

**PREVENTIVE HEALTH BEHAVIORS OF
SECOND YEAR NURSING STUDENTS**

by

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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
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**THE UNIVERSITY OF MANITOBA
FACULTY OF GRADUATE STUDIES

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MASTER OF EDUCATION

L. Fay Ferris-Malabar 1997 (c)

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I wish to express my sincere thanks to my advisor Dr. Dexter Harvey for his ongoing support in helping me meet numerous challenges to complete my studies. My thanks also go to my family, Cathy, Ken and my husband Ross, and to friends Beatrix, Bill, Dawnna and Tereyn.

ABSTRACT

The purpose of this study was to determine the level of practice of three specific preventive health behaviors, i.e. eating habits, exercise/physical activity and weight control of second year student nurses in Winnipeg.

The questionnaire was available for 158 students in diploma programs only, in three schools of nursing, who in second year are close to graduation. Second year students registered in both diploma and the combined baccalaureate programs in Winnipeg provided a potential study group of 237. It was determined late in the process of requesting a presentation of the survey questionnaire that students in the combined program were at a different level of curricula and clinical practice than the diploma students, and for this reason were not included in the study.

Participation was entirely voluntary and students were assured of anonymity and confidentiality. Information was obtained by having them write answers to a 26 item questionnaire presented in class time designated by the Director of each School of Nursing. Ninety-two (92) volunteered to participate.

Data collected indicate that participation in exercise/physical activity is at a higher rate than for comparable groups in the general population. Some students identified that the increased time demands in their program had contributed to their current lower level of exercise/physical activity. Effort needed to establish and maintain an exercise/physical activity program was identified as a major barrier by this group and this concurs with other research results.

Weight control is an ongoing issues for these future nurses and the BMI results for this group show 33.7% are overweight or obese, with a BMI (Body Mass Index) of 25 or more. This is higher than the Canada Fitness survey data which shows 29% of females in the general population, who had a BMI of 25 or more. Some students also identified weight gain during studies due to a variety of factors.

As the focus on health promotion and preventive health behaviors for all Canadians is enhanced, the role of health professionals is increased. Nurses form the largest group and schools of nursing can assist future nurses to meet the personal challenges for increasing their level of participation in preventive health behaviors, and thus improve as facilitators for patients.

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CHAPTER ONE

Introduction

Since Nightingale nurses have realized the importance of teaching their clients about health and illness, to-day the role of the nurse as a health educator and role model has gained even more importance. (Clarke, 1991)

Health sciences and allied health fields are in the process of redefining health with a greater focus on wellness and a lesser focus on the absence of disease. This concurs with recommended changes in the Canadian health care system to a focus on health promotion and preventive health behaviors. Nurses are the largest group of health care professionals, 91% and female (Canadian Nurses Association [CNA], 1990), and believe that they should set an example of healthful living and teach it to their patients (CNA, 1988). The traditional role of caring has expanded to include assisting individuals, the public, clients and communities to maintain their health status (Gillis, A. J., 1994). There is also an expectation from the public that the nurse as a role model "practises what she teaches." Nursing education lists health promotion as a professional responsibility (Best et al., 1994). However some studies of nurses and nursing students indicate that nurses' preventive health behaviors are not that different from general population groups, even when comparable educational levels, income and community resources are considered (Dittmar, 1989; Gott, 1990).

In the case of nursing students, they consistently demonstrate their knowledge and understanding of preventive health behaviors and their importance in the maintenance of health, but they are found to be less compliant in the practice of these behaviors than comparable groups (Turk, 1984; Soeken, 1989; Svenson, 1992).

A closer review of some of their own preventive health behaviors and rate of practice may assist them as they enter their profession and work with patients, clients and their families to facilitate learning and behavior change.

Rationale for the Study

Research suggests that increased levels of knowledge are a factor for possible practice of health behaviors (Fishbein, 1983), but despite a decade of intense health promotion/health education programs there is slow response to the behavior changes promoted (Janz, 1984; Norman, 1986; Yalow & Collins, 1987). Nurses and other health professionals have demonstrated a long standing interest in identifying factors that prompt individuals to carry out health behaviors. Yet research shows that nursing students and nurses, who demonstrate increased knowledge levels and state intentions, have lower practice rates for preventive health behaviors than many of the people they interact with on a daily basis (Kuhl, 1985; Dittmar, 1989). There have been numerous studies of smoking habits of nursing students and nurses over the past twenty years (Breslow, 1980; Dore, 1988; Soeken, 1988; Canadian Nurses Association, 1990), but there is limited research on other health behaviors for these key members of the health care profession.

Changing health behaviors is very complex, but a further understanding of the correlates of health behavior among nursing students can guide nursing educators in the development of programs that have the greatest likelihood of promoting the desired behavior.

In two decades, there has been a rapid growth in research on health behavior and health education. The central concern of health education is health behavior and positive changes in health behavior are the ultimate aims of health education programs (Glanz et al., 1990).

Nurses have a responsibility for the promotion and maintenance of good health and prevention of ill health by education and example (Schur, 1982) and within the context of this extended role for nurses is an expectation that they show a responsible attitude toward maintaining personal health.

Students entering the nursing program in Winnipeg are asked to provide documentation, or complete a health questionnaire which determines that they are physically fit/healthy. There is, however, the assumption that as future nurses they will follow a healthy lifestyle and practice preventive health behaviors. Nurses have qualities and expertise which enable them to make a special contribution to society and they participate in the formation of attitudes, values and culture (Schur, 1982). This societal contribution has an expected standard of personal practice as a role model. Research shows that health practices for nursing students and nurses are the same or less than for comparable groups in the general population and EFFORT is identified as a primary factor influencing their practice of some specific preventive health behavior (Turk, 1984; Dittmar, 1989). This differs from factors identified for comparable general population groups and may affect the patient education being done by these nurses.

Three specific preventive health behaviors: eating practices; exercise/physical activity; and weight control of second year nursing students will be examined in this study. These three behaviors are selected since the positive practices of diet, regular physical activity and weight control will lead to reductions in common risk factors for cardiovascular disease (Manson et al., 1992; Shah, 1994; Young, Gelskey, Macdonald, Hook & Hamilton, 1990), diabetes, kidney disease (Communication from Kidney Foundation of Canada, Manitoba Branch, 1996; Heart and

Stroke Foundation of Canada [HSFC], 1995; The Pooling Project Research Group [PPRG], 1978; Zimmet, 1988), asthma and cancer.

Purpose of Study

The purpose of this study is to examine factors related to second year diploma nursing students' preventive health behaviors of eating habits, exercise/physical activity patterns and weight control.

The study has two research questions:

Question 1: What are the eating practices, physical activity patterns and body mass index of second year diploma nursing students?

Question 2: What factors do second year nursing students perceive as barriers to health promoting eating practices, exercise/physical activity patterns and body mass index?

Limitations of This Study

One limitation of this study is that data collected on health behaviors were obtained by means of a self report questionnaire. There may be a tendency for nursing students to wish to present themselves in the best light for health behaviors, thus presenting a better outcome than there actually is. A second limitation is related to the time in the academic year when the questionnaire was administered. It was administered late in the second year of the two year registered nurse diploma program in a period when time pressures for students were high. There is no way of determining how this affected the number who volunteered or their sincerity in completing the questionnaire.

Due to time factors, travel costs, and recruitment restrictions, only the students in the three registered nurse diploma programs were included in the study. Nursing students in the

baccalaureate program at the University of Manitoba were seriously considered as potential participants. However, it was determined that this group may be at a different level in curricula and clinical practise and this may bias results. For this reason they were not included.

CHAPTER TWO

Literature Review

In two decades, a body of research into health behavior and health education has grown rapidly. Health behaviors of Canadians have been studied by government, both federal and provincial, and a brief review of these studies will provide a framework for research specific to the preventive health behaviors of second year diploma student nurses in Winnipeg. Belloc and Breslow (1972) using data from the Alameda County long term study of the cumulative impact of health practices, reported an association between physical health status and seven common health related activities. This is recognized as the first study which linked health status and positive health practices.

The seven common health related activities/health practices are:

- * maintenance of a desirable height/weight ratio,
- * maintaining physical activity,
- * eating breakfast,
- * not smoking,
- * not eating between meals,
- * moderate alcohol intake, and
- * getting 7-8 hours of sleep each night.

In 1974 Marc Lalonde, as Canada's Minister of Health, published "A New Perspective on the Health of Canadians" in which he presented a view that health was influenced by factors of human biology, lifestyle, social and physical environments in which people live and the organization of health care. This presented a challenge to health care professionals and managers

in the health care system to focus more effort on disease prevention and health promotion. This was viewed as the start of a commitment of Canada's federal government to health promotion. Lalonde's publication initiated a steady flow of studies in Canada related to health and the living habits of Canadians. The Canada Health Survey in 1978-1979 looked at living habits and individual perceptions of health and behavior according to gender, major (leisure time) physical activity, income and education. This was followed by the Canada Fitness Survey (CFS) in 1981 which focused on exercise and recreational physical activities of Canadians. Of interest from this study is the finding that more females than males participated in regular physical activity.

The CFS study group most frequently listed lack of time as the reason for not participating in physical activity. This study precedes the Participaction program in Canada. The Canada Health Promotion Survey (CHPS) in 1985 found that knowledge, attitudes and beliefs do indeed affect health behavior and self-rated health but do not influence behavior as strongly as expected. Improved knowledge is a key factor in behavior change but not sufficient to instigate change that people need most. In the category of maintaining and improving health, the CHPS examined weight control, exercise regular or not, and breakfast eating habits. A finding relevant to this study is that groups most concerned about improving health were female, ages 25-44 who had a college education, with 62% who intended to take some action to improve their health in the next year. In 1986, *Achieving Health For All: A Framework of Health Promotion*, a document from Health and Welfare Canada, identified three national health challenges to Canadians, one being the prevention of chronic disease. Health was presented as part of everyday living and an essential dimension of the quality of our lives. Quality of life implies opportunity to make choices and gain satisfaction from living.

“Canadian Guidelines for Healthy Weight” was developed and published in 1988 and reported that 27% females were overweight, with a Body Mass Index (BMI) of 25 or more. In 1990, Health and Welfare Canada presented the “Active Health Report on Women” and in this report one factor relevant to this study was the strong position on healthy lifestyles women in Canada have demonstrated over a twenty year period. Some of the women have shown a sense of responsibility for health, for themselves and their families and researchers note this concept is an achievable goal for many Canadians.

A strategy document “Enhancing Health Promotion in the Practice of Health Care Professionals” was presented by Canada’s federal government in 1992. It identified goals and practical actions for strengthening and expanding prevention in the practice of health care professionals, of whom nurses were the largest group. Input from national and provincial nursing associations was utilised in the development of this document. Of interest to this researcher is the document’s recommendation that there is a need to focus on health and quality of life more than on dollars saved, as part of steps to make prevention more tangible in nursing education programs.

Much of the health teaching is done by nurses who are on the front lines of service delivery and encounter daily changes. Reasonable expectations of what can be accomplished need to be established. In addition to health behavior studies at the federal level, provincial governments have sponsored studies of health behaviors, including fitness and most recently major studies of Heart Health with objectives to estimate the prevalence of cardiovascular risk factors and to assess the level of knowledge of heart health.

The Health Belief Model (HBM) widely used and developed over thirty years ago has become the predominant explanation not only for differences in the use of preventive health services but for differences in preventive health behaviors. It proposes that perceived risk vulnerability and susceptibility are related to individual motivation to engage in preventive health behaviors and can be used effectively in some health behavior change. However, its acceptance is based on an assumption that health is highly valued by the individual and recent research indicates that other factors may be more significant and need to be evaluated.

Henderson (1979) cautioned against a naive assumption that once a person understands how to enhance their health status a change in behavior will follow. A focus of health promotion from a medical perspective is that positive health behavior is for the purpose of preventing disease (Leventhal et al., 1983). This has an implicit assumption that people well informed about the health consequences of a behavior or health outcome will act.

While knowledge and beliefs about the health consequences of behavior may have some impact on the way in which people behave, knowledge and beliefs do not on their own, provide a strong basis for health promotional activities (Norman, 1986). Non-health belief factors are felt to be related to behavior in more immediate and certain ways than disease prevention. Ardell (1986) recommends that using the health promotion component of lifestyle as a positive approach to living can lead individuals toward realising their highest potential. Such a lifestyle is pursued because it is satisfying and enjoyable, not because of a wish to avoid disease. People, and particularly those under 35 years, can see little reward now for learning and continuing to perform health promotion behaviors. Student nurses may experience similar reluctance to practice these behaviors.

There is limited research done specific to student nurses and their preventive health behaviors, but research which examines health behaviors, attitudes about health promotion, and blocks or barriers to change are available for comparable groups, namely educated, with moderate Socio-Economic Status (SES), and having a higher level of knowledge and awareness related to health risks.

Becker (1983) and Norman (1986) found significant relationships between personal health behaviors and the importance assigned to these behaviors by nurses. Effort is identified consistently by students/nurses as a barrier to practice of preventive health behaviors, but some success is recorded when the focus meets a personal goal as in weight loss (Soeken, 1989).

Dittmar, Haughey, O'Shea and Brasure (1989) studied 1081 nursing students in diploma and Bachelor of Nursing (BN) programs. The study purpose was to identify health practices and overall inclination towards preventive health behaviors. Diploma nursing students had slightly lower preventive health behaviors than the BN group, with 68% reporting being physically active 2 to 4 times per week. Dittmar et al. suggested that the data in this study indicated that nursing faculty and health educators need to influence students' health promoting and disease prevention behaviors. Sound health practices are then more likely to be long term habits.

Lifestyle and health behaviors are closely interrelated so changes in one may affect the other. Therefore, as changes occur throughout the life cycle, modifications occur in both lifestyle and health behavior to accommodate the life change (Bruhn, 1989). Soeken, Bausell, Winklestein and Carson (1989) also found nursing students with a compliance rate which averaged less than 50% for all the behaviors studied, despite the fact that all 20 of the behaviors were considered important to a healthy life. Preventive behaviors reviewed in the study by

Soeken et al. (1989) included nutrition, exercise and stress reduction. Nutritional behaviors were rated the most difficult to engage in and had a low compliance rate. Only 13% of the students (age 21-44) exercised regularly. The study found the strongest correlation between the importance placed on practising preventive behaviors and a desire to practise them. Those who felt the behaviors were important had a desire to practise, or saw fewer difficulties to engage in the behaviors, and were more likely to comply.

The smoking rate for the Soeken et al. (1989) study group of nursing students was low, at 17%, even though findings in other studies continually report smoking rates for nursing students/nurses as higher than the general population (Dittmar, 1989; CNA, 1990). It is important to note that numerous studies of smoking practises of nurses and student nurses have been conducted over the past 20 years in North America and Europe. Studies of other health behaviors are limited, and studies pertinent to the focus of this research, namely the preventive health behaviors of eating habits, exercise and weight control, are few.

Svenson and Campbell (1992) surveyed 477 undergraduate students age range under 22 years and over 22 years, with 58.7% female, to determine if their perceived health status influenced their desired health needs. Seventy (70%) percent rated their health as very good to excellent, yet ninety-six (96%) identified that there was some need to improve their physical health. Of the needs identified, 78% wished to improve eating, 85% to exercise more and 35% to lose weight. Female students listed lack of self discipline first and lack of time second as blocks or barriers to change.

For the male students, lack of being organised and lack of time were their top two blocks or barriers to change. The Svenson and Campbell (1992) study, as do others, suggests that the

students' awareness is heightened but they are not taking appropriate steps or measures to facilitate change. Kuhl (1985) found that health care professionals have a heightened awareness of health risks and may be motivated to make changes but it is significant for them to note that being motivated to perform is not sufficient; motivation needs overt expression. Assumptions regarding the preventive health behaviors of health care professionals are often related to high compliance and/or performance rates. Research findings show that while nurses demonstrate increased levels of knowledge, their beliefs, intentions and practice of their own health behaviors vary somewhat to those of comparable general population groups. These nursing students enter their profession as enthusiastic nurses striving to maintain health and a quality of life for their patients/clients and for themselves.

This review indicates that little research has been done on diploma nursing students' health behaviors other than smoking. Since health promotion is now seen as a major responsibility of nurses, and that modeling of behaviors by the nurses is important there is a need to obtain information as a baseline of pre-graduation diploma nurses' health behaviors.

CHAPTER THREE

Procedures

Methodology

This study was a descriptive study of responses by diploma nursing students. The questionnaire (Appendix D) was developed principally from previous studies of health behaviors in Canada, namely, the Canada Fitness Survey of 1983, the Health Promotion Survey of 1985 and the Manitoba Heart Health Survey of 1990. Several of the questions were developed by the researcher specific to determining barriers and possible supports to the study group pertinent to three specific preventive health behaviors (Appendix D - Questionnaire Source List).

The Sample

Second year diploma nursing students in the registered nurse diploma program in the City of Winnipeg were used in the study. Two hospital based schools of nursing and one community college currently offer this program with a combined total of 153 students enrolled in the second year.

Procedure

A pilot of the questionnaire was administered to a comparable group of students who were not study subjects. Some revisions were made to reduce the number of items and not duplicate information requested. Access to the participating schools of nursing and community college for permission to seek volunteer participants was sought by means of a formal letter of request sent to the Directors of the Schools of Nursing (Appendix B) and copies of the letter of approval from the Ethics Committee (Appendix E) were attached.

Each Director of Nursing assigned a time when the researcher could be present at a designated classroom to present the questionnaire. A bulletin was posted informing the students of the date, time and location, that participation was voluntary and confidentiality and anonymity were assured. At the scheduled time and date, the researcher presented the questionnaire in an envelope with a letter to the students (Appendix C). This letter informed students of the purpose of the study. The completed questionnaire was sealed in the envelope and handed to the researcher as the student left the room. A verbal announcement was made indicating that any student interested in receiving a summary of the research results could leave their name and address on a list placed at the back of the classroom.

The completed questionnaires, ninety-two (92), were opened and reviewed by the researcher then taken to the University of Manitoba for data entry and compiling data in age and gender groups in order to facilitate it being compared with studies already done.

Questionnaire

The questionnaire (Appendix D) is divided into sections with questions specific to the respective health behavior being researched.

- | | |
|---------------------------------------|--|
| Section 1. General Health | (Questions 1 - 5). |
| Section 2. Eating Practices | (Questions 6 - 15). |
| Section 3. Exercise/Physical Activity | (Questions 16 - 20). |
| Section 4. Weight Control | (Questions 21 & 22) and self-reported height and weight. |

Section 5. Related to demographic data of the study group, namely, year of birth, gender, marital status, site of permanent residence and residence immediately prior to entering the diploma nursing program.

A questionnaire source list (Appendix D) refers to the studies from which some of the same questions were utilised. These studies are accessible and enable data comparison between their participants in comparable groups with those in this study.

Research Question 1. What are the eating practices, physical activity patterns and body mass index of second year diploma nursing students?

Questions 6-15 were specific to eating practices (Appendix D). Data were analyzed in total, disregarding gender and age groups.

Questions 16-20 were specific to physical activity (Appendix D). Data were analyzed by female groups of 18-34 and 35-64 years. Since there were only 6 (six) males in this sample no analysis was done for physical activity.

Question 21 was specific to weight control and self-reported height and weight (Appendix D). Height and weight reported were used to calculate body mass index (BMI) which is weight in kilograms divided by height in metres squared. This calculated BMI was examined in the two age groups 18-34 and 35-64 years, and by female gender. Due to the small number of male subjects (6) no analysis was done for BMI.

Research Question 2. What factors do second year diploma nursing students perceive as barriers to health promoting eating practices, physical activity patterns and body mass index?

Questions (Appendix D) specific to FACTORS study subjects perceive as BARRIERS were: Questions 13, 14, 15 - eating practices; Question 20 - exercise/physical activity; Question 22 - weight control.

Collected data were analyzed to match research question 1. All subjects, male and female, were included in eating practices while males were not included in the analyses of physical activity and weight control. In physical activity and weight control, female responses were analyzed by two age categories 18-34 and 35-64 years. Since data collected in this study were self-reported by the voluntary participants, it was relevant with respect to its directness and versatility. Self-reported data frequently yields information that would be difficult if not impossible to gather by any other means. Self-report instruments can gather retrospective data about activities occurring in the past, or gather projections about behaviors in which subjects plan to engage in the future. A specific limitation is a question of validity and accuracy of self-reports, since investigators/researchers assume that the majority of respondents have been frank, yet there may be a tendency to want to present oneself in the best light. This may conflict with the truth. It is important to consider the shortcomings of this method when interpreting results (Pollit & Hungler, 1987).

While not a research question, the findings from the diploma program nursing students will be compared to findings from other national surveys on the same behaviors. This will provide some information on whether this study group is different from the public at large.

CHAPTER FOUR

Findings and Discussion

Study Subjects

There were 153 students registered in the second year program in three diploma program schools of nursing in Winnipeg. Consent was received from each of the Directors of Nursing for the researcher to present the questionnaire. Notices posted about the questionnaire stated that student participation in the study was voluntary, and anonymity and confidentiality were assured. Those students choosing not to complete the questionnaire and those absent due to illness or for other reasons were non-participants with no data collected from them. Ninety-two (61%) of the 153 student nurses voluntarily completed the questionnaire. A response rate of 61% was considered sufficient to indicate absence of biases relative to the target population (Polit & Hungler, 1987).

Characteristics of Student Nurses

Demographic information on the students was requested in Section 5 of the questionnaire (Appendix D). The characteristics included gender, age, marital status, current residence and residence immediately prior to entry into the nursing program.

The study sample consisted of 86 females and 6 males. Students' ages where possible were divided into 18-34 and 35-64 years age groups in order to facilitate comparison of this data with that from other studies of preventive health behaviors (Table 1).

Table 1

Age and Gender Study group total #92 - 4 with no age entered, including 2 no gender entered.

	Female	Male
Total	82	6
Age Groups		
18-34 years	62	6
35-64 years	20	0

Table 2

Marital Status for Female Students

Age Groups	Married	Divorced	Single	Separated	Widowed
18-34 years	10 (16%)	8 (13%)	40 (65%)	3	0
35-64 years	11 (55%)	7 (35%)	2 (10%)	1	0

In this study group, 65% of the females in the 18-34 years age group were single and 80% of those in the 35-64 years age group were married or divorced (Table 2).

Table 3

Residence Information

Permanent residence reported by study group	Total no. responding	Urban	No.	Rural	No.
	41	92.6%	38	7.3%	3

Table 4

<u>Residence Immediately Prior to Entry into Nursing Program</u>			Total no. responding	Urban	No.	Rural	No.
			84	80.9%	68	19%	16
Age groups	Female	18-34 years	58	74.1%	43	25.8%	15
		35-64 years	20	95%	19	5%	1
	Male	18-34 years	6	100%	6	0%	0

It is apparent from the responses to the questions about residence that they were not presented clearly and this may have affected the number of students responding and the data received (Tables 3 and 4). Only 41 (of the total number of 92) students documented their permanent residence. The question relating to residence immediately prior to entry into the nursing program was answered by 84 of the total group of 92 students with 30.8% of all females residing in rural areas before commencing their nursing program. Male students, a group of six, all listed an urban residence prior to program entry.

The remainder of this chapter will focus on the study variables as they pertain to research questions 1 and 2.

Research Question 1: What are the eating practices, physical activity patterns, and body mass index of second year diploma nursing students?

Eating Practices

Respondents were asked a number of questions (Questions 6-15, Appendix D) about their eating practices. Since there were only six males in the study, they were included with the

females with no differentiation of gender or age. With respect to questions on eating practices, respondents were requested to answer "often," "sometimes," and "never." For the purpose of this study, the response "often" will be used to indicate a high usage while "sometimes" and "never" will be considered as being of much lesser consequence.

Table 5 Eating Practices During Week
Number outside bracket is frequency while number inside bracket is percent.

	Often	Sometimes	Never	Missing	Total
Fried Foods	19 (21)	68 (74)	5 (5)		92
Drink 1%/2%/Skim Milk	64 (70)	20 (22)	8 (9)		92
Eat Lean Cuts/Trim Fat from Meat	66 (72)	21 (23)	4 (4)	1 (1)	92
Use Margarine/ Butter/Vegetable Oil	46 (50)	42 (46)	3 (3)	1 (1)	92
Remove Skin from Chicken/Turkey	51 (55)	29 (32)	10 (11)	2 (2)	92
Eat Snacks like Potato Chips	13 (14)	71 (77)	7 (8)	1 (1)	92
Eat Bread, Crackers, Muffins or Cereals made from Whole Grains	46 (50)	43 (47)	2 (2)	1 (1)	92
Eat Processed Meats like Wieners, Sausages, Cold Cuts	14 (15)	61 (66)	16 (17)	1 (1)	92

Percentages may not total 100 due to rounding.

Table 5 shows that more than 67% of all respondents reported that during a week they often drink 1% or 2% or skim milk and they often eat lean cuts or trim the fat from meat. In the case of removing the skin from chicken or turkey, more than 56% responded they often do this and 50% responded often to the consumption of whole grain cereals, bread, crackers and muffins and to the use of margarine, butter and vegetable oil.

More than 78% of all subjects do not often use either fried foods, eating snacks like potato chips, and eating processed meats.

Out of the eight food choice practices subjects were asked about, more than two-thirds (67%) of the subjects responded in a manner that reflected an orientation to lower fat consumption on five of them. On the remaining three, removing skin from chicken and turkey, consumption of whole grain cereals, bread, crackers and muffins, and the use of margarine, butter or vegetable oils, 50% or more indicated an orientation to lower fat consumption.

Fast foods are generally a source of high fat foods. When respondents were asked the weekly frequency with which they would order fast food such as hamburgers and fries, only 15% responded often (Table 6) again supporting the direction of food choice practices in Table 5.

All the respondents (100) indicated they had knowledge of the Canada Food Guide while only 26% indicated they often use the knowledge of the Food Guide in food choices (Table 7). This means that 74% are not making frequent use of their Canada Health Guide Knowledge.

Table 6 Eating Fast Foods Such as Hamburgers and Fries
Number outside bracket is frequency while number inside bracket is percent.

Often	Sometimes	Never	Missing	Total
14 (15.2)	76 (82.6)	1 (1.1)	1 (1.1)	92

Table 7 Canada Food Guide Knowledge and Use
Number outside bracket is frequency while number inside bracket is percent.

Have Knowledge	Yes	No	Total	
	87 (100)		87	
Use Knowledge in Selecting Food				
	Often	Sometimes	Never	Total
	25 (26.4)	50 (57.5)	13 (16.1)	87

The analysis of the responses to eating practices indicate that all respondents have Canada Health Guide Knowledge. However, only 26% use that knowledge often in making food choices while 16% never use it.

On one of the survey questions, subjects were asked whether they get some fresh fruit or raw salad on a daily basis. More than 50% responded always or often which tends to support the general pattern of food choice practices.

Table 8 Percentage of Manitobans 12 Years and Over Taking Specific Steps to Reduce Fat Intake 1994

Using Less Butter/Oil/Dressing	Eating Less Fried Foods	Eating Leaner Meat Poultry, Fish	Cutting Down on High Fat Milk Products	Using Low Fat Milk Products	Snacking Less on Junk Food	Choosing Low Fat Foods	Baking/Broiling/Micro-Waving	Eating Meat Alternatives	Cutting Down on Nuts and Seeds
87.9	84	80.3	79.5	74.7	64.9	69.8	70	30.5	45.4

From 1994-95 National Population Health Survey: Nutrition Component, Health Canada

It seems reasonable to conclude that the subjects' responses to eating practices are not unlike those of the Manitoba population generally. Table 8 presents data from the 1994-95 National Population Health Survey. While the responses in this study cannot be compared directly with the National Survey, one can suggest from Table 5, that the 79 percent of the respondents in this study who do not eat fried foods "often" is reflective of the 84 percent of Manitobans who try to eat less fried food in the National Survey. The 70 percent in this study who consume low fat milk "often" is reflective of the 74.7 percent of Manitobans who try to use low fat milk products (Table 8). The 72 percent in this study (Table 5) who eat lean cuts or trim fat from meat and the 85 percent who do not eat processed meat "often" are reflective of the 80.3 percent of the Manitoba population eating lean meat (Table 8). Also, the 86 percent in this study who do not eat potato chips as snacks "often" (Table 5) is reflective of the 64.9 percent of Manitobans (Table 8) who snack less on junk food.

Physical Activity Patterns

Questions 16-20 (Appendix D) focus on physical activity. Since the sample of males included only 6 subjects, only the female responses will be analyzed. The female subjects have been divided into two groups by age; 18-34 years and 35-64 years.

In North America, the study of the determinants of physical activity has a twenty year history. Research has examined many factors which shape a person's disposition to plan, adopt, maintain, increase or return to a physical activity program. Canadian surveys show that 30-60 percent of Canadians are in no leisure time physical activities (Canada Fitness Survey, 1981; Health Promotion Survey, 1985). Stephens, Craig and Ferris (1986) called the Canada Fitness Survey (CFS) the most comprehensive national population survey of physical activity and fitness

ever carried out. In 1981, the prairie population was found to be more active, with the most active in the young and professional groups. The CFS found only 25 percent of the men were sufficiently active for cardiovascular health, and only slightly more active than women. Research since the CFS has consistently found women are now more active than men (Active Health Report-Women, 1990).

Canadian adults rate health as the most important reason for physical activity but regular physical activity is listed ninth out of 11 selected practices (Health Promotion Survey, 1985). Respondents were asked whether they agreed or disagreed that regular physical activity can have significant health benefits. Of the 60 female subjects 18-34 years and 20 female subjects 35-64 years who responded, all or 100% agreed. However, when they were asked how active they were compared to others their age, only 11 or 17.7 percent of 18-34 year old females and 4 or 20 percent of 35-64 year old females perceived themselves to be more active or much more active than others their age (Table 9). A total of 34 (54.8%) respondents in the 18-34 year group and 9 (45%) in the 35-64 year group saw themselves as active. In total, 45 or 72 percent of 18-34 year olds and 13 or 65 percent of 35-64 year olds who responded to this question perceived themselves to be as active or more active than others their age. A higher percentage of 35-64 year olds than 18-34 year olds saw themselves less active or much less active.

Table 9 Perception of Own Physical Activity with Others the Same Age
 Number outside bracket is frequency while number inside bracket is percent.

	Female 18-34	Female 35-64	Total
Much More Active	2 (3.2)	0	2 (0.2)
More Active	9 (14.5)	4 (20)	13 (15.8)
As Active	34 (54.8)	9 (45)	43 (52.4)
Less Active	14 (22.6)	5 (25)	19 (23.2)
Much Less Active	3 (4.8)	2 (10)	5 (0.6)

Percentages may not total 100 due to rounding.

Exact physical activity patterns are difficult to discern from the data. Table 10 presents data on the reported physical activities participated in by females by season and two age categories; ages 18-34 and ages 35-64. It should be noted that the responses were to a question that asked for frequency of participating in specific activities for a duration of 30 minutes or more at an intensity that causes breathing to be a lot faster but at a level at which talking is still possible.

The Manitoba Heart Health Survey (1991) labelled 1-2 times per week of activity using the above duration and intensity as a "moderate" active level and more than 3 times per week as very active. For the purpose of this study, being active 1-3 times per week will be "moderate"

activity and daily physical activity will be "very active," while less than once per week will be sedentary.

From Table 10, it is clear that walking is the most common activity with 60 of the 82 respondents across both age categories indicating their participation that matches the moderate or very active levels in the spring/summer and 36 of 82 respondents indicating such during the fall/winter period. It is clear there are seasonal variations for both age categories for activities such as biking, skiing, curling, golf, skating and baseball as well as walking.

A total of 44 out of 62 respondents or 71 percent of female respondents 18-34 years participated in walking at a moderate or active level in the spring/summer while it drops down to 25 or 41 percent in the fall/winter. For the 35-64 age group 16 out of 20 or 80 percent were walking at a moderate or active level in the spring/summer tapering to 11 out of 20 or 55 percent in the fall/winter.

Based on walking, at least 41 percent of 18-34 year olds engaged in moderate to active activity in the fall/winter jumping to 71 percent in the spring/summer. The Manitoba Heart Health Survey (1991) reported that for all activities engaged, 54 percent of Manitoba women 18-34 years were moderate to very active on a weekly basis with no consideration given to activity selection or seasonal variations. The 35-64 age respondents in this study had a minimum of 55 percent in the moderate to very active levels in walking for the fall/winter increasing to 80 percent in the spring/summer. The Manitoba Heart Health Survey (1991) reported that for all activities engaged in by Manitoba women 35-64 years, 47 percent were in the moderate to very active levels on a weekly basis with no consideration given to activity selection or seasonal variations.

Table 10 Physical Activity at Least 30 Minutes in Length

Number not in bracket is frequency, number in bracket is percent.

	Spring/Summer								Fall/Winter							
	18 - 34 Years				35 - 64 Years				18 - 34 Years				35 - 64 Years			
	Daily	1-3X	L1	Total	Daily	1-3X	L1	Total	Daily	1-3X	L1	Total	Daily	1-3X	L1	Total
18 - 34 n = 62																
35 - 64 n = 20																
Walk	17 (27)	27 (44)	16 (24)	60	7 (35)	9 (45)	2 (10)	18	9 (16)	16 (26)	20 (32)	45	6 (30)	5 (25)	5 (25)	16
Bike	3 (5)	23 (35)	25 (38)	51	1 (5)	7 (35)	6 (30)	14	1 (2)	1 (2)	38 (58)	40	0	0	11 (25)	11
Jog	1 (2)	9 (14)	35 (53)	45	0	1 (5)	12 (60)	13	1 (2)	3 (5)	37 (56)	41	0	0	9 (45)	9
Home Exercise	6 (10)	15 (24)	30 (48)	51	2 (10)	8 (40)	4 (20)	14	6 (10)	21 (34)	17 (26)	44	2 (10)	8 (40)	4 (20)	14
Swim	5 (8)	11 (18)	34 (52)	50	0	5 (25)	10 (50)	15	1 (2)	7 (11)	33 (50)	41	0	2 (10)	7 (35)	9
Ski	0	0	30 (48)	30	0	0	10 (50)	10	0	3 (5)	45 (73)	48	0	0	15 (75)	15
Curl	0	0	27 (44)	27	0	0	9 (45)	9	0	6 (10)	38 (61)	44	0	7 (35)	8 (40)	15
Aerobic Exercise	3 (5)	9 (15)	33 (50)	45	0	0	12 (60)	12	2 (3)	7 (11)	36 (55)	45	0	3 (15)	10 (50)	13
Golf	2 (1)	5 (8)	35 (44)	42	1 (5)	3 (15)	9 (45)	13	0	0	36 (55)	36	1 (5)	3 (15)	9 (45)	13
Skate	0	3 (5)	28 (45)	31	0	0	12 (60)	12	1 (1)	7 (11)	37 (56)	45	0	3(15)	10 (50)	13
Baseball	0	7 (11)	32 (52)	39	0	1 (5)	12 (60)	13	0	1 (1)	37 (56)	38	0	0	11 (55)	11
Racquet	0	7 (11)	32 (52)	39	0	2 (10)	10 (50)	12	0	2 (1)	10 (16)	12	0	2 (10)	9 (45)	11
Dance	0	7 (11)	38 (61)	45	0	2 (10)	11 (55)	13	0	8 (13)	35 (56)	43	0	3 (15)	9 (45)	12

Total percent may not be 100 because of rounding of numbers.

Based on walking alone, respondents in this study 35-64 were more moderate to very active than Manitoba women in the same age for all activities on a weekly basis. The respondents in the 18-34 year category, based on walking alone, during the spring/summer exceeded that for Manitoba women the same age for all activities on a weekly basis. During the fall/winter, based on walking, the respondent fell below that reported by Manitoba women the same age for all women on a weekly basis.

It is interesting to note that from Table 9, 35 percent of respondents in the 35-64 year old group saw themselves as less active or much less active than others their age when, in fact, based on walking alone they are more active than Manitoba women their age for all activities.

For the purpose of this discussion, home exercise and aerobic exercise will be presented since they run across both seasons as does walking.

Home exercise crosses both seasons with 34 percent of 18-34 year old respondents engaging in moderate to active levels in the spring/summer with 40 percent in the winter while 50 percent of 35-64 year olds were engaging in moderate to very active levels over both seasons.

Aerobic exercises are carried out by 20 percent of 18-34 year old respondents at a moderate to active level in the spring/summer to 14 percent in the fall/winter. In the 35-64 age group, only 15 percent engaged in aerobics or a moderate to very active levels in the fall/winter.

While the data on physical activity were not analyzed to determine how many people engaged in multiple activities at a moderate to very active levels in both seasons, the analyses of walking, home exercise and aerobic exercise and visual inspection of Table 10 shows that for 18-34 year olds that while the number walking at moderate to very active levels decreases from spring/summer to fall/winter, home exercise and aerobics changed little, while the percent

engaged in skiing, curling, skating and dancing increased during the fall/winter season. At the same time at least 13 percent continued moderate to very active levels of swimming. It seems reasonable to speculate that the percentage of 18-34 year olds in this study are as active in the fall/winter as the 54 percent found in the Manitoba Heart Health survey (1991) for the same age group. The 18-34 age group far exceed the 54 percent for the spring/summer. Respondents in the 35-64 age group far exceed the 47 percent for Manitoba women (Heart Health Survey, 1991).

Body Mass Index (BMI)

BMI has been recommended as the single most useful measure of weight status for the healthy Canadian adult 20-65 years. BMI is calculated as weight in kilograms divided by height in metres squared. The BMI has a high correlation with body fat (as estimated from body density) particularly when age is taken into consideration. Data to calculate BMI were given by study participants as self-reported height and weight. This data collection approach has been found reliable in previous research (Health Promotion Survey, 1985; Manitoba Heart Health Survey, 1991). The Manitoba Heart Health Survey (1991) found a strong correlation between measured and self-reported height and weight with 78.3 percent of reported values in the same categories as those measured.

The Canadian Guidelines for Healthy Weight (1988) recommend four zones (Zone A-D) or ranges for BMI. Zone A is a BMI of less than 20 and is rated as Underweight, Zone B is a BMI of 20-24.9 and is rated as the Normal Range, Zone C is a BMI of 25-26.9 and is rated as Overweight, and Zone D with a BMI of 27 or greater rated as Obese.

Due to the small number of male subjects (6) in the study, analyses of BMI are done on female respondents only.

Table 11 shows the BMI results for female respondents in two age categories; 18-34 years and 35-64 years.

Table 11 Body Mass Index

Number without bracket is frequency, number in bracket is percent.

	18-34 years		35-64 years	
	Current Study	Females *MHHS 1991	Current Study	Females *MHHS 1991
18-34 years n = 59				
35-64 years n = 19				
BMI < 20	10 (17)	(16.6)	1 (5.3)	(5.7)
BMI 20 - 24.9	34 (57.6)	(53.6)	9 (47.3)	(39)
BMI 25 - 26.9	7 (11.9)	(9.7)	3 (15.7)	(15.5)
BMI \geq 27	8 (13.6)	(20.1)	6 (31.6)	(39.8)

Total percent may not be 100 because of rounding of numbers.

* Manitoba Heart Health Survey, 1991.

Table 11 indicates that the subjects in this study have a higher percentage of normal BMI's (20 - 24.9) for both 18-34 years and 35-64 years than those found for females in the same age categories by the Manitoba Heart Health Survey (1991). Also, subjects in this study for both age categories had a lower percentage for those who were underweight (<20) and obese (\geq 27) than found in the Manitoba Heart Health Survey (1991).

Table 11 shows that in general, the BMI findings of this study do not differ greatly from that found in the Manitoba Heart Health Survey (1991). It is worth noting that for the female respondents in this study in the 35 to 64 age group the oldest subject was 54 years and this is the only subject of the 19 who exceeded the age of 50 years. This means that 18 of the 19 subjects

fall in the 35-49 year range or the younger half of this age category. Since both this study and the Manitoba Heart Health Survey (1991) show increasing percentages of those overweight or obese with increasing age, caution is needed in reporting that the BMI percentages of the 35-64 year age group in this study are in the more desired direction than those found for Manitoba females in the same age category in the Manitoba Heart Health Survey. The skewing of subjects to the younger ages in the 35-64 years and the small sample size requires caution when comparing with other studies.

The findings for Research Question 1 (What are the eating practices, physical activity patterns and body mass index of second year diploma nursing students?) indicate that about 80 percent of second year diploma nurses are engaged in one or more eating practices leading to lower fat intake and for 18-34 year olds 57 percent have a BMI of 20-24.9 while 47 percent of 35-64 year olds had a BMI of 20-24.9. For both eating practices and BMI, second year student nurses did not differ much from the percentages of Manitoba women of the same age category. Respondents in this study reported activity patterns that exceeded that found for Manitoba women of the same age categories. Overall, second year diploma nurses were not unlike their Manitoba counterparts for eating and BMI but were more active.

Research Question 2: What factors do second year diploma nursing students perceive as barriers to health promoting eating practices, physical activity patterns and body mass index?

Eating Practices

The analyses of barriers to eating practices were done on the entire group of subjects (combined males and females) and not by age categories or gender. There was a total of 92

responses, the same number as that reported in the analysis of eating practices for research question 1.

Respondents were asked about factors that might prevent them from changing their eating practices. For each of the factors, they were asked to identify the importance the factor has for preventing them from changing their eating practices. Table 12 shows that Time for Meal Planning had the highest percentage of respondents (74%) indicating it was important or very important followed respectively by Self Confidence to maintain choice of healthy foods (72%), Accurate Information (65%), Access to Appropriate Food (64%) and Support (44%).

When respondents were asked how much effort they felt was needed to maintain good eating habits for themselves, 39.1 percent indicated a great deal, 46.7 percent some and 14.1 percent very little. Nobody indicated no effort.

With respect to eating practices, more than 85 percent reported they needed some or a great deal of effort to maintain eating practices. The barriers showed that Time for Meal Planning and Self Confidence were the most important barriers for at least 72 percent of respondents with Accurate Information and Access to Appropriate Food considered the most important by at least 64 percent of respondents.

Physical Activity Patterns

Respondents were asked about factors that might prevent them from being more physically active. For each factor, they were asked for the degree of importance each factor would have for them. Since there were only six males, their responses were not analyzed. For female respondents, they were analyzed in two age categories; 18-34 years and 35-64 years.

Table 12 Barriers to Eating Practices

Number outside bracket is frequency, number inside bracket is percent.

	Very Important	Important	Somewhat Important	Unimportant	Missing	Total
Accurate Information	33 (35.9)	27 (29.3)	9 (9.8)	23 (25)		92
Access to Appropriate Food	23 (25)	36 (39.1)	17 (18.5)	15 (16.3)	1 (1.1)	92
Support	9 (9.8)	32 (34.8)	30 (32.6)	21 (22)		92
Time for Meal Planning	26 (28.3)	42 (45.7)	18 (19.6)	6 (6.5)		92
Self Confidence	20 (21.7)	46 (50)	14 (15.2)	11 (12)	1 (1.1)	92

Total percentage may not be 100 due to rounding of numbers.

Table 13 shows that for the 18-34 age category, 85 percent of respondents indicate that Lack of Time due to School work is an important or very important factor that might prevent them from being physically active while 64 percent indicate that Lack of Energy was important or very important followed by Lack of Time Generally (50%) and Lack of Self Discipline (41%).

For the 35-64 years category (Table 13) the percentage of respondents who answered important or very important on factor are in order as follows: Lack of Time Due to School Work (85%), Lack of Energy (75%), Lack of Time Due to Family (75%), Cost (63%), Lack of Access to Facilities (55%), Lack of Self Discipline (52.6%) and Support (42%).

Table 13 Barriers to Physical Activity Number outside bracket is frequency, number inside bracket is percent.

	18 - 34 Years					35 - 64 Years				
	Very Important	Important	Somewhat Important	Unimportant	Total	Very Important	Important	Somewhat Important	Unimportant	Total
Lack of Time	10 (16.4)	21 (34.4)	22 (36.1)	8 (13.1)	61	5 (25)	10 (50)	5 (25)		20
Lack of Energy, Too Tired	14 (23)	25 (40.9)	19 (31.1)	3 (4.9)	61	5 (25)	10 (50)	2 (10)	3 (15)	20
Lack of Time Due to School Work	35 (57.4)	17 (27.9)	6 (9.8)	3 (4.9)	61	6 (30)	11 (55)	3 (15)		20
Lack of Accessible Facilities		17 (27.9)	18 (29.5)	26 (42.6)	61	1 (5)	10 (50)	2 (10)	7 (35)	20
Lack of Time Due to Family	9 (14.8)	12 (19.7)	26 (42.6)	14 (23)	61	9 (45)	6 (30)	4 (20)	1 (5)	20
Lack of Baby Sitting	3 (5)	4 (6.7)	9 (15)	44 (73.3)	60	1 (5.3)	4 (21.1)	2 (10.5)	12 (63.2)	19
Cost	10 (16.4)	12 (19.7)	10 (16.4)	29 (47.5)	61	3 (15.8)	9 (47.4)	5 (26.3)	2 (10.5)	19
Lack of Support	6 (9.8)	5 (8.2)	12 (19.7)	38 (62.3)	61	3 (15.8)	5 (26.5)	1 (5.3)	10 (50.6)	19
Fear of Injury	2 (3.3)	2 (3.3)	6 (9.8)	51 (83.6)	61	6 (31.6)		3 (15.8)	10 (52.6)	19
Self Consciousness	2 (3.3)	5 (8.3)	12 (20)	41 (68.3)	61		4 (21.1)	3 (15.8)	10 (52.6)	19
Lack of Partner	4 (6.6)	8 (13.1)	20 (32.8)	29 (47.5)	61	3 (15.8)	3 (15.8)	3 (15.8)	10 (52.6)	19
Lack of Self Discipline	12 (19.7)	13 (21.3)	23 (37.7)	13 (21.3)	61	2 (10.5)	8 (42.1)	4 (21.1)	5 (26.3)	19

Total percent may not be 100 due to rounding of numbers.

It is clear from Table 13 that Lack of Time particularly due to school work followed by Lack of Energy are the two most important factors for both age categories that prevent respondents from being physically active. For the 35-64 age group, Lack of Time Due to Family is a third major barrier. While Cost was important to the 35-64 age group less than 40 percent of the 18-34 age group saw it as a barrier and access to facilities was seen as important (55%) by 35-64 year olds, but it was not so important (28%) to 18-34 year olds. Interestingly, more than 40% from each age category saw self discipline as important.

There are differences between the age categories. For the 35-64 age category, more see Lack of Time Due to Family, Cost and Access to Facilities as greater barriers than the 18-34 age category. This difference is probably due to greater family responsibilities in the older categories and more demand for time and money.

It is worth noting that physical activity patterns vary seasonally with more activity occurring for both age categories during the spring/summer season. This coincides with study demands probably being heavier during fall/winter and spring with varying time off during the summer. The point is that time due to school work may account some for less physical activity during fall/winter and it may not be just weather related.

All respondents were asked if they would be interested in physical activity 5 or more times per week for at least 30 minutes each time. Sixty-three percent of 18-34 year olds and 55 percent of 35-64 year olds responded yes even though they have time as a barrier.

Body Mass Index

Since there were only 6 male subjects, they were deleted from the analyses and female subjects were grouped in one of two age categories; 18-34 years and 35-64 years. A majority of

respondents in both age categories (95% of 18-34 year olds and 85% of 35-64 year olds) agreed that weight control was important. While more than 95 percent thought it was important, only 42 of 62 respondents in the 18-34 age category and only 7 of 20 respondents in the 35-64 age category where 85 percent thought weight control was important completed a write in (open ended) question on barriers to weight control that are important to them. In the 18-34 year category 16 respondents indicated No Time, 6 indicated Lack of Discipline, 4 indicated amount of Sitting for Course/Study and 1 indicated Tiredness. Fifteen subjects gave different single responses. For the 35-64 age group, of the 7 who responded, 2 indicated No Time, 1 indicated Lack of Self Discipline and 4 gave other answers (Table 14).

Table 14 Self Reported Weight Control Barriers

	18-34 Years	35-64 Years
No Time	16	2
Tiredness	1	
Sitting for Course/Study	4	
Lack of Self Discipline	6	1
Other	15	4
N =	42	7

While it is difficult to draw conclusions from Table 15, Lack of Time or No Time was the most frequent barrier identified by both age categories. The amount of Sitting Required for

Course/Study and Lack of Self Discipline were identified as barriers by 4 and 6 respondents in the 18-34 age category.

The findings for Research Question 2 (What factors do second year diploma nursing students perceive as barriers to health promoting eating practices, physical activity patterns and body mass index?) clearly indicate that Lack of Time is the barrier indicated as most important by the largest number of respondents in both age categories for all three of eating practices, physical activity patterns and BMI. It is not surprising that time is important. The second year students are part of a very time intensive training program which requires a lot of attention and energy. Therefore, respondents have little excess time to engage in long meal preparations or food buying or have much leisure time for physical activity with both eating practices and physical activity related to BMI (Weight Control). The time factor becomes more complex with the 35-64 age group where family demands increase and there is additional competition for time. As well, self confidence is an important factor in eating practices and self discipline becomes a barrier to physical activity and weight control.

CHAPTER FIVE

Conclusions

The conclusions of this study of second year diploma nursing students with respect to their eating practices, physical activity patterns and body mass index are:

1. Second year student nurses male and female combined in this study follow low fat eating practices that are similar to the general population of Manitobans;
2. Second year female student nurses ages 18-34 years in this study have a slightly higher percentage (58%) of respondents with a BMI in the normal range (20-24.9) than the same age group (54%) found in the 1991 Manitoba Heart Health Survey;
3. Second year female student nurses ages 35-64 years in this study have a higher percentage (47%) with a BMI in the normal range (20-24.9) than the same age group (39%) found in the 1991 Manitoba Heart Health Survey;
4. Second year female student nurses ages 18-34 years in this study have a higher percentage of respondents who are physically active at a moderate to very active level than that found in the same age group in the 1991 Manitoba Heart Health Survey;
5. Second year female student nurses ages 35-64 in this study have a higher percentage of respondents who are physically at a moderate to very active level than that found in the same age group in the 1991 Manitoba Heart Health Survey;
6. Regardless of the age categories of second year female student nurses in this study, they identify time as the major barrier to engaging in health promoting eating practices, physical activity patterns and (body mass index) achieving weight control.

7. The second year student nurses in this study, regardless of age category, are similar to Manitobans in general with respect to eating practices and BMI, but have higher percentages in moderate to very active levels of physical activity.

While student nurses are expected to be role models with respect to health promoting behaviors, this study indicates that they do not differ from the population as a whole.

Recommendations

1. This study should be repeated using an interview procedure rather than a questionnaire. The interview should allow for probing more deeply the barriers to eating practices, BMI and physical activity patterns.
2. Further analysis of the data in this study would be able to break down physical activity to identify the number of persons engaged in multiple activities and frequency including the summing of the frequency for all activity. This would have given a better picture of seasonal activity levels.

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April 1996

Director, School of Nursing

I am a graduate student in the Master of Education Program at the University of Manitoba. I have a special interest in Health Education and the preventive health behaviors of people in general and nurses in particular. Nursing has recently adopted health promotion as a professional responsibility. This is in line with Health Canada's paper 'Enhancing Prevention in the Practice of Health Professionals'. Research demonstrates that there is an expectation for nurses to conform to certain 'healthy' lifestyle practices.

I am requesting your permission to conduct a study of specific preventive health behaviors of all second year student nurses enrolled in the _____ Nursing School. This study is part of my thesis requirements for a Master of Education Degree. The study has been reviewed by the Faculty of Education Research and Ethics committee and the respective form is enclosed with this letter. If you grant my request please identify a class or classes through which I can access all your second year students. I would appreciate your assistance in informing the respective class instructors of the study and in providing me with instructor names and phone numbers. I would contact them on your instructions, to arrange a time to meet the students. I am enclosing a copy of the questionnaire for your information.

In my study, I will be asking questions about three preventive health behaviors and the factors that support or impede each. The questionnaire will take 15-20 minutes to complete. Student nurses enrolled in the second year of the nursing program will be invited on a voluntary basis to complete the questionnaire. Students will be under no compulsion to participate and those who do participate, may withdraw from the study at any time. A notice, informing students that the study is completed and copies of the findings will be available to them, will be placed on the bulletin board at their School of Nursing.

All information obtained from the responses will be strictly confidential. No student or school will be identified in the data reported. Copies of the findings will also be made available to the Director upon completion of the study.

Your assistance is appreciated. If you have any concerns, please contact me at (807) 733-2165 or my supervisor Dr. Dexter Harvey at 474-9223.

Sincerely,

L. Fay Ferris

TO SECOND YEAR STUDENTS NURSES

Dear students,

I am a graduate student in the Master of Education program at the University of Manitoba. I am conducting a study of preventive health behaviors as part of my thesis.

In my study I am interested in the preventive health behaviors of second year student nurses and the factors that support or impede their behaviors. I propose to compare the findings from my study with other studies of nurses in Canada and the Canadian population in General.

I am inviting you to participate in this study on a voluntary basis by answering a questionnaire that will take approximately 15-20 minutes. All the information obtained is strictly confidential, and no school or individual will be identified. You are under no obligation to answer the questions, and you may withdraw from completing the questionnaire at any time. You can refuse to answer single questions, yet continue in the study.

If you agree to participate, please come forward and I will give you a copy of the questionnaire and an envelope to place it in when completed.

If you are interested in the findings of the study, information that the study is completed and copies available will be placed on your bulletin board at the School of Nursing.

Your participation in completing this questionnaire is appreciated. If you have any questions about the study, you may contact me at (807) 733-2165, or contact my supervisor Dr. Dexter Harvey at 474-9223, University of Manitoba, Dept. Education.

Thank You

L. Fay Ferris

R.N., S.C.M., H.V., B.A.

QUESTIONNAIRE

D.

SECTION 1

1. First I would like to ask you a few questions about your health.

In general, compared to other persons your own age, would you say your health is

1. Excellent
2. Very Good
3. Good
4. Fair
5. Poor

2. Do you agree or disagree with the following statement?

Compared to most people my age I make more of an effort to improve my health.

6. Agree
7. Disagree
8. No Opinion

3. Circle the number that represents how these statements describe your general style of life.

	Never	Rarely	Some- times	Often	Always
I maintain a good body weight	1	2	3	4	5
Each day I get some fresh fruit or raw salad	1	2	3	4	5
Each day I participate in some physical exercise	1	2	3	4	5
There is a lot of stress in my work	1	2	3	4	5
The amount of sleep and rest I get is just about right	1	2	3	4	5
Each day I take a walk or spend some time outdoors	1	2	3	4	5
My working conditions are well organised and orderly	1	2	3	4	5
I eat snacks between meals	1	2	3	4	5

4. How much time can you spend daily to participate in positive health behaviors?

___15 mins. ___30 mins. ___45 mins. ___1 hr. or more

5. Does peer and/or family support assist you in maintaining positive health behaviors?

___Agree ___Disagree ___Don't Know

SECTION 1

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___15 mins. ___30 mins. ___45 mins. ___1 hr. or more

5. Does peer and/or family support assist you in maintaining positive health behaviors?

___Agree ___Disagree ___Don't Know

SECTION 2

Now I would like to ask you some questions about eating habits

6. To answer the following questions think about what you USUALLY eat during a week.

	Often	Sometimes	Never
Eat fried foods.....	_____	_____	_____
Drink 2%, 1% or skim milk	_____	_____	_____
Eat lean cuts of meat or trim fat from meat	_____	_____	_____
Use margarine/butter/vegetabl oil.....	_____	_____	_____
Remove skin from chicken/turkey.....	_____	_____	_____
Eat snacks like potato chips, corn chips..	_____	_____	_____
Eat bread crackers, muffins or cereals made from whole grains.....	_____	_____	_____
Eat processed meats like weiners, sausages, cold cuts.....	_____	_____	_____

7. When you do not prepare food at home, how frequently would you order fast food, for example hamburger and fries

8. Have you some knowledge of Canada's Food Guide? Yes _____ No _____

If YES Do you use it in selecting foods? _____

9. Which of the following factors is MOST important to you when purchasing food? (circle all that apply)

- 1 Cost
- 2 Time needed to prepare meals
- 3 Taste
- 4 Nutrition

10. How many times PER WEEK do you order in or take out food? Please circle your choice

- 1 less than once
- 2 1-3 times
- 3 4-7 times
- 4 more than 7 times
- 5 never

11. Do you agree or disagree with the following statements?

	Agree	Disagree	No Opinion
Skipping breakfast is an effective way to control or reduce weight.	1	2	3
Following a healthy diet is time consuming and expensive	4	5	6
I'd rather be overweight than give up many of the foods I like.	7	8	9

12. This question is asking you about factors that might prevent you from changing your eating habits. For each factor indicate the importance this factor has for preventing you from changing your eating habits.

	Very Important	Somewhat Important	Unimportant
accurate information about the composition of foods	_____	_____	_____
easy access to appropriate food	_____	_____	_____
support from family, friends, peers	_____	_____	_____
time for meal planning	_____	_____	_____
despite many time priorities it's necessary to remember diet	_____	_____	_____
self-confidence to maintain choice of 'healthy foods'	_____	_____	_____

13. This question is asking you about the EFFORT you feel is needed to maintain good eating habits for yourself?

a great deal _____ some _____ very little _____ none _____

14. And what EFFORT is needed to maintain good eating habits for your partner/family?

a great deal _____ some _____ very little _____ none _____

15. Please list or comment on any factors which may have affected your EFFORT to maintain good eating habits.

20. This question is asking you about factors that might prevent you from being more physically active. For each factor, indicate the importance this factor has for preventing you from being more physically active.

	Very Important	Important	Somewhat Important	Unimportant
lack of time due to other interests	_____	_____	_____	_____
lack of energy, too tired	_____	_____	_____	_____
lack of time due to work/school	_____	_____	_____	_____
lack of accessible facilities/programs	_____	_____	_____	_____
Lack of time due to family obligations	_____	_____	_____	_____
Lack of babysitting cost	_____	_____	_____	_____
lack of support from family/or friends	_____	_____	_____	_____
fear of injury	_____	_____	_____	_____
self-consciousness, ill at ease	_____	_____	_____	_____
lack of partner	_____	_____	_____	_____
lack of self-discipline, willpower	_____	_____	_____	_____

SECTION 4

This section relates to weight control

Please fill in your

Height _____ cms.

Weight _____ Kilograms

OR

OR

_____ Feet _____ Inches

_____ Pounds

21. Weight control is an important factor in maintaining our health.

Agree _____ Disagree _____

22. Please list any barriers you feel impede weight control:-

a. for yourself

b. for health care professionals

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

SECTION 5 DEMOGRAPHICS

HERE ARE SOME QUESTIONS ABOUT YOURSELF

Year of Birth 19____

Sex 1 female 2 male (circle your answer)

Marital Status 1 Married (including common-law
for a year or more)

2 divorced

3 single (never married)

4 separated

5 widowed

Permanent residence:

Immediately prior to your nursing course was your
residence Urban/City OR Rural

THIS COMPLETES THE QUESTIONNAIRE

YOUR PARTICIPATION IS GREATLY APPRECIATED.

QUESTIONNAIRE SOURCE LIST

SECTION 1 GENERAL HEALTH Questions 1-5

Question 1 HPS # 1
 " 2 HPS # 2
 " 3 CFS
 " 4 Researcher
 " 5 Researcher

SECTION 2 EATING HABITS Questions 6-15

Question 6 MHHS # 1 Question 11 HPS # 80
 " 7 MHHS # 20 12 HPS
 " 8 MHHS # 2 13 Researcher
 " 9 MHHS # 17 14 Researcher
 " 10 MHHS # 18 15 Researcher

SECTION 3 EXERCISE/PHYSICAL ACTIVITY Questions 16-20

Question 16 MMHS # 26 Question 19 HPS/MMHS
 " 17 CFS # 27 " 20 CFS/MMHS
 18 CFS/MMHS

SECTION 4 WEIGHT CONTROL

Self-reported Height and Weight
 and Questions 21 -22

Question 21 MMHS
 " 22 Researcher

SECTION 5 DEMOGRAPHICS OF STUDY GROUP -

Research Questions Sources

CFS -Canada Fitness Survey 1983
 HPS -Health Promotion Survey 1985
 MMHS-Manitoba Heart Health Survey 1990



Faculty of Education ETHICS APPROVAL FORM

To be completed by the applicant:

Title of Study:

STUDY OF SPECIFIC PREVENTIVE HEALTH BEHAVIORS OF
SECOND YEAR NURSING STUDENTS IN WINNIPEG.

Name of Principal Investigator(s) (please print):

L. FAY FERRIS

Name of Thesis/Dissertation Advisor or Course Instructor (if Principal Investigator is a student) (please print):

DEXTER HARVEY

I/We, the undersigned, agree to abide by the University of Manitoba's ethical standards and guidelines for research involving human subjects, and agree to carry out the study named above as described in the Ethics Review Application.

Signature of Thesis/Dissertation Advisor or Course Instructor
(if required)

Signature(s) of Principal Investigator(s)

To be completed by the Research and Ethics Committee:

This is to certify that the Faculty of Education Research and Ethics Committee has reviewed the proposed study named above and has concluded that it conforms with the University of Manitoba's ethical standards and guidelines for research involving human subjects.

Dave Jenkinson
Name of Research and Ethics
Committee Chairperson

April 18 1996
Date

Signature of Research and Ethics
Committee Chairperson