and a prestamped, pre-addressed return envelope were included in each mailout package, assembled according to Dillman's (1978) instructions. The mailout date was April 29, 1986.

Two follow-ups were carried out at one week and three weeks following the initial mailout. Although Dillman (1978) suggests a third certified mail follow-up at seven weeks as a final effort to improve response, this step was omitted in this study. The certified mailout, tends to reach the older, less-educated and lower-income people which do not make up this sample. Considering the cost and time restraints a third mailout was not carried out.

The first post-card follow-up was mailed to the total population as a reminder to those who had not yet responded and to thank those who had already responded (see Appendix E).

The second follow-up contact was made by telephone to those who had not yet responded three weeks following the initial mailout. Each questionnaire contained an identification (ID) number in the upper right hand corner of the cover page so that follow-up contacts could be directed to those who had not yet responded to the original mailout. The researcher alone had a copy of the list which matched the ID numbers with the names of individuals on the MARD mailing list.

For the telephone follow-up, the dietitian was asked if she had received the questionnaire and if so, had she completed it. If she had not received the questionnaire or had misplaced it, a new one was mailed out. If she had not yet completed the questionnaire, she was asked if she intended to do so. Business telephone numbers were available to the author so those who had moved out-of-province could be identified and deleted from the sample. If incorrect addresses were used in the mail out, corrections were obtained in the follow-up telephone call.

No deadline date was established so all returns were accepted. Before the follow-up postcard was mailed out, 60 usable surveys were returned. After the follow-up postcard was mailed but before the follow-up telephone call was made, an additional 73 surveys were returned. After the telephone call follow-up was completed, 26 more questionnaires were received for a total response rate of 95.8 percent (n=159). One survey was incomplete leaving 158 usable surveys for analysis.

Data Analysis. Each questionnaire was coded and any written comments were tallied and organized. The coded information was

keypunched, verified and then analyzed using programs from the Statistical Analysis System (SAS). Descriptive statistics included frequency of responses by age category, location within Manitoba, years of experience, year of undergraduate degree, membership in professional organizations, area of professional responsibility, and employment status. Whether or not 15 continuing education credit points were obtained in the previous year was computed, as well. Sources of program advertisement, employer's contribution to continuing education with respondents' expectation of the same, preferred location, length, and times (day with time of day and months of year) for continuing education events were descriptively analyzed.

Factors influencing participation in continuing education (employer support, family support, location of programs, times of program, topics offered, number of continuing education credits available, cost of participating, availability of child care) were scored based on their effect on participation for all respondents, as well as for urban and non-urban respondents. A score of 2, 1 and 0 was equivalent to much effect, some effect, and no effect, respectively.

Preferences for program location, length and times (day, time, month) were computed for all respondents including an urban and non-urban breakdown.

The 75 learning needs in the three categories of nutritional care sciences; behavioral, communicative, socio-cultural sciences; and managerial sciences were scored based upon the degree of need

for more knowledge. A score of 3, 2, and 1 was equivalent to a high, moderate or low degree of need, respectively. Using the mean score, learning needs were ranked based on the respondents' area of professional responsibility (clinical nutrition, administrative dietetics, other) and location (urban, non-urban).

Chapter 4

Results

A mail questionnaire was sent to all active-practising registered dietitians living in Manitoba (n=182), during the spring of 1986, to determine their continuing education needs and preferences.

From the original population of 182 dietitians, 16 member names were deleted when it was determined during follow-up or from the returned questionnaire that they had retired, resigned or moved out-of-province. The final population consisted of 166 active-practising members of MARD who resided in Manitoba.

One week after the questionnaire was mailed out but before the follow-up post card was sent, 60 or 36.1 percent of the population had returned their completed questionnaires. By Week 2, after the reminder post card was mailed, an additional 49 (29.5%) questionnaires were received. Before the follow-up telephone call was made at Week 3, 24 (14.5%) more questionnaires were received for a response rate by Week 3 of 80 percent. After the telephone call follow-up was completed, 26 (15.7%) more questionnaires were received for a total return of 159 or a response rate of 95.8 percent. One questionnaire was incomplete leaving 158 questionnaires (95.2%) available for final analysis.

Demographic Characteristics

The number and distribution of respondents by demographic variables investigated in the survey are shown in Table 1. The majority of respondents were from Winnipeg and employed full-time

in dietetics for more than 5 years. Most had graduated with their undergraduate degree after 1970 and were under 40 years of age. As noted in Table 1, data were incomplete on one questionnaire returned related to age and year of undergraduate degree and on two questionnaires related to years employed in dietetics.

The question related to area of professional responsibility was answered by only 126 members, 16 omitted the question and 16 chose more than one answer. Of the 126 who correctly completed the question, 37 and 34 percent practiced or were interested in clinical nutrition and administrative dietetics, respectively. Most respondents were members of their national association, the Canadian Dietetic Association (CDA), and almost 25 percent of the dietitians belonged to the Professional Health Workers Section of the Canadian Diabetes Association. Less than 10 percent of the membership reported membership in each of the other associations listed in the questionnaire (Canadian Home Economics Association, Manitoba Home Economics Association, Canadian Food Service Executive Association, Organization for Nutrition Education, Canadian Hospital and Restaurant Association). Those who specified membership in organizations other than those listed above, most often mentioned the American Dietetic Association (n=14). Twenty-four other organizations were listed from one to three times each (see Appendix F). Ten (6.3%) dietitians did not answer this question.

Table 1

Demographic Characteristics of Respondents

| Characteristic | No. of Responses | % of Total |
|--|------------------|------------|
| Employment status (n=158) | | |
| Full-time | 100 | 63.3 |
| Part-time | 37 | 23.4 |
| Not employed outside home | 16 | 10.1 |
| Student | 1 | 0.6 |
| Employed outside profession | 4 | 2.5 |
| Specialty/Interest (n=126) | | |
| Clinical nutrition | 47 | 37.3 |
| Administrative dietetics | 43 | 34.1 |
| Outpatient/Counselling | 14 | 11.1 |
| Education | 8 | 6.3 |
| Community | 7 | 5.6 |
| Sales/Marketing | 2 | 1.6 |
| Other | 2 | 1.6 |
| Not applicable | 3 | 2.4 |
| Years employed in dietetics (n=156) | | |
| 0-2 | 24 | 15.4 |
| 3-5 | 31 | 19.9 |
| 6-10 | 37 | 23.7 |
| 10+ | 64 | 41.0 |
| Year of undergraduate degree (n=157) | | |
| Before 1960 | 19 | 12.1 |
| 1960-1969 | 34 | 21.7 |
| 1970-1979 | 64 | 40.8 |
| After 1980 | 40 | 25.5 |
| Age in years (n=157) | | |
| <30 | 45 | 28.7 |
| 30-39 | 68 | 43.3 |
| 40-49 | 24 | 15.3 |
| 50-59 | 16 | 10.2 |
| 60+ | 4 | 2.5 |
| Location (n=158) | | |
| Urban center (Winnipeg) | 129 | 81.6 |
| Non-urban | 29 | 18.4 |
| Professional organizations (n=148) | | |
| Canadian Dietetic Association | 144 | 97.3 |
| Canadian Diabetes Association | 36 | 24.3 |
| Manitoba Home Economics Association | 15 | 10.1 |
| Canadian Home Economics Association | 13 | 8.8 |
| Organization for Nutrition Education | 10 | 6.8 |
| Canadian Food Service Executive Assn. | 10 | 6.8 |
| Canadian Hospital and Restaurant Assn. | 4 | 2.7 |
| Other | 38 | 25.7 |

Sixty-seven percent (see Table 2) of the respondents met the continuing education guidelines and received at least 15 credits in the previous year. A greater percentage of urban versus non-urban dietitians were able to meet these guidelines. Four respondents omitted this question, leaving 154 useable answers.

Table 2

Percentage of Respondents Meeting Continuing Education Guidelines

| 15 Credits Obtained | All Respondents (n=154) | Location | |
|---------------------|----------------------------|------------------|---------------------|
| | | Urban (n=125) | Non-urban (n=29) |
| Yes | 65.8 | 67.2 | 58.6 |
| No | 34.2 | 32.8 | 41.4 |

Factors Affecting Participation in Continuing Education

The four factors, in descending order, having the most impact on the respondents' attendance at continuing education programs were (a) topic offered, (b) location of programs, (c) times of programs, and (d) employer support (see Table 3). For non-urban dietitians, the location of programs was of more influence than the topic offered and for urban dietitians the times of programs preceded the location of programs in importance. Family support, the number of continuing education credits available, and the availability of child care had little overall effect on the respondents' participation in continuing education events. Based on the mean score six of the eight factors listed affected non-urban dietitians more than urban dietitians in overall effect on participation.

Table 3

Factors Affecting Dietitians' Participation in Continuing Education

| Factors ^a | Overall Effect ^b | | |
|-------------------------------------|-------------------------------|-------------------------|---------------------|
| | All Respondents (n=157) | Location of respondents | |
| | | Urban (n=128) | Non-urban (n=29) |
| Topic offered | 1.72 | 1.73 | 1.70 |
| Location of programs | 1.64 | 1.59 | 1.86 |
| Times of programs | 1.62 | 1.63 | 1.62 |
| Employer support | 1.37 | 1.36 | 1.43 |
| Monetary cost | 1.20 | 1.17 | 1.31 |
| Family support | 0.85 | 0.84 | 1.00 |
| Number of c.e. credits ^c | 0.74 | 0.73 | 0.83 |
| Child care availability | 0.21 | 0.17 | 0.39 |

^aListed in descending order of overall impact on all respondents.

^bScore: 2 = much effect; 1 = some effect; 0 = no effect. ^cc.e. = continuing education

Table 4 summarizes the responses of 157 dietitians (one questionnaire had incomplete data) regarding their present or past employer's contribution to continuing education and their expectations of what an employer should contribute to continuing education. For most of the possible contributions there was a discrepancy between actual contribution and expected contribution. Most surprisingly, fewer expected to have all travel and accommodation paid than actually received it. For the remaining forms of contribution, except all registration fees, 5 to 23 percent of respondents expected more from their employers than was

actually received. In fact, 12 percent reported receiving no contribution whereas only 1 percent expected this.

Table 4

Employers' Contribution to Dietitians' Continuing Education

| Contribution | % of dietitians (n=157) | |
|------------------------------|----------------------------------|--------------------------|
| | Actual contribution ^a | Expectation ^b |
| Paid time off work | 86.0 | 94.3 |
| All registration fees | 42.0 | 41.4 |
| Part of registration fees | 19.7 | 33.8 |
| All travel/accommodation | 30.6 | 26.8 |
| Part of travel/accommodation | 19.1 | 42.0 |
| No contribution | 12.1 | 1.3 |
| Not applicable | 0.3 | |

^aPercentage of respondents employed or once employed reporting receipt of contribution from employer. ^bPercentage of respondents reporting expectation of contribution from present, past or future employer.

Almost all dietitians (see Table 5) learned about continuing education programs from their provincial association, MARD. Over half reported learning about programs through their workplace and less than half reported learning about programs from CDA, or other organizations to which they belonged. Those who reported learning about continuing education programs from sources other than those listed on the questionnaire, mentioned colleagues and the University of Manitoba most often.

Table 5

Continuing Education Advertisement

| Method of advertisement | % of dietitians (n=158) |
|-----------------------------------|-------------------------|
| <hr/> | |
| Mailings from MARD | 95.6 |
| Mailings from workplace | 61.4 |
| Mailings from CDA | 42.4 |
| Mailings from other organizations | 32.3 |
| Other | 12.7 |

Preferences for Continuing Education Programs

As indicated in Table 6, the most popular days and times of day on which to hold continuing education programs as indicated by over 50 percent of respondents were Monday to Saturday, 1300 to 1600 hours; Monday to Thursday, 1600 to 1800 hours and 1900 to 2100 hours; and Saturday morning. Urban respondents differed little in their preferences for days and times from all respondents (see Table 7). Many non-urban dietitians (62-73%) preferred Fridays and Saturdays (900-1200 hours, 1300-1600 hours). Weekday afternoons were also popular with 50 percent or more of non-urban dietitians. Friday and Saturday evenings and Sunday all day were unpopular with all dietitians, urban and non-urban. Six people did not complete this question for a total of 152 useable responses.

Table 6

Preferred Times for Continuing Education Programs

| Days of week | % of dietitians (n=152) | | | |
|--------------|-------------------------|-----------|-----------|-----------|
| | Times of day | | | |
| | 900-1200 | 1300-1600 | 1600-1800 | 1900-2100 |
| Monday | 39.5 | 50.7 | 56.6 | 58.6 |
| Tuesday | 42.1 | 53.3 | 54.6 | 59.2 |
| Wednesday | 41.5 | 50.7 | 54.0 | 58.6 |
| Thursday | 45.4 | 56.6 | 59.2 | 59.9 |
| Friday | 47.4 | 57.9 | 40.8 | 30.9 |
| Saturday | 63.8 | 53.3 | 18.4 | 13.2 |
| Sunday | 22.4 | 22.4 | 12.5 | 10.5 |

Note: Respondents were asked to check all options that applied.

Table 7

Preferred Times for Continuing Education Programs by Urban and Non-urban Dietitians

| Days of week | | % of dietitians (n=152) | | | |
|--------------|--------------------------|-------------------------|-----------|-----------|-----------|
| | | Times of day | | | |
| | | 900-1200 | 1300-1600 | 1600-1800 | 1900-2100 |
| Monday | - Urban ^a | 37.3 | 49.2 | 61.1 | 63.5 |
| | - Non-urban ^b | 50.0 | 57.7 | 34.6 | 34.6 |
| Tuesday | - Urban | 42.1 | 54.0 | 59.5 | 64.3 |
| | - Non-urban | 42.3 | 50.0 | 30.8 | 34.6 |
| Wednesday | - Urban | 41.3 | 50.8 | 58.7 | 62.7 |
| | - Non-urban | 42.3 | 50.0 | 30.8 | 38.5 |
| Thursday | - Urban | 46.0 | 57.1 | 64.3 | 65.1 |
| | - Non-urban | 42.3 | 53.8 | 34.6 | 34.6 |
| Friday | - Urban | 44.4 | 55.6 | 42.9 | 29.4 |
| | - Non-urban | 61.5 | 69.2 | 30.8 | 38.5 |
| Saturday | - Urban | 61.9 | 50.8 | 16.7 | 12.7 |
| | - Non-urban | 73.1 | 65.4 | 26.9 | 15.4 |
| Sunday | - Urban | 20.6 | 20.6 | 11.1 | 10.3 |
| | - Non-urban | 30.8 | 30.8 | 19.2 | 11.5 |

^an=126. ^bn=26.

Note: Respondents were asked to check all options that applied.

The most popular months during which to hold continuing education programs varied somewhat between urban and non-urban dietitians (see Table 8).

Over 75 percent of all respondents preferred March, April, September and October. October was the most popular month and July, August and December the least popular months for all respondents. Urban and non-urban respondents reported similar preferences. Almost 30 percent of respondents indicated they had no preferences for the months of the year.

Table 8

Most Convenient Months for Continuing Education Programs

| Month of year | % of dietitians | | |
|---------------|----------------------------|------------------|---------------------|
| | All respondents (n=158) | Urban (n=129) | Non-urban (n=29) |
| January | 75.3 | 80.6 | 51.7 |
| February | 82.3 | 89.2 | 51.7 |
| March | 86.1 | 88.4 | 75.9 |
| April | 87.3 | 89.2 | 79.3 |
| May | 79.7 | 82.2 | 69.0 |
| June | 55.1 | 58.1 | 41.4 |
| July | 32.3 | 32.6 | 31.0 |
| August | 34.8 | 33.3 | 41.4 |
| September | 79.7 | 80.6 | 75.9 |
| October | 93.7 | 95.4 | 86.2 |
| November | 85.4 | 89.2 | 69.0 |
| December | 40.5 | 42.6 | 31.0 |
| No Preference | 28.5 | 28.7 | 27.6 |

Note. Respondents were asked to check all options that applied.

Urban and non-urban dietitians differed in their preferences for the length of continuing education programs (see Table 9).

Almost 75 percent of urban dietitians preferred half-day programs

whereas almost 90 percent of non-urban dietitians preferred one day programs. One and two hour programs were more popular with urban than non-urban dietitians. Almost one-quarter of urban dwellers had no preference for length of program compared to less than 10 percent of non-urban dwellers. Preferences for length of program reported by urban dietitians were similar to that of all respondents.

Table 9

Length of Program Preferred for Continuing Education

| Length of program | % of dietitians | | |
|-------------------|----------------------------|------------------|---------------------|
| | All respondents (n=158) | Urban (n=129) | Non-urban (n=29) |
| One hour | 45.6 | 54.3 | 6.9 |
| Two hour | 43.7 | 48.8 | 20.7 |
| Half-day | 73.4 | 76.7 | 58.6 |
| One day | 72.8 | 69.0 | 89.7 |
| Two day | 38.0 | 34.9 | 51.7 |
| No preference | 19.6 | 22.5 | 6.9 |

Note. Respondents were asked to check all options that applied.

Almost all urban and non-urban dietitians preferred Winnipeg as the center in which to hold continuing education programs (see Table 10). Sixty-two percent and 40 percent of non-urban and urban respondents, respectively, were willing to travel to Brandon to attend programs.

Table 10

Centres Dietitians Willing to Travel to Attend Continuing Education Programs

| Location of program | % of dietitians (n=158) | |
|---------------------|-------------------------|---------------------|
| | Urban (n=129) | Non-urban (n=29) |
| Winnipeg | 100.0 | 93.1 |
| Brandon | 40.3 | 62.1 |
| Portage la Prairie | 33.3 | 51.7 |
| Other | 7.0 | 24.1 |

Continuing Education Learning Needs

Each of the 75 topics included in the survey were scored, with 3 = high need; 2 = moderate need; 1 = low need; and 0 = no need. The mean score for each topic in the three categories of (a) nutritional care sciences; (b) behavioral, communicative, socio-cultural sciences; and (c) managerial sciences are indicated in the Appendices G to I, respectively. The top 10 learning needs for all respondents in all three science categories are listed with their mean score in Table 11. Unless otherwise indicated the number of respondents was 158 for each learning need topic. Six of the top 10 learning needs for all respondents were from the behavioral/communicative sciences, 3 were from the nutritional care sciences and only 1 topic was from the managerial sciences. The managerial science topics generally scored lower than those in the other two categories. The range of scores for the managerial sciences were 1.28 to 2.16 compared to 1.49 to 2.25 in the behavioral sciences and 1.63 to 2.21 in the nutritional care sciences (see Appendices G-I).

Table 11

Continuing Education Learning Needs of Dietitians

| Topic ^a | Score ^b for all respondents (n=158) |
|------------------------------------|---|
| Effective interviewing (n=157) | 2.25 |
| Effective counselling | 2.25 |
| Communication skills | 2.21 |
| Diet & disease prevention (n=157) | 2.21 |
| Diet & cancer | 2.20 |
| Teaching methods & devices (n=157) | 2.18 |
| Nutritional status assessment | 2.16 |
| Computers in nutritional care | 2.16 |
| Assertiveness training | 2.08 |
| Assessing dietary compliance | 2.06 |

^aListed in descending order. ^bScore: 3 = high need, 2 = moderate need, 1 = low need.

As indicated in Table 12, 9 of the top 10 topics chosen by those in the area of clinical nutrition were from the nutritional care sciences category. The top ranking topic in this category was nutritional status assessment. For those indicating administrative dietetics as their area of professional responsibility or interest, 8 of their top 10 topics were from the managerial sciences category. Computers in food service was the top ranking topic for this group of dietitians. Dietitians falling into the "other" area of professional responsibility included those working or interested in outpatient counselling, education, community and sales/marketing. For this "other" category, 7 of their top 10 learning needs were from the behavioral/communicative sciences category; the remaining three learning needs fell under the nutritional care sciences

Table 12

Rank of Continuing Education Learning Needs by Professional Responsibility and Location

| Rank of topic ^a | Area of professional responsibility | | | Location | |
|----------------------------|-------------------------------------|--|------------------------------|-------------------------------|---|
| | Clinical (n=47) | Administration (n=43) | Other (n=36) | Urban (n=129) | Non-urban (n=29) |
| 1. | Nutritional status assessment | Computers in food service | Effective interviewing | Effective interviewing | Diet & disease prevention |
| 2. | Diet & G.I. disease | Computers in nutritional care | Communication skills | Effective counselling | Assessing dietary compliance |
| 3. | Nutritional support | Managerial effectiveness | Effective counselling | Communication skills | Effective counselling |
| 4. | Diet & heart disease | Planning, budgeting & cost control | Teaching methods & devices | Diet & cancer | Obesity therapies |
| 5. | Diet & hypertension | Effective interviewing | Diet & disease prevention | Teaching methods & devices | Quality assurance |
| 6. | Diet & cancer | Quality assurance | Obesity therapies | Nutritional status assessment | Diet & cancer |
| 7. | Geriatric nutrition | Profit food services | Diet & cancer | Computers in nutritional care | Effective interviewing |
| 8. | Computers in nutritional care | Leadership | Computer use in education | Diet & disease prevention | Communication skills |
| 9. | Drug-nutrient interactions | Computer use in education | Adult ed. principles | Assertiveness training | Geriatric nutrition |
| 10. | Diet & renal disease | Labour relations/New food systems ^b | Educational program planning | Geriatric nutrition | Educational program planning/Teaching methods & devices/Diet & heart disease ^b |

^aRank based on highest need scores. ^bTopics received same mean score.

category. The top ranking need for other dietitians was effective interviewing. As shown in Table 12, the urban dietitians' learning needs simulated those of all respondents, with 9 of their top 10 learning needs being similar to those of all dietitians. Non-urban dietitians' top 10 learning needs differed from urban as well as all dietitians in three topic areas. Only the topic, effective counselling, occurred in both urban and non-urban dietitians' top five learning needs.

Comments were solicited from each respondent to the questionnaire regarding other needs or preferences related to continuing education. Twenty percent of dietitians (n=32) wrote comments. These are summarized in Appendix J. Comments that may be helpful in the interpretation of results from non-urban dietitians included: (a) programs of half-day to two days preferred due to time required to travel to Winnipeg, (b) one hour sessions not worthwhile to non-Winnipeg dietitians, (c) tape library an asset to non-Winnipeg dietitians, and (d) difficult to obtain continuing education credits due to most programs being held in urban centers. Other comments of pertinence were: (a) evening programs preferred for full-time mothers, (b) reduced registration fees suggested for unemployed/part-time dietitians, and (c) continuing education should address current issues but not at a basic level.

Summary

The response rate to this questionnaire assessing the continuing education learning needs and preferences of Manitoba dietitians was 95 percent.

Most of the respondents (n=158) were from Winnipeg, employed full-time for more than 5 years and under 40 years of age. A similar percentage indicated clinical nutrition or administrative dietetics as their area of specialty or interest. Most were members of their national association (CDA). For those indicating whether or not they met MARD's continuing education guidelines, 66 percent answered positively.

The top four factors that affected the respondents' participation in continuing education were: (a) topic offered, (b) location of programs, (c) times of programs, and (d) employer support. Location was the number one factor for non-urban dietitians while urban dietitians chose the topic offered. The top five ranking topics, with regard to learning need, for all respondents were: (a) effective interviewing, (b) effective counselling, (c) communication skills, (d) diet and disease prevention, and (e) diet and cancer. Those in clinical dietetics tended to choose nutritional care topics more often than managerial or behavioral science topics. Their top ranked learning need was nutritional status assessment. Those in administrative dietetics chose topics from the managerial sciences more frequently, with computers in food service as their number one learning need. Urban dietitians' learning needs simulated those of all respondents.

Most dietitians preferred to have continuing education programs held in Winnipeg during the month of October. The preferred lengths of programs were a half day or full day. Saturday all day (900-1600 hours) was the most popular day for

urban and non-urban respondents. Monday to Thursday afternoons (1300-1600 hours) and evenings (1600-1800; 1900-2100 hours) were also popular times for over 50 percent of all respondents.

There was little discrepancy between what dietitians expected and actually received regarding employer support of continuing education programs. Most expected and received paid time off work. More expected employer contribution toward part of registration fees or part of travel and accommodation than actually received it.

Almost all dietitians in the past had learned about continuing education programs from MARD. Over 60 percent learned about programs through mailings from their workplace.

Chapter 5

Discussion, Recommendations and Conclusions

Discussion

The response rate of 95 percent to this survey is much greater than that obtained in similar studies. Schwartz (1986) and Upton and Hedley (1986) reported response rates of 68 percent and 53 percent, respectively. Similar studies among US dietitians reported response rates of 39 to 60 percent (Burkholder and Eisele, 1984; Cross et al. 1984; Vanderveen and Hubbard, 1979). This high response rate could be attributed to the two follow-up procedures --a postcard reminder at one week and telephone call at three weeks. Eighty percent of respondents returned their questionnaire by Week 3, so the additional 15 percent who responded thereafter could be at least partly attributed to the follow-up telephone call. Two questions, however, were either skipped or poorly answered which could reflect a problem with question design not found during the validation and piloting of the questionnaire.

As reported by the Points-Subcommittee for MARD, 64 percent of dietitians in 1984-85 obtained the recommended 15 continuing education credits (D. Daley, personal communication, October 10, 1985). Results of this survey indicated that 66 percent obtained the 15 credits. The 2 percent discrepancy could be attributed to the fact that 26 members were deleted from the MARD membership list due to retirement, resignation, a move out-of-province, or their involvement in the piloting of the questionnaire. More urban than

non-urban dietitians were able to obtain at least 15 credits which may be an indication that non-urban dietitians' needs are not being met as fully as urban dietitians' needs.

Manitoba dietitians learn about continuing education programs mostly through mailings from MARD and their workplace. Ten dietitians did not answer the question on other professional organization memberships. This may be a reflection of there being no choice given for those with no other memberships in professional organizations.

Topic offered, location and times of programs (in that order) were expressed as the major factors impacting on the dietitians' participation in continuing education. These same three factors were reported by other researchers to be among the top four factors affecting participation in continuing education (Broski and Upp, 1979; Cross et al. 1984; Schwartz, 1986).

Schwartz (1986) found that for BC dietitians, interest in topic offered, convenient time and convenient location (in that order) were the three incentives reported to have the most impact on participation. Similarly, Illinois dietitians (Cross et al. 1984) reported the negative of these same three factors in the top four reasons for not attending continuing education. The fourth reason given was the cost of programs which was the second most common reason for not attending continuing education programs. Manitoba dietitians reported the cost of participating in continuing education as the fifth reason of importance. Employer support preceded cost in its overall impact on participation. Cost

of participating in continuing education was also a factor of importance to upper mid-western state dietitians (Cross et al. 1984). Schwartz (1986) found that encouragement from employer was the fifth most important incentive and lack of the same the least important deterrent.

Family support and the number of continuing education credits available were factors having little effect on the participation of Manitoba dietitians in continuing education. Burkholder and Eisele (1984), Cross et al. (1984), Schwartz (1986), and Smorynski and Parochka's (1979) results concur. Other researchers did not determine the effect of the availability of child care on participation but this factor had almost no effect on Manitoba dietitians. It did, however, affect non-urban dietitians more than urban dietitians as did most of the other factors. Only one other study distinguished between urban and non-urban dietitians' responses and they found that location was the factor listed most often by dietitians living outside the metropolitan area whereas interest in the topic offered was most often indicated by the metropolitan dietitians (Cross et al. 1984). This study reported the same trends for non-urban and urban dietitians, respectively.

Employer support had between some and much effect on Manitoba dietitians' participation in continuing education whereas it had between no and some effect on BC dietitians (Schwartz, 1986). Consistent with this finding, Manitoba dietitians appear to receive more employer support related to paid time off work, and coverage of registration fees and travel costs than BC dietitians (Schwartz, 1986). The discrepancies between actual and expected contributions

from employer were much less for Manitoba dietitians. In fact, for two of the factors--coverage of registration fees and travel and accommodation costs, dietitians generally received more contribution from their employer than was expected. Only 12 percent of Manitoba dietitians reported receiving no support from their employer compared to 25 percent of BC dietitians (Schwartz, 1986).

Given that the time and location of programs were among the top three factors of most influence on the participation of Manitoba dietitians in continuing education, it was important to determine the best times and locations for programs. For all dietitians, urban and non-urban alike, October was the most convenient month, followed by March, April and September. Non-urban dietitians preferred full-day programs, with Friday and Saturday being the days on which most were available. Non-urban dietitians generally were not available for programs less than a half-day in length held during the week between 1600 and 1800 hours or 1900 to 2100 hours. Non-urban dietitians may feel attending full-day programs is more worthwhile, considering the travel time and costs incurred. Saturday, their first choice, may conflict less than other days with work and home responsibilities.

Most urban dietitians were available on Saturdays but their first preference was a half-day program followed by a full-day program. For half-day programs, most urban dietitians were available on Tuesday to Friday afternoons (1300-1600 hours). Over 50 percent of urban dietitians preferred one hour programs with

Monday to Thursday, 1600 to 1800 hours or 1900 to 2100 hours, being acceptable times.

Winnipeg was clearly the most popular center to which all dietitians, including urban and non-urban, were willing to travel. However, for over 60 percent of non-urban dietitians, Brandon was their second choice. Forty percent of urban dietitians also would be willing to travel there for a program of interest to them. Since location is the factor of most impact on non-urban dietitians, an occasional program held in Brandon might accommodate this group and still attract a reasonable percentage of Winnipeg dietitians. Based on one written comment from a rural Manitoba dietitian, non-urban dietitians may feel left out of the planning process when all programs are held in the urban center.

Given that the topic offered is a factor impacting on all dietitians to some or much degree, it was critical to identify the topics of most need.

Although other researchers determined the dietitians' most salient needs in a similar manner to this study, mean need scores for each topic were not derived but rather those with a moderate or high need for each topic were combined to come up with an overall percentage of dietitians expressing a high to moderate need (Burkholder and Eisele, 1984; Schwartz, 1986; Upton & Hedley, 1986; Vanderveen and Hubbard, 1979). Using either method to determine most salient needs did not affect the order of the top three to four learning needs but thereafter the picture was confused by combining those expressing either a moderate or high need. For

example, 50 and 20 percent could express a high and moderate need for one topic, respectively, while 60 and 10 percent could express a high and moderate need for another topic, respectively. Seventy percent would be expressing a high to moderate need for both topics, when the second topic was clearly the one of highest need. Using a mean score reflects this difference.

Using the mean score method, the top three learning needs for all Manitoba dietitians were effective interviewing, effective counselling and communication skills. Schwartz (1986) found a similar trend with communication skills, effective counselling and effective interviewing among the top four needs. Other researchers did not report similar findings (Burkholder and Eisele, 1984; Vanderveen and Hubbard, 1979).

Within the category of nutritional care sciences, the topics with the highest need score represented either prevalent conditions or provincial and national issues, for example, diet and cancer, diet and disease prevention and geriatric nutrition. Lowest need scores were found for highly specialized conditions or situations likely to be encountered by few respondents such as critical care, non-traditional diets, and nutrition for physical rehabilitation or mental impairment. Other researchers reported similar findings (Burkholder and Eisele, 1984; Schwartz, 1986; Vanderveen and Hubbard, 1979).

Among the behavioral, communicative and socio-cultural sciences, practical skill-oriented topics were rated high such as effective interviewing, effective counselling, communication skills

and teaching methods. Areas infrequently performed by many dietitians such as writing for popular press and public speaking yielded the lowest need score. Schwartz's (1986) findings simulate these with Burkholder and Eisele's (1984) and Vanderveen and Hubbard's (1979) results showing only modest similarities.

Learning need scores in the managerial sciences category were generally lower than for the other two areas, although a similar percentage of dietitians expressed responsibility in clinical and administrative dietetics. The most highly rated needs, such as motivation, decision making, and managerial effectiveness were reflective of conceptual and human ability.

Computers in nutritional care received the highest score as did a similar topic, computers as management tools, in Upton and Hedley's (1986) study. Although Schwartz (1986) categorized these two computer topics with the behavioral sciences, had computers in nutritional care been recategorized with the managerial sciences it, too, would have received the highest need rating within the managerial category. Lowest need scores were related somewhat to technically-oriented or specialized topics such as, new food systems, profit food service and recipe development. These results were moderately consistent with Schwartz (1986) but varied greatly from other studies of dietitians' managerial learning needs (Burkholder and Eisele, 1984; Upton & Hedley, 1986; Vanderveen and Hubbard, 1979).

The question on area of professional responsibility was answered by only 80 percent of the respondents (n=126) which may

reflect the omission of a general dietetics category as Upton & Hedley (1986) included in their study. They found that 14 percent of Canadian dietitians fell under this generalist category. Even considering the poor response to this question, dietitians indicating clinical responsibilities generally rated topics within the nutritional care sciences to be of higher need than those within the managerial sciences. Similarly, administrative dietitians generally rated the managerial science topics higher than did clinical dietitians. Burkholder and Eisele (1984) and Schwartz (1986) reported similar findings.

Those dietitians classified as "other" tended to rank topics within the behavioral, communicative and socio-cultural sciences category as areas of highest need. Of interest, however, is the low degree of differences in learning needs in this category across all professional roles. This trend may reflect the practical value of these topic areas to all dietitians. For example, effective interviewing and counselling skills are critical to the clinical or outpatient dietitian from a patient perspective and to the administrative dietitian from a staff perspective. Such a topic would be ideal for a provincial education program as it would attract dietitians across all professional roles. Schwartz (1986) reported very similar findings.

This study also attempted to identify differences in learning needs between urban and non-urban dietitians. The learning needs of urban dietitians were almost identical to those of all (urban and non-urban combined) dietitians which is not surprising given

that 82 percent of all dietitians are from the urban center. There was, as well, definite overlap in the learning needs of urban and non-urban dietitians. Only 3 of the top 10 learning needs of urban dietitians were not in the top 10 learning needs of non-urban dietitians. However, two of these three topics, namely, nutritional status assessment, and computers in nutritional care, received a higher need score by non-urban dietitians. In fact, overall, the non-urban dietitians' need scores were higher (61 of the 75 topics). Hence, continuing education programs designed to fulfil the most salient learning needs of urban dietitians also will fulfil the needs of non-urban dietitians in most cases.

Recommendations

To accommodate the expressed learning needs and preferences of Manitoba dietitians, MARD should consider making a few changes in their present continuing education programming. Provincial annual continuing education programs are typically held in Winnipeg on a Thursday and Friday in March. One day is generally designed for clinical dietitians and the other day for administrative dietitians. Half-day programs are generally not available. One hour programs are offered monthly in Winnipeg, generally on Thursdays between 1530 and 1730 hours. Different one hour programs are planned for administrative and clinical dietitians.

The following listing of changes should be considered by MARD in planning future continuing education programs.

1. October would appear to be a more convenient month than March for all dietitians, including urban and non-urban. One day

programs, held in Winnipeg, are popular with both urban and non-urban dietitians but Saturday (900-1600 hours) was clearly preferred over Thursday or Friday for all concerned.

2. Programs typically have been separately aimed at clinical and administrative dietitians but almost 30 percent of Manitoba dietitians work in other capacities including, education, outpatient counselling and community. Some of the learning needs of administrative, clinical and "other" dietitians overlapped so programs need not always be designed for any one particular group. For example, an annual conference addressing the topic area of effective interviewing or effective counselling skills would accommodate all areas of professional responsibility as well as the urban and non-urban dietitian.

3. One hour programs, which are only available to urban dietitians, could be more efficient if, occasionally, the topics met an expressed need of all dietitians, no matter what the area of professional responsibility. For example, the topic computers in nutritional care, was popular with both clinical and administrative dietitians.

4. Urban dietitians clearly preferred half-day programs over one hour programs so perhaps the typical monthly one hour program should be lengthened to a half-day. This way, a half-day program which generally offers three continuing education credits (versus 1 credit for 1 hour) could be held every three months. Such an adjustment would also accommodate almost 60 percent of non-urban dietitians whereas one hour programs were not available to 93

percent of them. The best times on which to hold half-day programs, for urban and non-urban dietitians alike, would be on afternoons, Monday to Friday or Saturday mornings or afternoons.

5. If MARD continues to hold one hour programs to address the needs of urban dietitians, who certainly are the majority, then evenings (1900-2100 hours) should be considered as this time was preferred to the present time slot of late afternoons (1600-1800 hours).

6. For programs planned to meet the specific needs of clinical dietitians, topics should include, nutritional status assessment, diet and gastrointestinal disease, nutritional support and diet and heart disease. Administrative dietitians clearly feel a need for more knowledge related to computers (e.g., food service and nutritional care) as well as managerial effectiveness and planning, budgeting, and cost control.

7. A one day program held in Brandon should be considered by MARD to accommodate non-urban dietitians. The topics for such a program, according to the expressed learning needs of this group, should be diet and disease prevention, assessing dietary compliance or effective counselling. These three topics were also in the top 10 ranked needs of all dietitians, and two of the topics were in the top 10 ranked needs of urban dietitians (diet and disease prevention, effective counselling). Forty percent of urban dietitians were willing to travel to Brandon for a topic of interest to them.

8. Since Manitoba dietitians learn about continuing education programs mostly through mailings from MARD and their workplace, MARD should ensure that all programs of interest to dietitians are advertised through the MARD newsletter and through mailings to the dietitian's workplace (e.g., hospitals, nursing homes).

MARD should consider the above results in their planning of continuing education programs over the next two to three years. Thereafter, the results of this study are likely invalid. MARD should then reassess the learning needs of dietitians. The same questionnaire could be simplified to address preferences related only to the learning needs and the time and length of programs. The present listing of learning needs would require some updating to reflect the current trends and technological advances of that time period. Demographic data could be limited to area of professional responsibility, employment status and perhaps year of graduation. The question on area of professional responsibility should include a general dietetics category. The areas of education, community outpatient/counselling, sales/marketing and other could be combined to one area -- other, as those in these areas each represented a small percentage of MARD members. Data on employment status and year of graduation would help to define the population and identify any changes since this study.

Conclusion

It is essential that health professionals be involved in determining their continuing education needs and preferences and

that programs be designed to meet these needs to enhance their relevance, accessibility and availability. A mail questionnaire is one means of assessing need and it is this technique that was applied to determine the continuing education needs of Manitoba dietitians.

APPENDICES

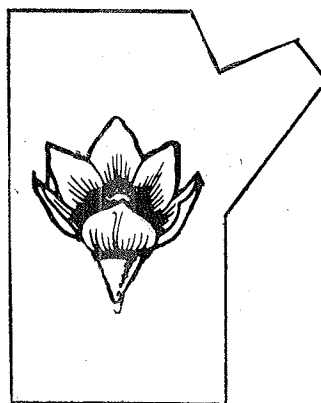
Appendix A

A Province-wide Survey of Manitoba Registered Dietitians'
Continuing Education Needs and Preferences - Questionnaire

A PROVINCE-WIDE SURVEY OF MANITOBA REGISTERED
DIETITIANS' CONTINUING EDUCATION NEEDS
AND PREFERENCES

This survey is being carried out to identify what factors affect your participation in professional continuing education programs and what your continuing education needs and preferences are. Please answer all the questions. If you wish to comment on any questions or qualify your answers please feel free to use the space provided on the back page. Your comments will be read and taken into account. It should not take you longer than 20 minutes to complete this questionnaire.

Thank you for your help.



3470 Eldridge Avenue
Winnipeg, Manitoba R3R 2X6

The purpose of the first section of questions is to learn more about what factors affect your participation in continuing education programs.

- Q-1. Considering the continuing education programs you have attended, how did you generally learn about programs being offered? (Circle all numbers that apply.)
1. Mailings from MARD
 2. Mailings from Canadian Dietetic Association
 3. Mailings from other organizations I belong to
 4. Mailings received by my workplace
 5. Other (please specify) _____
- Q-2. In your current position or when you were last employed what was/is your employer's contribution toward your continuing education? (Circle all numbers that apply.)
1. Paid time off work
 2. All registration fees paid
 3. Part of registration fee paid
 4. All travel and accommodation paid
 5. Part of travel and accommodation paid
 6. No contribution
 7. Not applicable
- Q-3. What do/would you expect your employer to contribute toward your continuing education? (Circle all numbers that apply.)
1. Provide paid time off work
 2. Pay all registration fees
 3. Share cost of registration
 4. Pay all travel and accommodation expenses
 5. Share cost of travel and accommodation
 6. Contribute nothing
- Q-4. Listed below are factors that may influence your participation in continuing education programs. For each factor circle one of the following which best describes the impact that factor would have on your participation.
- Much Effect
Some Effect
No Effect
- | Effect on participation
(Circle your answer) | | | |
|--|------|------|----|
| 1. Employer support | Much | Some | No |
| 2. Family support | Much | Some | No |
| 3. Location of programs | Much | Some | No |
| 4. Times of programs | Much | Some | No |
| 5. Topic offered | Much | Some | No |
| 6. Number of continuing education credits available . . . | Much | Some | No |
| 7. Monetary cost of participating. . | Much | Some | No |
| 8. Availability of child care at the program | Much | Some | No |
| 9. Other (please specify) _____ . | Much | Some | No |

The next few questions concern the types of continuing education programs you prefer.

- Q-5. On the grid below please check the time(s) for each day of the week that you would be generally able to attend a continuing education program? (Check as many times as apply.)

| Days of Week | Times of Day | | | |
|--------------|--------------|----------|----------|----------|
| | 9 a.m.-12 | 1-4 p.m. | 4-6 p.m. | 7-9 p.m. |
| Monday | | | | |
| Tuesday | | | | |
| Wednesday | | | | |
| Thursday | | | | |
| Friday | | | | |
| Saturday | | | | |
| Sunday | | | | |

- Q-6. What is the length of continuing education programs you prefer? (Circle all numbers that apply.)

1. One Hour
2. Two Hour
3. Half-day
4. One day
5. Two day
6. No preference

- Q-7. What are the most convenient months for you to attend continuing education programs? (Circle all numbers that apply.)

1. January
2. February
3. March
4. April
5. May
6. June
7. July
8. August
9. September
10. October
11. November
12. December
13. No preference

- Q-8. To which major center(s) would you be willing to travel to attend a continuing education program of interest to you? (Circle all numbers that apply.)

1. Winnipeg
2. Brandon
3. Portage la Prairie
4. Other (please specify) _____

Another important part of this study is to collect information about your learning needs in dietetics.

Q-9. Rate each topic listed below according to the degree of **need** you **feel** for additional **knowledge** in that area.

| Degree of Need for More Knowledge (Circle your answer) | | | | |
|---|------|----------|-----|----|
| 1. Food safety/additives | High | Moderate | Low | No |
| 2. Non-traditional diets | High | Moderate | Low | No |
| 3. Food/nutrition faddism | High | Moderate | Low | No |
| 4. Nutrition and athletic performance | High | Moderate | Low | No |
| 5. Nutrition and immunology | High | Moderate | Low | No |
| 6. Nutrition in alcohol and drug abuse | High | Moderate | Low | No |
| 7. Nutritional status assessment. | High | Moderate | Low | No |
| 8. Nutritional support | High | Moderate | Low | No |
| 9. Critical care (burns, surgery, trauma) | High | Moderate | Low | No |
| 10. Long-term and home care | High | Moderate | Low | No |
| 11. Diet and gastrointestinal disease | High | Moderate | Low | No |
| 12. Diet and renal disease | High | Moderate | Low | No |
| 13. Diet and heart disease | High | Moderate | Low | No |
| 14. Diet and hypertension | High | Moderate | Low | No |
| 15. Food allergies/intolerances | High | Moderate | Low | No |
| 16. Osteoporosis and arthritis | High | Moderate | Low | No |
| 17. Diet and cancer | High | Moderate | Low | No |
| 18. Diet and disease prevention | High | Moderate | Low | No |
| 19. Obesity therapies | High | Moderate | Low | No |
| 20. Hypoglycemia | High | Moderate | Low | No |
| 21. Insulin-dependent diabetes mellitus | High | Moderate | Low | No |
| 22. Non-insulin-dependent diabetes mellitus | High | Moderate | Low | No |
| 23. Anorexia nervosa/bulimia | High | Moderate | Low | No |
| 24. Nutrition for mental impairment | High | Moderate | Low | No |
| 25. Nutrition in physical rehabilitation | High | Moderate | Low | No |
| 26. Drug-nutrient interactions | High | Moderate | Low | No |
| 27. Nutrition in pregnancy and lactation | High | Moderate | Low | No |
| 28. Infant/pediatric nutrition | High | Moderate | Low | No |
| 29. Adolescent nutrition | High | Moderate | Low | No |
| 30. Geriatric nutrition | High | Moderate | Low | No |

| |
|--|
| Degree of Need for More Knowledge (Circle your answer) |
|--|

| | | | | |
|--|------|----------|-----|----|
| 31. Communication skills | High | Moderate | Low | No |
| 32. Effective interviewing | High | Moderate | Low | No |
| 33. Effective counselling | High | Moderate | Low | No |
| 34. Assertiveness training | High | Moderate | Low | No |
| 35. Medical recording skills | High | Moderate | Low | No |
| 36. Teaching methods and devices . . | High | Moderate | Low | No |
| 37. Educational program planning . . | High | Moderate | Low | No |
| 38. Adult education principles . . . | High | Moderate | Low | No |
| 39. Preparation/use of audio- | | | | |
| visual aids | High | Moderate | Low | No |
| 40. Use of mass media in education . | High | Moderate | Low | No |
| 41. Marketing nutrition programs . . | High | Moderate | Low | No |
| 42. Effective participation on | | | | |
| radio and TV | High | Moderate | Low | No |
| 43. Writing for the popular press. . | High | Moderate | Low | No |
| 44. Writing proposals for funded | | | | |
| projects | High | Moderate | Low | No |
| 45. Lobbying skills | High | Moderate | Low | No |
| 46. Public speaking | High | Moderate | Low | No |
| 47. Socio-cultural aspects of | | | | |
| nutrition | High | Moderate | Low | No |
| 48. World food and nutrition | | | | |
| issues | High | Moderate | Low | No |
| 49. Economics of health care | High | Moderate | Low | No |
| 50. Computer use in education . . . | High | Moderate | Low | No |
| 51. Developing nutritional | | | | |
| care plans | High | Moderate | Low | No |
| 52. Assessing dietary compliance . . | High | Moderate | Low | No |

| |
|--|
| Degree of Need for More Knowledge (Circle your answer) |
|--|

| | | | | |
|--|------|----------|-----|----|
| 53. Administrative management theory | High | Moderate | Low | No |
| 54. Motivational theories | High | Moderate | Low | No |
| 55. Group dynamics and organizational behavior | High | Moderate | Low | No |
| 56. Decision making | High | Moderate | Low | No |
| 57. Leadership styles and effectiveness | High | Moderate | Low | No |
| 58. Managerial effectiveness and efficiency | High | Moderate | Low | No |
| 59. Labor management relations | High | Moderate | Low | No |
| 60. Job descriptions and performance standards | High | Moderate | Low | No |
| 61. Performance evaluation methods | High | Moderate | Low | No |
| 62. Employee recruitment, selection and training | High | Moderate | Low | No |
| 63. Human resource requirements and utilization | High | Moderate | Low | No |
| 64. Food quality and quantity control | High | Moderate | Low | No |
| 65. Recipe development/new product testing | High | Moderate | Low | No |
| 66. Planning, budgeting and cost control | High | Moderate | Low | No |
| 67. Sanitation principles and regulations | High | Moderate | Low | No |
| 68. Computers in food service management | High | Moderate | Low | No |
| 69. Computers in nutritional care. | High | Moderate | Low | No |
| 70. Food marketing and purchasing trends | High | Moderate | Low | No |
| 71. Non-traditional food preparation and delivery systems. | High | Moderate | Low | No |
| 72. Profit-oriented food services. | High | Moderate | Low | No |
| 73. Workplace safety and health. | High | Moderate | Low | No |
| 74. Developing policy and procedure manuals | High | Moderate | Low | No |
| 75. Quality assurance, (auditing). | High | Moderate | Low | No |
| 76. Other (please specify) _____ | High | Moderate | Low | No |
| 77. Other (please specify) _____ | High | Moderate | Low | No |

SECTION C: General Information

Finally, it is important to ask you some questions about yourself to help interpret the results.

Q-10. Were you able to obtain at least 15 continuing education credit points during 1984-85? (Circle number of your answer.)

1. Yes
2. No

Q-11. What is your current employment status in the food, nutrition or dietetics field? (Circle number of your answer.)

1. Employed full-time (includes self-employment)
2. Employed part-time (includes self-employment)
3. Student
4. Retired
5. Not employed outside the home
6. Unemployed - looking for work
7. Employed outside profession

Q-12. What is your current area of professional responsibility in dietetics or area of interest if not employed? (Circle the number that best reflects the area which occupies the greatest portion of your worktime.)

1. Clinical/therapeutic nutrition
2. Administrative dietetics
3. Education
4. Research
5. Community
6. Out-patient/counselling
7. Sales/marketing
8. Not applicable
9. Other (please specify) _____

Q-13. What professional organizations besides MARD are you a member of? (Circle all numbers that apply.)

1. Canadian Dietetic Association
 2. Canadian Home Economics Association
 3. Manitoba Home Economics Association
 4. Canadian Diabetes Association - Professional Health Workers Section
 5. Organization for Nutrition Education
 6. Canadian Hospital and Restaurant Association
 7. Canadian Food Service Executive Association
 8. Other (please specify) _____
-

Q-14. How many years have you been employed in the field of dietetics? (Circle number of your answer.)

1. None
2. Less than one year
3. 1 to 2 years
4. 3 to 5 years
5. 6 to 10 years
6. More than 10 years

Q-15. In what period did you graduate with your undergraduate degree? (Circle number of your answer.)

1. Before 1960
2. 1960 to 1969
3. 1970 to 1979
4. After 1980

Q-16. What is your age group? (Circle number of your answer.)

1. 20 to 29 years
2. 30 to 39 years
3. 40 to 49 years
4. 50 to 59 years
5. 60+ years

Is there anything else you would like to say regarding your continuing education needs or preferences? If so, please use the space below for this purpose.

Your contribution to this effort is greatly appreciated. A summary of the survey results will appear in the Manitoba Association of Registered Dietitians Newsletter as soon as available.

Appendix B

University of British Columbia Continuing Education in Nutrition
and Dietetics - Learning Needs Assessment

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Nancy E. Schwartz, Ph.D)

Please check or fill in blanks as appropriate.

1. District of B.C.D.N.A. membership (check one only):

| | |
|-------------------------|---------------------|
| _____ Greater Vancouver | _____ North East |
| _____ Fraser Valley | _____ North West |
| _____ Vancouver Island | _____ West Kootenay |
| _____ Thompson Valley | _____ East Kootenay |
| _____ Okanagan | |

2. Are you currently employed in the food, nutrition or dietetics field?

_____ Yes If yes, _____ full-time
 _____ part-time

_____ No If no, _____ employed outside profession
 _____ student
 _____ retired
 _____ not currently employed

IF NO, PROCEED TO QUESTION 5.

3. Current professional responsibility (check the one area which occupies the greatest portion of your work time):

☐ clinical/therapeutics ☐ education
☐ administrative ☐ research
☐ out-patient/counselling ☐ sales/marketing
☐ community ☐ other (please specify)

4. Number of other dietitians-nutritionists employed in your work setting:

_____ 0
 _____ 1
 _____ 2-4

_____ 5-8
 _____ >8

5. Number of years employed in nutrition-dietetics: _____

6. Age: _____ 20-24 _____ 30-34 _____ 40-44 _____ 50+
 _____ 25-29 _____ 35-39 _____ 45-49

7. Undergraduate degree from:
 _____ University of British Columbia
 _____ other Canadian university
 _____ non-Canadian university

8. Year of undergraduate degree: 19

9. Highest degree received:

____ Bachelor's degree
____ Master's degree
____ Doctoral degree

10. Major area of study for highest degree (check one only):
- | | |
|---|---|
| <input type="checkbox"/> Nutrition/Dietetics | <input type="checkbox"/> Health Care and Epidemiology |
| <input checked="" type="checkbox"/> Education | <input type="checkbox"/> Business Administration |
| <input type="checkbox"/> Public Health | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Biological Sciences | |

11. Professional organizations of which you are a member:

_____ British Columbia Dietitians' and Nutritionists' Assn.
_____ Canadian Dietetic Association
_____ British Columbia Nutrition Council
_____ Organization for Nutrition Education
_____ Society for Nutrition Education
_____ Canadian Home Economics Association
_____ British Columbia Home Economics Association
_____ American Dietetic Association
_____ Cndn Diabetes Assn., Professional Health Workers Section
_____ other (please specify)

12. Route of entry to membership in B.C.D.N.A.:

internship _____ other _____

SECTION B: Continuing Education Profile

1. Listed below are some possible sources of continuing education for dietitians-nutritionists. Check the appropriate column to indicate the contribution of each source to your continuing education:

| | Vital | Some | Little | None | |
|-------------------------------------|-------|-------|--------|-------|----|
| Journals | _____ | _____ | _____ | _____ | 29 |
| Journal clubs | _____ | _____ | _____ | _____ | 30 |
| Other dietitians-nutritionists | _____ | _____ | _____ | _____ | 31 |
| Other health professionals | _____ | _____ | _____ | _____ | 32 |
| Continuing education programs | _____ | _____ | _____ | _____ | 33 |
| Annual conferences or conventions | _____ | _____ | _____ | _____ | 34 |
| Audio, video or slide/tape programs | _____ | _____ | _____ | _____ | 35 |
| University credit courses | _____ | _____ | _____ | _____ | 36 |

2. Listed below are several factors that may influence your participation in continuing education activities. Check the appropriate column to indicate the impact of each factor on your continuing education participation:

| Incentives | Much effect | Some effect | No effect | |
|--------------------------------|-------------|-------------|-----------|----|
| Encouragement from employer | _____ | _____ | _____ | 37 |
| Encouragement from family | _____ | _____ | _____ | 38 |
| Encouragement from colleagues | _____ | _____ | _____ | 39 |
| Convenient location of courses | _____ | _____ | _____ | 40 |
| Convenient times of courses | _____ | _____ | _____ | 41 |
| Interest in topics offered | _____ | _____ | _____ | 42 |
| Other (please specify) | _____ | _____ | _____ | 43 |

| Deterrents | Much effect | Some effect | No effect | |
|-------------------------------------|-------------|-------------|-----------|----|
| Family responsibilities | _____ | _____ | _____ | 44 |
| Work responsibilities | _____ | _____ | _____ | 45 |
| Lack of encouragement from employer | _____ | _____ | _____ | 46 |
| Not interested in topics offered | _____ | _____ | _____ | 47 |
| Lack of available courses in B.C. | _____ | _____ | _____ | 48 |
| Inconvenient location of courses | _____ | _____ | _____ | 49 |
| Inconvenient times of courses | _____ | _____ | _____ | 50 |
| Registration fees | _____ | _____ | _____ | 51 |
| Other (please specify) | _____ | _____ | _____ | 52 |

3. Indicate below your current employer's contribution toward your continuing education (check all that apply):
IF YOU ARE NOT EMPLOYED, PROCEED TO QUESTION 5.

| | |
|---|----|
| _____ Paid time off work | 53 |
| _____ All registration fees paid | 54 |
| _____ Part of registration fees paid | 55 |
| _____ All travel and accommodation paid | 56 |
| _____ Part of travel and accommodation paid | 57 |
| _____ Other (please specify) _____ | 58 |

4. Indicate below your expectations of your employer's contribution toward your continuing education (check all that apply):

| | |
|--|----|
| _____ Should provide paid time off work | 59 |
| _____ Should pay all registration fees | 60 |
| _____ Should share cost of registration | 61 |
| _____ Should pay all travel and accommodation expenses | 62 |
| _____ Should share cost of travel and accommodation | 63 |
| _____ Other (please specify) _____ | 64 |

5. Type of continuing education program you prefer (check all preferences that apply from each section below):

a) day of week:

| Mon | Tues | Wed | Thur | Fri | Sat | Sun | no preference | |
|-------|-------|-------|-------|-------|-------|-------|---------------|-------|
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | 2 3 4 |

b) time of day:

| morning | afternoon | evening | all day | no preference | |
|---------|-----------|---------|---------|---------------|-------|
| _____ | _____ | _____ | _____ | _____ | 5 6 7 |

c) length:

| half day | one day | two day | evening series | other (please specify) | |
|----------|---------|---------|----------------|------------------------|--------|
| _____ | _____ | _____ | _____ | _____ | 8 9 10 |

d) most convenient months:

| Jan | Feb - Mar | Apr | May - June | Jul - Aug | Sept | Oct - Nov | Dec | no preference | |
|-------|-----------|-------|------------|-----------|-------|-----------|-------|---------------|-------|
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | 11 12 |

e) format:

| | |
|---|----|
| _____ lectures | 32 |
| _____ workshops / conferences / seminars | 33 |
| _____ self-learning programs (e.g. audio, video or slide/tape programs) | 34 |
| _____ distance education (i.e. audioconferencing) | 35 |
| _____ in-service programs at work | 36 |
| _____ University or college credit courses | 37 |
| _____ other (please specify) _____ | 38 |

Listed below are several topics related to nutrition and dietetic practice. Rate each topic according to the degree of need that you feel for additional knowledge in that area. Circle the appropriate response for each topic, based on the following scale:

- 3 = High Need
2 = Moderate Need
1 = Low Need
0 = No Need

NUTRITIONAL CARE SCIENCES

| | | | | | |
|--------------------------|---------|----|--------------------------|---------|-------|
| Nutritional biochemistry | 3 2 1 0 | 39 | Inborn errors of | | |
| Nutritional physiology | 3 2 1 0 | 40 | metabolism | 3 2 1 0 | |
| Vitamin/mineral update | 3 2 1 0 | 41 | Diabetes | 3 2 1 0 | 57 |
| Fibre | 3 2 1 0 | 42 | Hypoglycemia | 3 2 1 0 | 58 |
| Food safety/additives | 3 2 1 0 | 43 | Obesity therapies | 3 2 1 0 | 59 |
| Nutrition labelling | 3 2 1 0 | 44 | Anorexia nervosa/bulimia | 3 2 1 0 | 60 |
| Non-traditional diets | 3 2 1 0 | 45 | Nutrition & cancer | 3 2 1 0 | 61 |
| Food/nutrition faddism | 3 2 1 0 | 46 | Food allergies & | | 62 |
| Nutrition and athletic | | | intolerances | 3 2 1 0 | |
| performance | 3 2 1 0 | 47 | Osteoporosis & arthritis | 3 2 1 0 | 63 |
| Nutrition & immunology | 3 2 1 0 | 48 | Nutrition for mental | | 64 |
| Nutrition in alcohol & | | | impairment | 3 2 1 0 | |
| drug abuse | 3 2 1 0 | 49 | Nutrition in physical | | 65 |
| Nutritional status | | | rehabilitation | 3 2 1 0 | |
| assessment | 3 2 1 0 | 50 | Drug-nutrient | | 66 |
| Nutritional support | 3 2 1 0 | 51 | interactions | 3 2 1 0 | |
| Critical care (burns, | | | Nutrition in pregnancy | | 67 |
| trauma, surgery) | 3 2 1 0 | 52 | & lactation | 3 2 1 0 | |
| Long-term & home care | 3 2 1 0 | 53 | Infant/pediatric | | 68 |
| Diet & heart disease | 3 2 1 0 | 54 | nutrition | 3 2 1 0 | |
| Diet & renal disease | 3 2 1 0 | 55 | Adolescent nutrition | 3 2 1 0 | 69 |
| Diet & GIT disease | 3 2 1 0 | 56 | Geriatric nutrition | 3 2 1 0 | 70 |
| | | | | | 71 |
| | | | | | 3 |
| | | | | | 1 |
| | | | | | 2 3 4 |

Circle the appropriate response for each topic, based on the following scale:

- 3 = High Need
2 = Moderate Need
1 = Low Need
0 = No Need

BEHAVIOURAL, COMMUNICATIVE AND SOCIO-CULTURAL SCIENCES

| | | | | | |
|--|---------|----|--|---------|----|
| Communication skills | 3 2 1 0 | 5 | Writing for the popular | | |
| Effective interviewing | 3 2 1 0 | 6 | press | 3 2 1 0 | |
| Effective counselling | 3 2 1 0 | 7 | Scientific/technical | | 17 |
| Assertiveness training | 3 2 1 0 | 8 | writing | 3 2 1 0 | |
| Teaching methods & devices | 3 2 1 0 | 9 | Writing proposals for funded projects | 3 2 1 0 | 18 |
| Educational program planning | 3 2 1 0 | 10 | Legislative process | 3 2 1 0 | 19 |
| Adult education principles | 3 2 1 0 | 11 | Lobbying skills | 3 2 1 0 | 20 |
| Preparation/use of AV aids | 3 2 1 0 | 12 | Economics of health care | 3 2 1 0 | 21 |
| Use of mass media in education | 3 2 1 0 | 13 | Socio-cultural aspects of nutrition | 3 2 1 0 | 22 |
| Public speaking | 3 2 1 0 | 14 | World food & nutrition issues | 3 2 1 0 | 23 |
| Debating & parliamentary procedure | 3 2 1 0 | 15 | Research process | 3 2 1 0 | 24 |
| Effective participation on radio & TV | 3 2 1 0 | 16 | Computer use in food systems management | 3 2 1 0 | 25 |
| | | | Computer use in nutritional care | 3 2 1 0 | 26 |
| | | | Computer use in research | 3 2 1 0 | 27 |
| | | | Medical recording skills | 3 2 1 0 | 28 |
| | | | | | 29 |

Circle the appropriate response for each topic, based on the following scale:

3 = High Need

2 = Moderate Need

1 = Low Need

0 = No Need

MANAGERIAL SCIENCES

| | | | |
|--|---------|---------------------------|---------|
| Administrative management | | Performance evaluation | |
| theory | 3 2 1 0 | methods | 3 2 1 0 |
| Motivational theories | 3 2 1 0 | Facility design/space | |
| Group dynamics & organiz- | | allocation | 3 2 1 0 |
| ational behaviour | 3 2 1 0 | Food service system | |
| Leadership styles & | | analysis | 3 2 1 0 |
| effectiveness | 3 2 1 0 | Planning, budgeting | |
| Managerial effectiveness | | & cost control | 3 2 1 0 |
| & efficiency | 3 2 1 0 | Problem solving process | |
| Labour-management | | in decision-making | 3 2 1 0 |
| relations | 3 2 1 0 | Food marketing & purchas- | |
| Determining manpower & | | ing trends | 3 2 1 0 |
| staffing requirements | 3 2 1 0 | Non-traditional food | |
| Employee recruitment, | | preparation & delivery | |
| selection, & training | 3 2 1 0 | systems | 3 2 1 0 |
| Job description & per- | | Health & safety laws | 3 2 1 0 |
| formance standards | 3 2 1 0 | Metric conversion | 3 2 1 0 |
| Manpower utilization & | | Auditing/quality | |
| cost analysis | 3 2 1 0 | assurance | 3 2 1 0 |
| | | | |
| List on the back of this page any additional topics on which you feel a need for continuing education. | | | |
| PLEASE CHECK TO BE SURE THAT ALL QUESTIONS HAVE BEEN ANSWERED | | | |

List on the back of this page any additional topics on which you feel a need for continuing education.

PLEASE CHECK TO BE SURE THAT ALL QUESTIONS HAVE BEEN ANSWERED.

THANK YOU FOR YOUR COOPERATION. RETURN QUESTIONNAIRE BY **OCTOBER 19** TO:
Continuing Education in the Health Sciences, I.R.C. Room #105, The

Appendix C

Letter and Questionnaire For Members of Validating Committee

3470 Eldridge Avenue
Winnipeg, Manitoba
R3R 2X6

April 1, 1986

Dear _____,

Thank you for agreeing to assist in the validation of a questionnaire I am developing to identify the continuing education preferences of registered dietitians.

The professional continuing education needs of active-practicing dietitians living in Manitoba have never been formally established. The factors that may affect their participation in continuing education are also unknown. It is known, however, that 35 percent of the membership of the Manitoba Association of Registered Dietitians (MARD) did not acquire the recommended 15 continuing education credit points in 1984-85. Why? Are continuing education programs not available, accessible or relevant to their needs?

I wish to establish what their professional continuing education needs and preferences are and what factors affect their participation in continuing education so future program planning can consider these needs and preferences. To ensure that the questionnaire actually measures what it was intended to measure, your assistance is requested. A cover letter on MARD letterhead (attached) will accompany the questionnaire, as will a pre stamped, preaddressed return envelope.

Could you complete the questionnaire - A Province-wide Survey of Manitoba Registered Dietitians' Continuing Education Needs and Preferences - and then answer a series of questions related to this questionnaire. Record the amount of time it took you to complete the questionnaire.

Please call me at 837-3523 when you complete both questionnaires and I will pick them up.

I hope to hear from you by April 9, 1986.

Your time and expertise is most appreciated.

Yours truly,

Janice Macdonald, R.D.
M.Ed. Student

Content Validation of Macdonald's Questionnaire

1. Information concerning the more common methods by which dietitians* learn about continuing education programs is desired so advertising efforts in the future can reach all interested persons. If dietitians learn about programs through other membership organizations then it is important to find out what these organizations are.
 - a. Can you think of other sources that should be added to the list in Q-1? (Circle number)
 1. YES (if yes, what sources _____)
 2. NO
 - b. Should any sources be deleted from Q-1? (Circle number)
 1. YES (if yes, which ones and why? _____)
 2. NO
 - c. Should any organizations be added to the list in Q-13? (Circle number).
 1. YES (if yes, which ones _____)
 2. NO
 - d. Should any organizations be deleted from Q-13? (Circle number).
 1. YES (if yes, which ones _____)
 2. NO
2. Employer support or lack of it could seriously affect the participation of dietitians in continuing education, particularly if it differs from what dietitians expect it should be.
 - a. Does Q-2 list all the various ways employers could support continuing education? (Circle number).
 1. YES
 2. NO (if no, what ways should be added or deleted?
_____)
3. It would be desirable to discover which factors positively and negatively affect dietitians' participation in professional continuing education so they could be considered in future planning.
 - a. Should any other common factors be added to the list in Q-4? (Circle number).
 1. YES (if yes, what factors _____)
 2. NO
 - b. Should any factors be deleted from the list? (Circle number).
 1. YES (if yes, what factors _____)
 2. NO

* Dietitian throughout this questionnaire refers to members of MARD who are active-practising and reside in Manitoba.

4. The next series of questions apply to questions Q-5 to Q-8 in the questionnaire.

If the time or location at which continuing education programs are held affects the dietitian's participation then it is important to find out what time(s) and location(s) they prefer. Related to convenient times and locations is the preferred length of continuing education and where dietitians are willing to travel to, to attend a program.

- a. By answering Q-5 to Q-8 could it be clearly established what month(s), day(s), time(s), location(s), and length(s) of programs dietitians preferred? (Circle number).

1. YES

2. NO (if no, which question(s) should be changed and why?

 _____)

5. In Q-9 dietitians will indicate their need for more knowledge on 75 topics. You may not be familiar with some of these topics based on your area of expertise. Please comment on the topics with which you feel comfortable.

- a. Should any topics be added to this list? (Circle number)

1. YES (if yes what topics and why? _____

 _____)

2. NO

- b. Should any topics to deleted? (Circle number)

1. YES (if yes, what topics? _____

 _____)

2. NO

6. In order to establish if there are any relationships between dietitians' preferences needs in continuing education and their age, area of professional responsibility, etc., is it necessary to determine some demographic characteristics of the dietitian population.

- a. Does Q-11 clearly establish the employment status of dietitians in dietetics? (Circle number)

1. YES

2. NO (if no, why not? _____

 _____)

- b. Does the listing of areas of professional responsibility in Q-12 address the more common areas? (Circle number)

1. YES

2. NO (if no, which ones should be added or deleted? _____

 _____)

- c. Are Q-14 to Q-16 clear? (Circle number)
1. YES
 2. NO (if no, why not _____)
7. Are there any questions in the questionnaire that you found difficult to interpret? (Circle number)
1. YES (if yes, which question(s) and why? _____)
 2. NO
8. Does the questionnaire create a positive impression, one that motivated you to answer it? (Circle number)
1. YES
 2. NO (if no, please comment _____)
9. Did/would you feel uncomfortable answering any of the questions, in particular Q-10? (It is recommended that dietitians accumulate at least 75 continuing education points in 5 years or 15 per year.) (Circle number)
1. YES (if yes, which one(s) and why? _____)
 2. NO
10. Were there any word(s) in the questionnaire that you did not understand? (Circle number)
1. YES (if yes, which word(s)? _____)
 2. NO
11. Does any aspect of the questionnaire suggest bias on the part of the researcher? (Circle number)
1. YES (if yes, which aspect(s)? _____)
 2. NO
12. How long did it take you to complete the questionnaire?
_____ mins.

General Comments: _____

Thank You For Your Time And Expertise.

Appendix D

Cover Letter to Each Active-Practising Dietitian in Manitoba

April 29, 1986

Ø

Dear Ø:

The Manitoba Association of Registered Dietitians (MARD) has been formally planning continuing education programs for its members since 1969 because they believe continuing education is an essential part of the life of a professional person. The challenge to the planners of continuing education is to ensure programs are available, accessible and relevant to members.

For my Masters of Education thesis project I am asking all registered dietitians living in Manitoba to express their professional continuing education learning needs and preferences. In order that the results will truly represent the needs of dietitians in Manitoba, it is important that each questionnaire be completed and returned.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so I may follow up those who do not return the questionnaire within three weeks of the mailing date. Your name will never be placed on the questionnaire.

The results of this research will be made available to the Executive of MARD. A summary of the results also will be placed in the MARD Newsletter when available.

I would be most happy to answer any questions you might have. Please write or call. The telephone number is 837-3523.

Thank you for your assistance.

Sincerely,

Janice D. Macdonald, R.D.
M.Ed. Student.

Appendix E

Postcard Follow-up Sent One Week After Original Mailing

May 6, 1986

Last week a questionnaire seeking your professional continuing education needs and preferences was mailed to you. The Board of Directors for the Manitoba Association of Registered Dietitians approved the use of their mailing list for this purpose.

If you have completed and returned the questionnaire to me, please accept my sincere thanks. If not, please do so today. If the results are to accurately represent the needs of Manitoba dietitians then a response from everyone is necessary.

If by some chance you did not receive the questionnaire or it got misplaced, please call me right now, collect (837-3523) and I will get another one in the mail to you today.

Sincerely,

Janice Macdonald, R.D.
M.Ed. Student.

Appendix F

Professional Organizations Memberships
Listed by Manitoba Dietitians

| Name of Organization | No. of times mentioned |
|---|---------------------------|
| <hr/> | |
| 1. American Association of Diabetes Educators | 3 |
| 2. Association of Nephrology Dietitians | 3 |
| 3. American Society for Parenteral and Enteral Nutrition | 3 |
| 4. Council on Renal Nutrition | 3 |
| 5. Consulting Dietitians of Canada | 2 |
| 6. Manitoba Assoc. on Gerontology | 2 |
| 7. Nutrition Today | 2 |
| 8. Society of Nutrition Education | 2 |
| 9. American Advance of Science | 1 |
| 10. American Hospital & Food Service Administration | 1 |
| 11. California Council Against Health Fraud | 1 |
| 12. Canadian Celiac Association | 1 |
| 13. Canadian Consultants Association | 1 |
| 14. Canadian Institute on Food Service & Technology | 1 |
| 15. Canadian Nutrition Society | 1 |
| 16. Canadian Public Health Association | 1 |
| 17. Manitoba Home Economics Teacher's Assoc. | 1 |
| 18. Manitoba Restaurant & Hotel Association | 1 |
| 19. Quebec Dietetic Association | 1 |
| 20. Others Listed once but not identifiable | 5 |

Appendix G

Continuing Education Learning Need Scores in the Nutritional Care Sciences

| Topic ^a | Score ^b of all respondents (n=158) ^c | Score ^b by professional responsibility (n=126) | | | Score ^b by location (n=158) | |
|--|--|---|---------------|--------------|--|------------------|
| | | Clinical (n=47) | Admin. (n=43) | Other (n=36) | Urban (n=129) | Non-Urban (n=29) |
| Diet & disease prevention (n=157) | 2.21 | 2.22 | 2.02 | 2.42 | 2.15 | 2.48 |
| Diet & cancer | 2.20 | 2.34 | 1.95 | 2.33 | 2.18 | 2.28 |
| Nutritional status assessment | 2.16 | 2.55 | 1.86 | 2.06 | 2.16 | 2.17 |
| Geriatric nutrition | 2.05 | 2.34 | 1.74 | 2.14 | 2.01 | 2.24 |
| Diet & heart disease (n=157) | 2.03 | 2.39 | 1.58 | 2.25 | 1.98 | 2.21 |
| Diet & hypertension | 2.00 | 2.38 | 1.60 | 2.22 | 1.98 | 2.07 |
| Obesity therapies (n=157) | 1.99 | 2.02 | 1.65 | 2.42 | 1.91 | 2.34 |
| Diet & G.I. disease | 1.97 | 2.50 | 1.58 | 2.06 | 1.96 | 2.00 |
| Nutrition/alcohol/drugs (n=157) | 1.97 | 2.19 | 1.50 | 1.69 | 1.93 | 2.10 |
| Food allergies/intolerances (n=156) | 1.96 | 1.93 | 1.79 | 2.03 | 1.89 | 2.00 |
| Nutritional support (n=156) | 1.95 | 2.45 | 1.86 | 1.67 | 1.94 | 2.00 |
| Osteoporosis/arthritis (n=157) | 1.94 | 1.98 | 1.79 | 2.14 | 1.90 | 2.14 |
| Nutrition & athletic perf. (n=155) | 1.90 | 2.02 | 1.62 | 1.83 | 1.87 | 2.00 |
| Nutrition & immunology (n=155) | 1.88 | 2.14 | 1.58 | 1.85 | 1.91 | 1.76 |
| Insulin dependent diabetes (n=156) | 1.84 | 2.11 | 1.40 | 2.11 | 1.78 | 2.11 |
| Drug-nutrient interactions (n=156) | 1.82 | 2.29 | 1.70 | 1.83 | 1.80 | 1.86 |
| Non-insulin dependent diabetes (n=157) | 1.82 | 2.06 | 1.44 | 2.14 | 1.77 | 2.03 |
| Anorexia nervosa/bulimia | 1.78 | 1.94 | 1.49 | 2.03 | 1.76 | 1.90 |
| Infant/pediatric nutrition | 1.78 | 2.04 | 1.30 | 2.03 | 1.74 | 2.00 |
| Long-term & home care (n=157) | 1.78 | 2.13 | 1.79 | 1.44 | 1.77 | 1.83 |
| Diet & renal disease (n=157) | 1.76 | 2.28 | 1.49 | 1.75 | 1.77 | 1.76 |
| Adolescent nutrition (n=157) | 1.69 | 1.83 | 1.28 | 1.86 | 1.64 | 1.90 |
| Nutrition in physical rehab. (n=157) | 1.68 | 1.96 | 1.60 | 1.92 | 1.66 | 1.75 |
| Hypoglycemia | 1.68 | 1.81 | 1.40 | 1.86 | 1.61 | 1.97 |
| Nutrition in preg. & lact. | 1.68 | 1.89 | 1.26 | 1.89 | 1.62 | 1.97 |
| Non-traditional diets (n=156) | 1.67 | 1.70 | 1.51 | 1.74 | 1.66 | 1.69 |
| Critical care (n=155) | 1.66 | 2.24 | 1.48 | 1.34 | 1.68 | 1.54 |
| Food safety (n=154) | 1.66 | 1.53 | 1.88 | 1.40 | 1.68 | 1.55 |
| Nutrition & mental impairment (n=157) | 1.65 | 1.70 | 1.67 | 1.67 | 1.63 | 1.76 |
| Food faddism (n=155) | 1.63 | 1.78 | 1.51 | 1.53 | 1.60 | 1.72 |

^aListed in descending order by learning need score for all respondents. ^bScore: 3 = high need; 2 = moderate need; 1 = low need. ^cn=158 unless otherwise indicated.

Appendix H

Continuing Education Learning Need Scores in the Behavioral,
Communicative and Socio-cultural Sciences

| Topic ^a | Score ^b of all respondents (n=158) ^c | Score ^b by professional responsibility (n=126) | | | Score ^b by location | |
|--|---|---|------------------|-----------------|-----------------------------------|---------------------|
| | | Clinical (n=47) | Admin. (n=43) | Other (n=36) | Urban (n=129) | Non-urban (n=29) |
| Effective interviewing (n=157) | 2.25 | 2.09 | 2.14 | 2.56 | 2.25 | 2.24 |
| Effective counselling | 2.25 | 2.19 | 2.04 | 2.53 | 2.22 | 2.34 |
| Communication skills | 2.21 | 2.10 | 1.95 | 2.56 | 2.20 | 2.24 |
| Teaching methods & devices (n=157) | 2.18 | 2.15 | 1.95 | 2.50 | 2.18 | 2.21 |
| Assertiveness training | 2.08 | 2.00 | 2.00 | 2.25 | 2.10 | 1.97 |
| Assessing dietary compliance | 2.06 | 2.21 | 1.74 | 2.17 | 1.98 | 2.45 |
| Computer use in education (n=157) | 1.99 | 1.87 | 2.09 | 2.31 | 2.00 | 1.93 |
| Developing nutr. care plans | 1.99 | 2.23 | 1.86 | 1.86 | 1.87 | 2.17 |
| Educational prog. planning | 1.98 | 1.83 | 1.74 | 2.28 | 1.93 | 2.21 |
| Adult education principles (n=157) | 1.95 | 1.76 | 1.72 | 2.31 | 1.91 | 2.14 |
| Marketing nutrition programs | 1.80 | 1.51 | 1.67 | 1.94 | 1.79 | 1.83 |
| Economics of health care (n=157) | 1.78 | 1.60 | 1.74 | 1.97 | 1.77 | 1.86 |
| Writing proposals | 1.78 | 1.55 | 2.00 | 1.81 | 1.81 | 1.66 |
| Effective participation on radio & TV (n=157) | 1.75 | 1.55 | 1.74 | 1.94 | 1.73 | 1.83 |
| Preparation/use of AV aids (n=155) | 1.75 | 1.62 | 1.74 | 1.97 | 1.71 | 1.96 |
| Socio-cultural aspects of nutrition | 1.74 | 1.79 | 1.51 | 1.86 | 1.74 | 1.72 |
| Use of mass media in education | 1.72 | 1.42 | 1.58 | 2.00 | 1.71 | 1.72 |
| Public speaking (n=157) | 1.71 | 1.62 | 1.60 | 1.92 | 1.71 | 1.69 |
| Lobbying skills (n=157) | 1.69 | 1.42 | 1.88 | 1.86 | 1.73 | 1.48 |
| Medical recording skills (n=157) | 1.65 | 1.74 | 1.64 | 1.67 | 1.57 | 2.00 |
| Writing for popular press | 1.59 | 1.45 | 1.58 | 1.64 | 1.67 | 1.59 |
| World food and nutrition issues | 1.49 | 1.40 | 1.33 | 1.75 | 1.46 | 1.62 |

^aListed in descending order by learning need score for all respondents. ^bScore: 3 = high need; 2 = moderate need; 1 = low need. ^cn=158 unless otherwise indicated.

Appendix I

Continuing Education Learning Need Scores in the Managerial
Sciences

| Topic ^a | Score ^b of all respondents (n=158) ^c | Score ^b by professional responsibility | | | Score ^b by location | |
|---|---|--|------------------|-----------------|-----------------------------------|---------------------|
| | | Clinical (n=47) | Admin. (n=43) | Other (n=36) | Urban (n=129) | Non-Urban (n=29) |
| Computers in nutritional care | 2.16 | 2.32 | 2.35 | 1.83 | 2.16 | 2.17 |
| Motivational theories | 1.94 | 1.66 | 2.07 | 2.11 | 1.92 | 2.03 |
| Quality assurance | 1.91 | 1.89 | 2.14 | 1.81 | 1.84 | 2.31 |
| Managerial effectiveness (n=156) | 1.89 | 1.55 | 2.32 | 1.81 | 1.85 | 2.07 |
| Decision making | 1.87 | 1.63 | 1.91 | 2.03 | 1.85 | 1.97 |
| Leadership (n=157) | 1.86 | 1.64 | 2.12 | 1.83 | 1.91 | 1.71 |
| Computers in food service (n=157) | 1.83 | 1.68 | 2.64 | 1.25 | 1.73 | 1.97 |
| Group dynamics | 1.73 | 1.45 | 1.86 | 1.89 | 1.75 | 1.66 |
| Performance evaluation (n=155) | 1.71 | 1.45 | 1.95 | 1.66 | 1.65 | 2.00 |
| Job descriptions/standards | 1.61 | 1.36 | 1.88 | 1.53 | 1.54 | 1.90 |
| Developing policy/procedure manuals | 1.58 | 1.38 | 1.84 | 1.39 | 1.47 | 2.10 |
| Planning, budgeting & cost control | 1.58 | 1.34 | 2.23 | 1.11 | 1.56 | 1.78 |
| Staffing requirements (n=157) | 1.57 | 1.34 | 1.98 | 1.09 | 1.55 | 1.66 |
| Labor relations | 1.51 | 1.23 | 2.09 | 1.14 | 1.49 | 1.62 |
| Administrative theory (n=156) | 1.50 | 1.19 | 2.07 | 1.31 | 1.47 | 1.67 |
| Employee recruitment/training | 1.49 | 1.30 | 1.95 | 1.41 | 1.48 | 1.52 |
| Food quality & quantity control (n=157) | 1.48 | 1.37 | 1.72 | 1.06 | 1.44 | 1.66 |
| Food marketing/purchasing (n=156) | 1.46 | 1.24 | 1.91 | 1.14 | 1.44 | 1.52 |
| Recipe development | 1.42 | 1.38 | 1.91 | 0.94 | 1.38 | 1.62 |
| New food preparation/delivery systems | 1.42 | 1.32 | 2.09 | 0.92 | 1.42 | 1.41 |
| Profit food services | 1.35 | 1.15 | 2.14 | 0.83 | 1.33 | 1.45 |
| Workplace safety/health | 1.32 | 1.11 | 1.72 | 0.89 | 1.22 | 1.50 |
| Sanitation principles/regulations | 1.28 | 1.17 | 1.72 | 0.83 | 1.24 | 1.44 |

^aListed in descending order by learning score for all respondents. ^bScore: 3 = high need; 2 = moderate need; 1 = low need. ^cn=158 unless otherwise indicated.

Appendix J
Comments from Manitoba Dietitians

| Comments | Urban | Non-urban | No. of times mentioned |
|---|-------|-----------|------------------------|
| ° 1/2-2 day programs preferred due to long trip to Winnipeg and time and costs involved | | x | 4 |
| ° 1 hour programs impractical due to travel time and costs | x(2) | x(1) | 3 |
| ° 1-2 hour programs should be after work hours to avoid conflict | x | | 1 |
| ° Evening programs good for full-time mothers | x | | 1 |
| ° Travel time to Winnipeg major deterrent to rural dietitians | | x | 1 |
| ° Cost of c.e. ^a for unemployed or part-time dietitians is a problem | x(2) | x | 3 |
| ° Include cost of c.e. programs in MARD membership fees | x | | 1 |
| ° Increase c.e. opportunities for rural dietitians | | x | 2 |
| ° Tape library is an asset to non-Winnipeg dietitians | | x | 3 |
| ° Dietitians need more management training to develop skills | | x | 1 |
| ° Request training in teaching methods for seniors | x | | 1 |
| ° Request training in diet and fitness | | x | 1 |
| ° Request training in marketing our profession | x | | 1 |
| ° C.e. should address more current issues, e.g. fads, fiber, health foods | x | | 1 |
| ° Request more c.e. in community nutrition | x | | 1 |
| ° C.e. should address topics beyond the basic level, e.g., current research | x | x | 2 |
| ° Courses are preferred to short programs | x | | 1 |
| ° C.e. generally not stimulating | x | | 1 |
| ° Ensure adequate parking available at c.e. programs | x | | 2 |
| ° Screen speaker's audiovisual aids for quality | x | | 1 |
| ° Does c.e. always have to be at Health Sciences center? | x | | 1 |
| ° Preparing summaries of non-MARD sponsored c.e. programs to receive credit points too time consuming | x | | 1 |
| ° C.e. is essential for performance and credibility | x | | 1 |

^ac.e. = continuing education

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Curriculum Vitae

Ms. Macdonald graduated from Acadia University, Nova Scotia, with a Bachelor of Science degree in Foods and Nutrition in 1977. She continued on to complete a dietetic internship with a community nutrition specialty at the Health Sciences Center, Winnipeg, Manitoba in 1980. Since 1981, she has held the position of nutrition specialist with Manitoba Health. She holds memberships with the Manitoba Association of Registered Dietitians (President-Elect), Canadian Dietetic Association, Organization for Nutrition Education and Canadian and Manitoba Public Health Association.