Mount Saint Vincent University

Department of Human Ecology

Social Barriers to the Maintenance of a Very Low Fat Cardiac Diet: A Qualitative Study

by

Colleen R. Wright

A Thesis

Submitted in partial fulfilment

of the requirements for the degree of

Master of Arts in Human Ecology

in the Department of Human Ecology

Mount Saint Vincent University

October, 1995

Halifax

Nova Scotia

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

LIST OF FIGURES

ABSTRACT

The high incidence of nutrition–related chronic diseases, such as cardiovascular disease (CVD), have resulted in premature death and disability for many Canadians each year. The role of a low fat diet in promoting the regression of atherosclerosis is currently being studied with positive results emerging when low fat intakes can be maintained long term.

A review looking at compliance to low fat eating patterns has indicated levels as low as 50% while long term maintenance, over a period of years, has been estimated as low as 20%. Low success rates may be due to the failure to appreciate all factors influencing both compliance and long term maintenance as well as the complexity of eating behaviour.

A qualitative research design was used to explore the experiences of a group of cardiac patients in order investigate what factors affect their long term maintenance of a very low fat diet. The goal was to contribute towards a socioenvironmental theory which considers the external factors within an individual's environment affecting diet maintenance.

Fifteen individuals participated in two face to face interviews and one telephone interview over a period of four months. All participants had completed an 8 week cardiovascular risk reduction education course. The interviews were completed in order to understand how external factors such as social situations, family and friends, food cost, accessibility, and amount and type of effort influenced the ability to maintain their diets.

Nine themes emerged from the data, and were classified as personal or social barriers. Personal barriers are internal factors respondents identified that are within their direct control. These barriers are represented as: Personal Food Preferences, Knowledge Interpretation, Health Perceptions, and Strategies. Social barriers are external factors within their environments that respondents felt they had little or no control over. These are represented as: Financial Costs, Availability of Food, Social Environment, Time, and Culture.

Themes were arranged into a model offering a systematic organization illustrating the existing interrelationships between personal and social barriers. The model represents the overall experiences and describes both the common and differentiating characteristics of respondents.

These findings contribute towards the development of a theory incorporating a socioenvironmental approach to nutrition education by presenting a more adequate representation and deeper understanding of how external factors influence long term diet maintenance. Research findings can be integrated into policies and programs resulting in the provision of healthier environments; environments which will support, encourage and reinforce efforts to achieve and maintain nutritional well–being.

ACKNOWLEDGEMENT

I would like to gratefully acknowledge the assistance of the following people for their contributions to this research project:

First I would like to thank the members of my thesis committee.

Dr. Kim Travers, for introducing me to a variety of topics of interest throughout my graduate program and for sparking my interest in this particular research project. I would especially like to thank Kim for serving as an incredible model to me, for always finding time to meet with me and for her valuable guidance throughout this project.

Dr. Lydia Makrides, for providing me with the opportunity to work at the Cardiac Prevention Research Center, for being a key influence in awarding me a graduate scholarship, and for reminding me that anything can be accomplished as long as you believe.

Dr. Theresa Glanville, for her professional editing skills and valuable constructive criticism.

As well I would like to thank:

The staff at the Cardiac Prevention Research Center, for their continual administrative support, encouragement and valued friendships. I will truly miss all of you.

Dr. Howard Wightman for allowing me access to the names of all his past patients.

To all research participants, for their extended warmth and hospitality and who without their valuable input this project could not have been completed.

To my husband Bill, for his endless source of support and encouragement and for always knowing when I just needed to laugh. His love, caring and humour have helped me throughout my educational pursuits, and his continual faith and confidence in me will always serve as a reminder that new challenges are out there waiting to be met.

Thank you.

CHAPTER I: INTRODUCTION

1.1 BACKGROUND AND RATIONALE

1.1.1. Common approaches to the promotion of health

Currently there are three main approaches applied towards health promotion. These approaches are referred to as the medical approach, the behaviourial approach and the socioenvironmental approach (Health and Welfare Canada {H&WC}, 1993).

The medical approach concentrates on disease along with physiological risk factors. Interventions within this approach commonly involve screening for physiological risk factors as well as surgical and drug therapies.

The behaviourial approach targets the individual's risk factors, high risk groups or those people who are considered to be living unhealthy lifestyles. Behaviourial interventions promote general well-being through means of health education.

The socioenvironmental approach considers the psychosocial risk factors as well as the socioenvironmental risk conditions. Interventions within this approach include small group development, community organization, health advocacy for healthy public policies and political action.

1.1.2. Cardiovascular disease and the behaviourial approach

Many interventions have targeted the risk factors for cardiovascular disease (CVD) using the behaviourial approach (Smil, 1989). Intensive counselling and/or drug treatment of the individual are common strategies applied to achieve a decrease in the

prevalence of the disease. Two examples of intervention trials that have utilized such strategies have been the MRFIT (Multiple Factor Intervention Trial Research Group) and the LRC (Lipid Research Clinics Program) studies (Smil, 1989). Within each of these large intervention trials dietary factors targeted for change included adjustments to the amount and type of fat.

More recently, dietary interventions have begun to investigate the effects of very restrictive fat intake by lowering the total percentage contribution of fat to 10–20% of the total dietary energy. Positive results showing regression of the disease appears to be possible when individuals can successfully maintain diets with very low levels of fat (10–20%) (Ornish, Brown, Scherwitz, Billings, Armstrong, Ports, McLanahan, Kirkelide, Brand, & Gould, 1990; Schuler, Hambrecht, Schlierf, Grunze, Methfessel, Haver, & Kubler, 1992; Leiter, 1991; Blankehorn, 1989; Schwartz, Valente, Sprague, Kelley, Cayatte, & Mowery, 1992). While regression of atherosclerosis can occur with restrictive dietary fat intake, studies examining the compliance and long term maintenance of any such changes to an individual's diet are not as encouraging.

1.1.3. Non-compliance: Limitation to the behaviourial approach

Measures of compliance to dietary regimens, as described by Glanz (1980), are intended to evaluate how similar a subject's eating behaviour are in comparison to the dietary recommendations. In a review of compliance with dietary regimens, it is suggested that only 50% of patients following low fat eating patterns were considered

to be "excellent" or "good" compliers (Glanz, 1980, p.791). High levels of relapse with individuals attempting to change their smoking and eating behaviour have also been reported by Urban, White, Anderson, Curry & Kristal (1992). This relapse commonly occurs within the first six months of attempting change. Trials dealing specifically with CVD patients prescribed a 20% fat diet reaffirm the difficulties patients have with compliance (Nikolaus, Schlierf, Vogel, Schuler & Wagner, 1991; Schuler et al, 1992) as do recent trials demonstrating high dropout rates from therapeutic dietary regimen programs (Schuler et al, 1992). Results of long term maintenance of newly acquired eating behaviours are even more discouraging. Treatment programs of weight loss over a period of years suggest less than 20% of patients are successful (Glanz, 1980).

The low success rate of these studies may be due to the failure to appreciate the complexity of eating behaviour. Understanding what helps or hinders the long term maintenance of any newly established eating behaviour is, therefore, going to be equally complex. In hopes to gain a better understanding of these complexities towards both eating behaviour and long term maintenance, researchers have considered a variety of theories.

1.1.4. Understanding eating behaviours

Theories are commonly sought out and applied to research in order to provide a framework to guide one's efforts and to help conceptualize one's findings. In nutrition practice, theory is necessary in order to enhance the knowledge of how and

why individuals are capable of maintaining new eating behaviours. Theories that are capable of explaining the complexity of eating behaviour can then guide the development of relevant programs designed to initiate long term maintenance of new eating behaviours. (Gillespie & Brun, 1992).

In the early 1980's nutrition researchers often considered theories that concentrated on the individual behaviours leading to noncompliance. These theories were commonly borrowed from the discipline of psychology, focusing on the discovery of personal characteristics and often relating to ideas of behaviour modification (Coates, 1981) and cognitive processing (Sims, 1981). The most common theory applied to behaviour change during this time period was the Health Belief Model (Rosenstock, 1989).

More recently, theories that incorporate the many social and environmental factors of life have been considered. These theories no longer concentrate solely on the individual but encompass a much broader view, offering a more holistic approach towards the investigation of behaviourial change.

The discipline of nutrition education has been criticized for the lack of supporting theory for many education programs as well as much of the research (Glanz & Eriksen, 1993; Achterberg & Brun, 1992). Also, there is no suitable theory that deals specifically with dietary intervention programs for CVD patients following very low fat diets.

Without a suitable theory upon which to model dietary programs for CVD patients, it is difficult to develop a thorough understanding of factors influencing long term

maintenance.

Although a complete theory has not yet been developed, nutrition education literature has identified certain "external factors" which appear to influence long term maintenance of low fat diets. These factors identified within an individual's environment are cost, family influence, social influence, skills, accessibility, availability, time and effort (Glanz, 1985; Janas, 1993; McAllister, Baghurst & Record, 1994).

There currently is a need for further investigation of these specific external factors in order to fully understand the complexity of eating behaviours and how such factors influence the long term maintenance of new behaviours. Once an understanding of all factors influencing long term maintenance of eating behaviours is obtained, more effective nutrition programs and interventions can be developed.

1.2. PURPOSE AND RESEARCH QUESTIONS

The purposes of this study are:

1). to explore the experiences of a group of cardiac patients prescribed a very low–fat (10–15%) cardiac diet to reveal the social (external) barriers that they encounter.

2). to describe the effects that these social barriers have on long term maintenance of a very low–fat cardiac diet.

The following research questions are derived from previous findings in the literature. These questions were used to guide the exploration of the experiences of cardiac patients following very low-fat diets:

1. What are the experiences associated with following a very low-fat cardiac diet in social situations?
2. In what ways have family and friends influenced the ability to follow a very low-fat cardiac diet?
3. How has food cost influenced the ability to follow a very low-fat cardiac diet?
4. How has accessibility to food influenced the ability to follow a very low-fat cardiac diet?
5. Have the amount and type of effort involved influenced the ability to maintain a very low-fat cardiac diet?

CHAPTER II: REVIEW OF LITERATURE

2.1. HEALTH AND ITS DETERMINANTS: AN EXPANDING VIEW

The definitions and views of health have continually developed and changed throughout history. Along with these changes have come expanded views towards the corresponding determinants of health and how such determinants interact with each other in a complex web of risk factors and conditions.

In the early part of the 20th century, the dominant definition of health was developed from a medical perspective. This definition primarily considered health as "the absence of disease". When applying this narrow definition, a person was classified as either being healthy – with no disease, or unhealthy – with disease. This view suggests that absence of disease process is the sole determinant of health (H&WC, 1993).

A much broader and well established definition of health has been presented by the World Health Organization (WHO). This definition of health is one that considers the physical, mental, and social well–being of the individual and does not simply consider the absence of disease (WHO, 1986). The definition presents a much more holistic view of the individual while allowing for a broader consideration of the determinants of health.

In the past quarter of a century within Canada, there have been several landmark documents that have redefined health and its overall determinants as well as redirecting the approaches taken towards promoting health. A New Perspective on the

Health of Canadians (Lalonde, 1974), the Ottawa Charter for Health Promotion (WHO, 1986) and Achieving Health For All: A Framework for Health Promotion (H&WC,1986) outline such expanded thinking.

The Lalonde report (1974) was one of the first documents to discuss the role of broader environmental factors determining health while introducing the health field concept. The health field concept views a variety of factors having influence towards sickness and death. These factors are: human biology, environment, lifestyle and health care organization (Evans, 1982). Unfortunately, despite the potential broad focus of this document, individual lifestyle received the most attention and emphasis. Within the lifestyle factor the individual's control and responsibility for personal behaviours is emphasized.

The shift towards this personal lifestyle view of health was due primarily to the decline in infectious disease mortality. This decline was soon replaced with the increased incidence of degenerative disease such as cardiovascular disease (CVD) and different forms of cancer. These chronic diseases all have a strong lifestyle component.

The Ottawa Charter for Health Promotion (WHO, 1986) and Achieving Health For All (H&WC, 1986) further expand the vision of health incorporating a sociological and environmental analysis of health and disease through health promotion. The definition of health promotion includes the notion of how to enable people to increase the control over their lives and improve their health (WHO,1986). In order for one to be considered healthy we can no longer solely look at the absence of disease or one's own lifestyle, but must consider the determinants of peace, shelter, education, food,

income, a stable ecosystem, social justice and equity. Health is now considered a resource for living.

This view of health arose from the discovery that different groups in a given population displayed variations in health status (Rootman, 1988). For example, there are powerful and persistent inequalities in health between individuals in lower socioeconomic status (SES) groups as compared to those in higher SES groups (Slater & Carlton, 1985; Slater, Lorimor & Lairson, 1985).

Socioeconomic status takes into account the individual's overall ranking in regard to income, level of education and occupational status. Within Canada people's health remains directly related to their SES with higher levels of mortality, morbidity, disability,and utilization of health services as well as fewer health protective behaviours displayed within lower SES groups (Rootman, 1988). It is well known that these inequalities in health are not due merely to medical and behaviourial issues. Social and economic determinants also have a tremendous influence towards health.

2.2. EMERGING APPROACHES IN THE PROMOTION OF HEALTH

Along with the evolution of the definition and determinants of health, there have emerged three different approaches in the promotion of health. These three approaches, as presented by Health and Welfare Canada (1993) are:

1) The Medical Approach
2) The Behaviourial Approach
3) The Socioenvironmental Approach

The medical approach establishes its problem with disease categories and physiological risk factors. Interventions are targeted towards high risk individuals. The principle strategies within this approach are screening for physiological risk factors, surgical intervention, drug therapy and medically managed health behaviour change.

The behaviourial approach concentrates on the behaviourial risk factors of high risk groups or those individuals considered to be living unhealthy lifestyles. This approach moves beyond disease prevention incorporating concepts of promoting physical well–being. The principal strategies include health education.

The socioenvironmental approach defines the problem as psychosocial risk factors and socioenvironmental risk conditions. This approach is true to the definition of health promotion targeting high risk environments rather then the individual. Examples of principal strategies within this approach include small group development, community organization, health advocacy for healthy public policies supporting lifestyle choices and political action.

Although the majority of large cardiovascular disease interventions have commonly applied a behaviourial type approach, significant decreases in the incidence in CVD have not occurred. There still remains the need for further research to fully understand the disease process as well as which approach can best be applied.

2.3. CARDIOVASCULAR DISEASE AND DIETARY CHANGE

Cardiovascular disease (CVD) is a broad term used to classify all diseases of the circulatory system. These diseases include acute myocardial infarction, ischemic heart disease, valvular heart disease, peripheral vascular disease, arrhythmias, high blood pressure and stroke. The most common forms of CVD are coronary heart disease (CHD) (classified as a disease of the coronary blood vessels of the heart, manifesting itself mainly as myocardial infarction or heart attack) and cerebrovascular disease. (Heart and Stroke Foundation of Canada {HSFC}, 1991).

Cardiovascular disease is the leading cause of death worldwide. Although the disease exhibits large differences in the incidence rates within and between countries, originally CVD was considered a disease of affluence. The increase in incidence was associated with the increased prosperity in western societies, and tended to strike the wealthier members of those countries.

In recent years, however, this pattern has begun to change. Marmot and Mustard (1992) explain that while the age standardized death rate of CHD (a common form of CVD) has fallen and continues to fall in wealthy countries, the more rapid declines are seen within higher socioeconomic status (SES) groups. With respect to CVD in affluent countries, death rates are generally higher with lower SES. As well, CHD is now emerging as a major cause of death in some developing countries. These changing patterns suggest that the underlying causes of CVD may in fact be more closely associated with one's lifestyle and environment rather than with one's genetic makeup.

In Canada, CVD is the major cause of death, disability and illness accounting for over 40% of all deaths in 1989 (Nova Scotia Heart Health Program {NSHHP}, 1992). Within the province of Nova Scotia, research from the Heart and Stroke Foundation of Canada (1991) has shown that this province has the second highest age-standardized mortality rates from CVD among all ten provinces.

A greater risk of CVD has been associated with numerous factors of lifestyle and diet. These risk factors classified as both modifiable and non-modifiable are identified as contributing determinants towards further progression of atherosclerosis. Furthermore, the presence of multiple risk factors work together in a collective manner greatly increasing the level of risk of CVD (NSHHP, 1992). Research has shown that 70% of adult Nova Scotians have one or more risk factors for CVD and 25% have two or more (Nova Scotia Department of Health {NSDH} & Department of National Health and Welfare {DNHW}, 1987).

It should be noted that the term "risk factor" is used instead of the term "cause" as the exact identification of the nature of the connection between the factor and atherosclerosis as well as the mechanism of cause and effect is not yet fully understood.

The non-modifiable risk factors are gender and heredity, while the modifiable risk factors are high blood cholesterol, sedentary lifestyle, high blood pressure, diabetes, smoking, psycho-social stress and obesity (HSFC, 1991). The main risk factors considered are smoking, high blood pressure, elevated levels of blood cholesterol, and physical inactivity (H&WC, 1993). More specifically, the ratio of

HDL to LDL cholesterol is inversely related to incidence and this ratio is more significant than the relation of total blood cholesterol.

The nutritional factors of greatest significance in the incidence of CVD are diets high in calories compared with energy expenditure, rich in fat, saturated fat, cholesterol and sodium. Conversely diets high in starch, vegetable protein and fibre appear to have a protective effects against CVD incidence (NSDH & DNHW, 1987). Due to these relationships the dietary habits of individuals with CVD are commonly targeted for change.

The main objective of interventions is to decrease the amounts and types of fat within the diet. Although reports vary on the effectiveness of diet towards overall reductions in blood cholesterol levels, reductions in fat content is a major part of most interventions (Smil, 1989).

Studies are underway to examine whether regression of atherosclerosis can be achieved by severely restricting the amount and type of fat intake. The majority of these studies relied heavily upon animal models including birds, rabbits, swine, dogs, chicks, pigeons and nonhuman primates, and more recently on humans. These studies have shown that regression is possible in both animals and humans (Loscalzo, 1990; Blankenhorn et al, 1989).

The severity of the fat restriction varies between trials. The fat content in many regression interventions has ranged from 20% of total calories (Nikolaus, Schlierf, Vogel, Schuler & Wagner 1991; Schuler et al, 1992) to levels as low as 10% of total calories (Ornish et al, 1990) with the general goal of sustained reductions of

blood cholesterol. In order to achieve a sustained reduction, however, a continuous restriction in fat intake and ultimately permanent changes in eating behaviours must be present.

2.4. DIETARY COMPLIANCE

Studies looking at compliance and long term maintenance of new eating behaviours are discouraging, often identifying deterioration of dietary discipline and signs of relapse within the first six months following interventions (Urban, White, Anderson, Curry & Kristal, 1992). In a report by Nikolaus et al (1991), problems with compliance were identified in CVD patients following a 20% fat diet. Results showed that patients falsified their intakes in order to describe what they thought the dietitian wanted to hear, or upon familiarity with protocol procedures, only ate what was considered heart healthy during the set days before the protocol. Such finding suggest that although patients may be quite capable of understanding and assimilating the information regarding a healthy diet, the actual maintenance of behaviour change may be more complex.

The problems with compliance and long term maintenance of dietary behaviours was also substantiated by Schuler et al (1992). Once again deterioration of dietary discipline was seen within the first six months of trials investigating the effects of intensive physical exercise and a low-fat diet (20%) on regression of atherosclerosis.

Findings from these studies support the evaluation of traditional nutrition

interventions as described by Glanz (1980). In this review, the extent of compliance, problems encountered when measuring dietary compliance and determinants of compliance are discussed. Low rates of compliance to diets have been reported at levels of 50%. Long term maintenance of weight loss, over a period of years, is reported as low as 20%. These low rates of both compliance and long term maintenance to dietary regimens is a concern to all nutrition professionals promoting the benefits of maintaining a low fat diet.

2.5. UNDERSTANDING NUTRITION BEHAVIOUR

In order to gain a better understanding of what affects nutrition behaviour change and how to ensure long term maintenance of eating behaviours, researchers have developed a variety of theories. Theory as described by Achterberg & Gillespie (1992, p.181) is "the set of principles that tells us why concepts are related to each other; it is a description of patterns of regularity among groups of concepts, events, or objects". A suitable theory can lead to a better understanding of the question posed and in turn help explain the determinants that mediate effective programs (Smith & Lopez, 1991).

Within nutrition education, theories from a variety of disciplines have been examined when researching eating behaviour. Theories borrowed from anthropology, behavioursim, communication, education, human development, psychology, sociology and social marketing have all been applied in hopes of a better understanding of eating behaviours (Achterberg, Novak & Gillespie, 1985; Smith et al, 1991).

In the 1980's one of the most common theoretical frameworks that was applied to behaviour change interventions was the Health Belief Model. The model applies an individual perspective concentrating on human behaviour and the factors that influence a person to choose prevention and adopt a healthier lifestyle (Rosenstock, 1990).

According to the Health Belief Model, there are seven primary variables which influence a person's choice to explain why and under what conditions that person will take preventive action. These variables consist of: perceived susceptibility, perceived seriousness of disease, perceived benefits of preventive action, perceived barriers to action, health motivation, perceived control and health value.

Other psychosocial based theories applied to nutrition education programs have also concentrated on the individual. These theories commonly entail the acquisition of new knowledge through the dissemination of information; the underlying premise being that through acquiring knowledge there will be a modification of attitudes and behaviour. Although such approaches can increase dietary knowledge, the attainment of new knowledge does not appear to be sufficient to change one's eating behaviour. Weak correlations have also been shown between nutrition-related attitudes and behaviour change. Consequently, nutrition educators realize that the relationship between knowledge, attitudes, and behaviour does not proceed in a linear direction. Behaviour is far more complex then attributing its change and maintenance to the gaining of knowledge and attitudes (Johnson & Johnson, 1985).

Limitation of traditional, individualistic theories suggest that when researching the development and maintenance of any new eating behaviour, all factors relating to,

and the context in which each behaviour is displayed, must be considered. Program planners and professionals can no longer assume that an individual is capable of solving their own problems as long as they are provided with sufficient knowledge and personal commitment. The individual's lifestyle is much more complex than isolated acts under their own autonomous control.

When examining the complexity of eating behaviours one must first be aware that eating behaviours are rarely individually based and do not persist in isolation from one's social environment. Eating behaviours are influenced directly and indirectly by family, peers and society (Achterberg & Clark, 1992). Eating behaviours are habitual with many social, cultural and economic factors contributing to their development, maintenance and change.

More recently, we have seen theories applied that take into consideration both the individual and the social environment. In an article proposing an ecological model for health promotion, McLeroy, Bibeau, Steckler & Glanz (1988) discuss the range of strategies that are currently available for health promotion programming. Such strategies consider multiple levels of influence on behaviour, such as intrapersonal, interpersonal, institutional, community and public policy. To date, however, there still exists a lack of theory-based research that will contribute towards explaining the complexity of long term maintenance of new eating behaviours.

By applying a socioenvironmental perspective to understanding health behaviours, including the identification of social barriers to healthy eating, it may be possible to develop a better understanding of all factors inhibiting long term

maintenance of newly acquired eating behaviours. A socioenvironmental strategy could consider both the individual's responsibility as well as the social and cultural forces when looking at a problem.

2.6. SOCIOENVIRONMENTAL INFLUENCES ON NUTRITION BEHAVIOUR

A review of the nutrition education literature indicated several studies that discuss the presence of external factors influencing dietary eating behaviour. Social and environmental issues influencing eating behaviour identified by Achterberg and Clark (1992) were food availability, accessibility, price, socioeconomic, geographic, political and historical characteristics. Glanz (1985) also referred to food costs, access to food, skill, time and preparation effort as barriers within the environment. These barriers were considered as factors that may further increase the likelihood of noncompliance with special diets. The external factors or 'costs' of a healthy diet including the direct financial cost of food as purchased, access, transportation, availability of healthy food choices, skills, facilities, and time have also been reported as making a healthful diet more difficult to achieve (McAllister, Baghurst & Record, 1994).

In a research study by Janas (1993), the experiences of a group of adults with hypercholesterolemia attempting to make changes to their dietary habits were explored. Findings from this study list similar factors such as time, money, and family food preferences as external influences that existed in participants' lives before attempting their dietary behaviour change. Though this specific study did not focus on these

external influences, it recommended further research on such influences.

Although investigation of the above-mentioned factors has not been completed with CVD patients following low fat diets, they have provided a framework as where to begin this research towards the investigation of the social barriers when maintaining a low fat cardiac diet.

CHAPTER III: METHODOLOGY

This chapter details and justifies the use of a descriptive qualitative research approach. The procedures used for sampling, data collection and analyses are provided along with a reflection of and the limitations to the research process.

3.1. RATIONALE FOR USING A QUALITATIVE APPROACH

This research project was undertaken in order to reveal and examine the social barriers to following a very low fat diet that a group of cardiac patients have been experiencing. The main purpose was to explore and describe these experiences in order to better understand the impact of these barriers on long term maintenance of their prescribed diets. By understanding the experiences and needs of the learners, nutrition education researchers can then develop and implement programs that will be more effect in promoting long term maintenance of new eating behaviours.

As the primary purpose was to explore and describe, a descriptive research approach was the most appropriate design. A descriptive qualitative design was selected in order to provide detailed narrative data regarding the experiences of a particular group.

Qualitative methods of data collection are considered extremely suitable for such exploratory research designs (Patton, 1990). It is through the application of qualitative methods that one can gain a deeper understanding of a specific issue within the social context, structure and interaction of the exclusive group. Through a variety of qualitative data collection techniques (ie. participant observation, in-depth

interviewing, focus groups) the discovery of pertinent questions, variables, concepts and problems and the generation of hypotheses and theories can be achieved (Achterberg & Shepherd, 1992).

3.2. SAMPLING TECHNIQUE

The purpose of sampling in qualitative research is to discover and describe categories of phenomena (Achterberg, 1988). In particular, maximum variation sampling is used in order to identify common patterns that cut across variations of life (Patton, 1990).

Purposive sampling was used to select information rich cases for in-depth study. Using this maximum variation sampling technique, participants were selected to represent a wide range of variations in gender, age, length of time on diet, education level, working status, cooking skills, household size and socioeconomic status. These characteristics were chosen as they represent different circumstances of influence towards eating behaviours that assist in an increased understanding of variations in experience, even with a small sample size.

Subjects were excluded if they were unable to answer questions verbally and/or coherently and/or were unable to oblige to the time commitment of the study.

3.2.1. Gaining Access To Patients

At the time of the research, a cardiovascular risk reduction education course was being offered in the Annapolis Valley, Nova Scotia. This course began in Spring

of 1992. One of the main components of the course entails educating and encouraging participants to follow a severely restricted (10% of energy from fat) diet.

I became familiar with the course through my work as a graduate student at the Cardiac Prevention Research Center, Halifax, Nova Scotia, As I was interested in interviewing people who have been trying to maintain a diet regimen, the participants of this course offered a suitable segment of the population from which to choose. A letter was sent to the program director, Dr. Howard Wightman, asking for his assistance for access to names of program participants (see Appendix A). Dr. Wightman proceeded to provide the necessary information and felt that most participants would be willing to participate in such a study.

The course itself has been called "Extended Warranty II". It is an eight week lifestyle education course developed for individuals previously diagnosed with coronary heart disease/stable angina and/or previous myocardial infarction. At the time of this study, seven courses had been completed with an average of ten patients per course (not including spouses/significant others).

Throughout the eight weeks, one of the main components the course concentrates on is educating all participants on the benefits and clinical significance of maintaining a severely restricted fat (10% energy from fat) diet. This is promoted with hopes of inhibiting further progression of CVD as well as possible regression of CVD. Although participants are not directly prescribed a 10% energy from fat diet plan individually, they are all strongly advised to follow such a diet regimen.

The nutrition eduction section involves information concentrating on meal

planning, label reading, recipe modification and eating in a social situation. A main portion of this information is delivered through means of "hands on" cooking experiences. All sessions were led and facilitated by the program director, Dr. Wightman, and two registered dietitians. In addition to nutrition education, the course provides information on risk factor education, stress and cardiac health, and smoking cessation.

3.2.2. Sample Size

When conducting a purposeful study, the typical focus is on in– depth study of a relatively small numbers of subjects. Sample size is often small because the nature of qualitative research demands intensive and prolonged contact with participants that in turn yields an enormous amount of data per person (Marshall & Rossman, 1989). Sample size is considered sufficient when an increase in sample size yields no new themes or issues. This phenomena is referred to as saturation (Patton, 1990).

It has been proposed by Achterberg (1988) that sample size cannot be accurately estimated prior to the beginning of the study. However, based on a comparable study by Janas (1993), a sample of 15 was deemed to be adequate. Fifteen subjects from the Extended Warranty II population were chosen initially with the possibility of recruiting additional subjects based upon the achievement of saturation.

Participants were recruited from each of the seven different course periods in order to explore the experiences of patients at different stages of maintenance. Two

individuals from each course were purposefully chosen, making up fourteen all together, with a random selection of the fifteenth.

3.2.3. Contact Procedures

All patients were initially contacted by telephone, informing them that their names and telephone numbers had been supplied by Dr. Wightman. Each potential participant was informed that the intent of the study was to learn about the experiences they had encountered while attempting to maintain their low fat diets since completing the course. It was emphasized at this time that understanding the client's perspective and experiences was needed and that the research was not part of an evaluation of their success with maintaining their diet, or of the program.

Patients were also informed that participation in the research project would involve being interviewed by a graduate student in human ecology interested in the area of heart health. At this point subjects were not informed that I was a registered dietitian. This approach was taken to decrease the possibility that participants would answer interview questions with what they perceived to be nutritionally "correct" responses. Throughout the course of interviews however, if directly asked the information was not withheld.

All patients were informed that their participation with the research project was strictly voluntary and that they could withdraw at any time throughout the study.

Written informed consent (see Appendix B) was obtained from all participants for:

1) allowing the interviews to be tape recorded and

2) allowing entrance to the respondent's home.

3.3. DATA COLLECTION PROCEDURES

Marshall and Rossman (1989) and Patton (1990) provide detailed discussions on how to best match research questions with appropriate strategies. Two fundamental techniques that qualitative researchers most commonly rely on in order to gather information are observation and in-depth interviewing. As well, they suggest that the most appropriate data collection techniques to be used when undertaking an exploratory study are: participant observation, in-depth interviewing and elite interviewing. Because participant observation is impractical for the purpose of this study, individual in-depth interviewing was the primary data collection technique, supplemented with observations in participants' homes.

3.3.1. In-depth Interviews

Face to face interviews refer to a meeting at which one person (the researcher) systematically obtains information from another through questioning. The research protocol for this study planned for three in-depth face to face interviews with each participant. The number of interviews was decided upon after consulting the comparable research project of Janas (1993).

The key strengths of in-depth interviews as described by Marshall and

Rossman (1989) are: the ability to obtain a large amount of data quickly, the ability to immediately follow up questions and, if necessary, ask for further clarification, as well as allowing for collection of a wide variety of perspectives when using a number of different participants,

The main concerns with using in-depth interviews for the primary data collection technique were that interviews involved personal interaction, therefore, full cooperation of participants was essential; lack of experience as a researcher with probing in order to obtain sufficient understanding of research questions; and the potential for personal bias.

At the beginning of the first interview the purpose of the study, methodology, intended use of data and results, as well as the procedures for maintaining confidentiality were reviewed verbally with each respondent. All participants were asked at this point to complete the informed consent forms. Each participant was given a code in order to properly identify their interview and to ensure confidentiality.

At no time did I specify to the respondent that spouses or significant others would not be allowed to participate. Those individuals who were primarily responsible for the shopping, preparing and cooking of food items were encouraged to participate in all interviews.

Throughout all interviews respondents were quite explicit about their experiences since completing the Extended Warranty II course as well as relaying information about the knowledge they had attained. During several interviews discussions led to participants asking nutrition related questions. Each one of these

situations could have easily become a counselling opportunity; however, to avoid conflict, subjects were advised to contact either of the dietitians who had facilitated the course

Although in-depth interviews are typically much more conversational than formally structured, they can vary in the overall degree of structure (Marshall & Rossman, 1989). This was done to achieve a more interactive and equal power dynamic. The natural context is also central to the philosophy of qualitative research (Achterberg & Shepherd, 1992).

Literature suggests that during in-depth interviews the researcher allow the natural and personal structure of responses from the participant to be given in order to obtain the participants' perspectives on the social phenomenon of interest rather then imposing his/her own perspective (Marshall & Rossman, 1989; Patton, 1991; Achterberg & Clark, 1992). In order to ensure that participants relayed their own perspectives, each participant was encouraged to discuss issues in the manner or order with which they felt most comfortable.

The first two rounds of interviews were conducted in the respondent's home for reasons of convenience, and to establish and maintain a relaxed comfortable environment. The respondent's homes were also viewed as appropriate sites in which to observe the wide range of phenomena under study.

All interviews were recorded on cassette tapes. Although the use of a tape recorder does introduce an extraneous element which may cause a certain degree of social reactivity, these effects are thought to be minimal and limited to a brief period

at the beginning of each interview (Achterberg & Shepherd, 1992). All taped interviews were then transcribed verbatim.

3.3.1.1. Interview Guides

Interview guides were developed for both sets of face to face interviews in order to ensure that all participants relayed information about their experiences concerning a number of predetermined categories associated with social barriers (see Appendix C). The guides offer a basic framework for covering all topics of interest. This framework then provides the opportunity to allow each participant to be approached as an individual and to follow up on any unanticipated questions and issues that may be raised throughout the interview (Marshall & Rossman, 1989). The categories were broad enough to permit natural themes from the respondents to emerge and to ensure that a clearly defined set of issues would be discussed as suggested in Patton (1990).

The content of the second interview guide was developed after analyses of the first interviews. This strategy, known as emerging grounded theory, allows the focus of the study to be guided by the themes that emerged from the data (Patton, 1990).

The questions for the second interview guide were developed from the results of interpretation of the transcribed data from the first interviews. These questions were designed so as to allow respondents to update and elaborate responses on any common topics that emerged.

Upon completion and preliminary analyses of the second set of face to face

interviews, however, it was clear that no new themes or issues were emerging. It was then considered that subject themes had been sufficiently saturated as described by Patton (1990). A third face to face interview was not considered necessary. Instead, content of the two face to face interviews was discussed with each participant by telephone serving as a method of triangulation. Triangulation offers the opportunity to check the sources of data and serves as a means of validation (Patton, 1990).

3.3.2. Observation

Since one interviewer was used throughout, it was possible to personally learn about all study participants' eating behaviours and the meanings attached to those behaviours. As with the in–depth interviews, the observation that took place was not highly structured, but rather more relaxed in nature. By observing participants within their own homes, it was possible to hear, see and further understand the reality that participants were experiencing.

Throughout the interviewing process any relevant behaviours, actions or gestures were noted. Any reflections and feelings were written down. All such observations were then included within each participant's personal file.

3.3.3. 24 Hour Recall

Following the completion of the first set of interviews it became readily apparent that all participants were not maintaining the severely restricted (10% energy from fat) diet that had been encouraged. Although is was not my initial intention to

look at whether or not respondents were maintaining their diets, I felt that it would be interesting to obtain a rough estimate of the fat percentage of their diets. It was during the second interview that participants were asked to provide a 24 hour recall in order to obtain a rough estimate of their fat content.

Although the 24 hour recall is a tool that is meant to be used as a means of obtaining population based dietary intakes and is not normally indicative of an individual's overall intake (Achterberg & Shepherd, 1992), it is sufficient to provide a baseline estimate of a what percentage of fat participants were ingesting. A 24 hour recall was obtained from each participant in place of the more traditional individual assessment tools such as the three day food records. This one day recall was used to avoid the bias which could occur if subjects knew their intake was being measured.

The recall was completed with all participants, in their homes, following the completion of the second face to face interview. The recall was administered after completing the interview in order not to have participants focus on their actual maintenance of their diets rather than their perceptions of their experiences.

The intake lists from all respondents were analyzed using the NUTS Nutritional Assessment System computer program (Quilchena Consulting, 1994) which provided an energy breakdown of percentage for carbohydrate, fat, protein and alcohol. Verbal consent for such analysis was obtained from all respondents.

3.3.4. Telephone Interviews

Upon analyses of the data from the second set of interviews, a summary of findings relating to each participant was assembled. Each participant's own summary was then mailed to their home for them to review. The third round of interviews were then conducted by telephone. This interview consisted of asking respondents if the summary of the first two interviews accurately described the experiences that they had discussed. This also presented an opportunity for any additional information to be discussed. Any applicable comments were noted, however conversations were not tape recorded.

3.3.5. Deviations

Throughout the two sets of individual face to face interviews with participants certain deviations took place. Initially each course participant with their spouse or significant other was to be interviewed separately, however, on three occasions interviews were conducted with two course participants. In each of these incidents participants had conversed with one another on their own. Upon discovering they were to be interviewed during the same day respondents proceeded to meet at a single dwelling for reasons of convenience. At this time the protocol was altered to take on the nature of a small focus group setting in which participants could discuss among themselves through semistructured conversation (Achterberg & Shepherd, 1992).

The first series of interviews was completed with fifteen participants. On one occasion in this first session two subject were interviewed together. The second series

of interviews were completed with thirteen of the original fifteen participants recruited. Two participants had dropped out of the study; one due to illness and the other due to a conflict with the time commitment due to unexpected travel plans. On two occasions during this session of interviews two subjects were interviewed together.

3.4. ANALYSES

Ideas for analysis occurred throughout the course of data collection. These ideas were written down and served in part as field notes. This is to say that there was no specific point distinguishing the end of data collection and the beginning of analysis.

Principles of content analysis (Patton, 1990) were applied in order to guide the identification, coding and categorization of primary patterns of data. The specific activities that were followed throughout this project were:

1. Content analysis began with the transcription of tapes. This organized the data so that each individual interview represented a case. Any memo noted as relevant following each interview was noted along with each case.
2. Multiple readings of the transcripts were enacted to determine any recurring regularities throughout the data. These regularities were next sorted into general categories. Categories included communications from all participants using cross case analysis (Patton, 1991). The general categories developed and articulated by the participants allowed for the content of themes to emerge through the cross case

analysis rather than being imposed prior to data collection and analysis.

3. Any notes about the general categories were then listed for each respondent's case analysis and specific areas that required greater elaboration were noted. This served as a guide to allow for a more in-depth discussion of relevant category areas and to encourage further feedback. The second interview guide was developed from these general categories and differed slightly with each respondent depending upon the specific areas of influence.

4. Following the transcription, case analysis and cross case analysis of the second interviews, a summary of what each individual had described was typed and mailed to each prospective respondent. After a three to four week time period each respondent was contacted by telephone to confirm and discuss the summary sheet. This step acted as a method of triangulation, ensuring that the interpretation was a true portrayal of how each respondent had perceived the experience, and serving as a means of validation.

5. Throughout the analysis process, modifications to the category system were made when new features were discovered. Each theme content went through a number of changes in conceptualization. This modification process always involved comparisons between new information and previously coded transcripts.

6. Following the completion of all interviews and the transcriptions of tapes into both case and cross case analysis, each theme content was then reorganized while keeping the original research questions in mind to determine:

a) What are the experiences associated with following a very low fat cardiac diet in social situations?

b) What ways have family and friends influenced the ability to follow a very low fat cardiac diet?

c) How has the cost of food influenced the ability to follow a very low fat cardiac diet?

d) Has the accessibility to food influenced the ability to follow a very low fat cardiac diet? and

e) Has the amount and type of effort involved influenced the ability to follow a very low fat cardiac diet?

7. The themes and their subsequent contents were then organized into a model. The model and hypothesis explaining it was checked back with the interview transcripts in search of any cases that did not fit. This strategy allows for any additional modifications to the model to be made to ensure that all cases fit.

8. Drafts of the results were written. These drafts led to another review of the transcripts and drawing out any specific information relating to the components of the model.

3.5. REFLECTION OF METHODS

The strength of an in-depth qualitative study that explores and describes a group's experiences' is with its validity (Marshall & Rossman, 1989). Validity is the extent to which a study measures what it is supposed to measure. "An in-depth description showing the complexities of variables and interactions will be so embedded with data derived from the setting that it cannot help but be valid." (Marshall & Rossman, pg. 145, 1989).

In order to increase the validity and reliability of this study, besides simply employing a qualitative approach, certain additional measures were also taken. Firstly, by tape recording all interviews, I had the opportunity to discuss interview transcripts with other members of the thesis committee. This in turn enhances the potential for reliability and validity in data analysis (Achterberg & Shepherd, 1992).

Secondly, both interview guides were pilot tested with participants of the Dalhousie Cardiac Rehabilitation Program. In all incidences the questions did elicit coherent answers and the respondents indicated they felt the questions were clear and unambiguous. Responses from participants throughout the research process indicated the integrity of the questions and further supported the content validity of the interview guides.

When reflecting on the research methods employed for this research, one of the most obvious points that comes to mind is that generalizations cannot be made from this specific data set to the larger population. It is often difficult to compare qualitative studies because they are so context bound (Achterberg & Shepherd, 1992).

When reflecting on my population group I realize that even though I purposefully chose individuals with a range of characteristics, in general the group was fairly homogeneous, primarily because respondents who had completed a risk reduction course were fairly homogenous. However, by taking care to provide an extensive description of the methods and results, I have provided a sufficiently detailed case description to allow others to assess the extent to which the findings are transferable to other cases (Marshall & Rossmann, 1989).

As well, data quality is dependent entirely on the quality and training of researcher (Marshall & Rossman, 1989). The fact that this was my first attempt at being the sole researcher, must be taken into consideration. However, I attempted to minimize these effects through regular discussions with experienced qualitative researchers. My own experience gained throughout the interviewing process also contributed towards a greater ability to elicit further discussions of key issues and to adapt to participants' personal conversational habits with each subsequent interview.

The opportunity to complete more than one interview with each participant also contributed toward the increased depth and illumination of theme areas. As participants became more familiar with myself and the interviewing process a more relaxed and comfortable atmosphere was able to be achieved. This relaxed atmosphere contributed towards participants' increased willingness to discuss difficulties that they were experiencing.

Reflecting upon the data collection methods, I feel that through the use of a variety of descriptive methods, ie. personal face to face interviews and observation,

access to multiple sources of data was achieved. More than one data gathering technique can greatly strengthen the study's usefulness for other settings (Marshall & Rossman, 1989).

When reviewing the research process, I believe that it was extremely helpful that I personally listened and transcribed the interview tapes myself. This step, although very time consuming, allowed me to review the mood and tone of voice and was crucial in getting familiarized with the data. This also allowed me to combine my own personal notes about each interview throughout the interview transcripts and keep the data organized into appropriate cases.

CHAPTER IV: RESULTS AND DISCUSSION I: PERSONAL BARRIERS

4.1. INTRODUCTION

The sample of respondents for this study was comprised of eight females and seven males with ages ranging from 45 to 76 years of age. Eight participants lived in households with one other adult, two participants lived alone while five participants lived in households with one other adult and children. Four participants were retired, four were currently working full-time while seven participants were full time homemakers. Only one was retired due to his cardiac disability.

All participants except one had already experienced some form of cardiac event, ranging in severity from stable angina to operable by-passes. The one individual who had not experienced a cardiac event had been diagnosed with hypercholesterolemia.

Although the intent was to discuss the specific social barriers participants experienced since completing the Extended Warranty II education course, it soon became evident that respondents were having difficulty distinguishing between internal (factors within their direct control) and external (beyond individual control) factors.

Data analysis revealed that in order to develop a complete understanding of participants' experiences it was necessary to explore those factors participants perceived to be internal, or within their direct control. These factors are termed "personal barriers".

When asked to speak about their experiences, respondents focused their

conversations around the internal factors affecting their diet maintenance. Although I was somewhat concerned that respondents were not initially relaying information pertaining to the external factors they had experienced, I soon realized that the information they were sharing was in fact an integral part of their diet maintenance experience. As well, once I reviewed the content of the Extended Warranty II course, I also realized that participants had been exposed to a familiar risk reduction program that concentrated heavily upon the individual's responsibility for and ability to make lifestyle behaviour change. It would therefore stand to reason that when discussing the maintenance of their diets, respondents would initially reveal experiences within their direct control. Figure 4.1. summarizes the main themes included within the personal barriers segment.

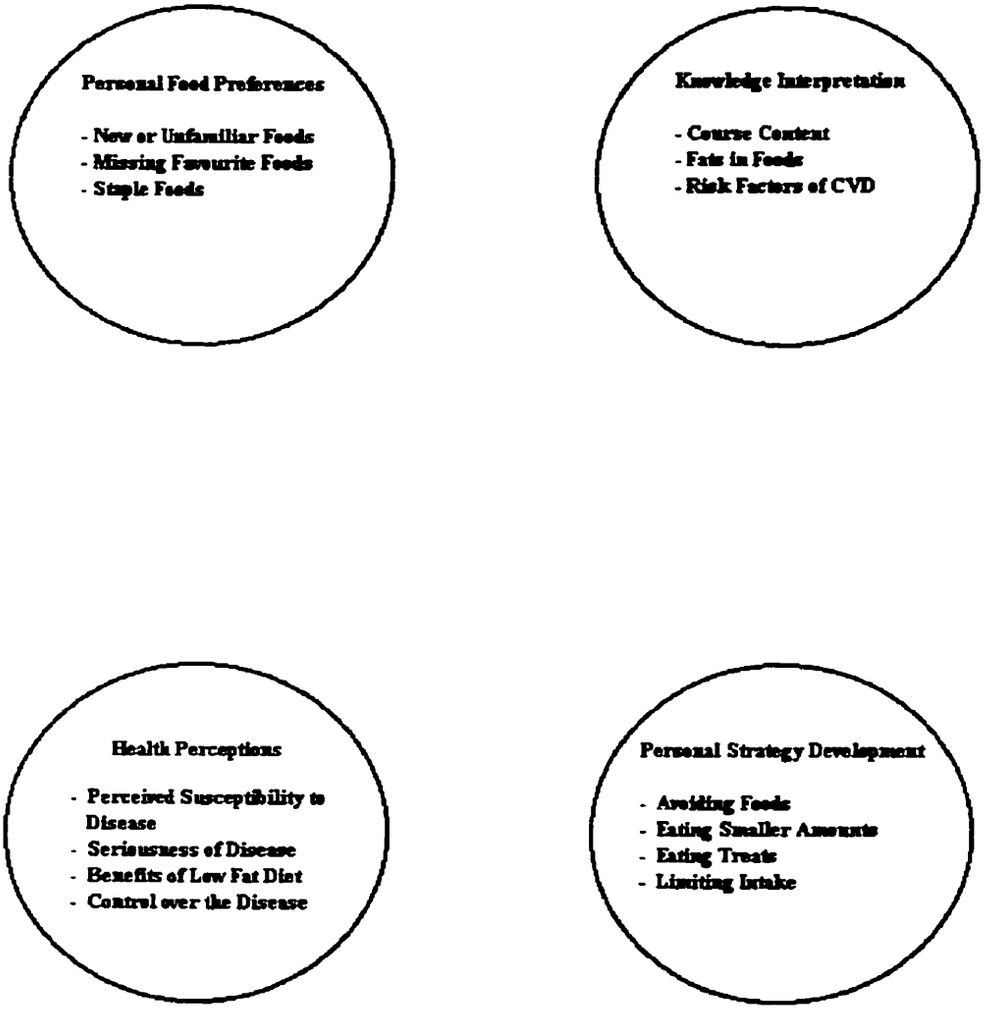

Figure 4.1. Main themes and categories discussed within the "Personal Barriers" section towards long term diet maintenance.

4.2. PERSONAL FOOD PREFERENCES

This theme focuses on the impact of respondents' personal food preferences on long term dietary maintenance. Respondents' food preferences consisted of those that had been developed prior to the course as well as new tastes more recently acquired. Three categories that emerged within this theme were:

1) New or Unfamiliar Foods
2) Missing Favourite Foods
3) Staple Foods

Respondents were very descriptive when relaying information about their preferences or dislike towards particular foods. It was clearly evident that personal taste preferences plays a major role in an individual's ability to maintain a specific dietary regimen.

4.2.1. New or Unfamiliar Foods

Each week throughout the Extended Warranty II course, all respondents participated in a cooking and tasting component of the program. Throughout these sessions respondents were introduced to a variety of new or unfamiliar foods. Although all respondents expressed that they had taste sampled a variety of new foods, differences existed in the degree of adventure respondents were willing to take both during and following the course. For several individuals, the trying of new foods was fairly limited and primarily took place during the course. Other respondents however, were very adventurous and eating new or unfamiliar foods was something they

enjoyed and was something they continued to partake with on a fairly consistent basis.

Some individuals expressed how they were not automatically able to adopt new foods into their diet plan without having to try the food a number of times and develop a taste for it. The number of times that such a food item had to be tried was clearly dependent upon the individual's own taste preference and general attitude towards the food. This is demonstrated by BA's comments:

> "Some of the things we learnt to eat on that diet course, ... they were good for you, but a lot of, or some of them at least, I would have to get use to. You know some of these foods you do have to get use to." (BA, Interview 1).

Other respondents also expressed how even after trying a new food item and deciding that they did not like it, they may still continue to consume the food. Two examples of this approach are evident through the following comments:

> "Like there is a Mexican rice dish with kidney beans, well I don't like kidney beans, but I eat them because I know I have to." (CB, Interview 1).
>
> and
>
> "Uh there are a few things I don't like though, tofu, like I'm sorry but I don't find tofu – well I think it is some marketing ploy to make people want it. I eat it once in a while, but I don't care what you do with it, it is not very good." (KJ, Interview 1).

As well two additional comments made by TR reveal the difficulties he has been having due to his dislike for certain new foods. Each comment reflects his dissatisfaction with foods; the first indicating that he still consumes those foods:

> "No I think I have resigned myself to the fact that this is the way I have to eat, even though I may not like it." (TR, Interview 1).

and the second comment reflecting how he has tried new foods but has not incorporated such items into his diet:

> "... like the tofu, I can't understand that stuff. To me that material that they do impressions with to take on your teeth, that and tofu – very similar. Oh you chew that and it is just like chewing an inner tube." (TR, Interview 1).

When respondents were asked to explain the reason for continuing to eat foods they did not particularly care for, they most often discussed the perceptions they maintained towards health. In general this means that they felt that the food was good for them so they would eat it. As well, these foods were all items that they had been exposed to through the course. The dimensions of respondents perceptions to health is addressed further in Section 4.3.3. Benefits of low fat diet in preventing cardiovascular complications.

4.2.2. Missing Favourite Foods

Many respondents spoke of experiencing difficulties maintaining their diet due to the fact that they were missing certain foods. Most often these were what respondents classified as their "favourite" foods. Missing these food items made it difficult to comply as respondents felt they were being denied something as well as feeling that they would not have the willpower to continue eliminating such items for a long term period. This was the case for HG who had just recently finished the education course and was having difficulty living with the new food restrictions of his diet.

> "Well just staying on the diet, it is some tempting when you are going somewhere and there will be a pie sitting there, and I love pie, and you know to just have to say no. And like I go to my parents quite a bit and they're sitting there having pie and ice cream or this and that and it is very hard to say no." (HG, Interview 1).

Experiencing difficulties missing certain foods was something that most respondents expressed. This was not strictly dependent upon when a respondent had finished the course. Respondents who had completed the Extended Warranty II course some time ago were also experiencing difficulties missing certain foods but had more time to develop personal strategies in order to deal with such temptations. This is represented in CB's comment:

"Well now nuts and peanuts I do have problems with, but I just try not to have them. If I have one I can't stop, yes that's my best bet. My husband will say as he goes out to get something 'Do you want anything", and I'll say 'Yeh I want everything, but I can't have it'" (CB, Interview 1).

4.2.3. Changing Staple Foods

The most common comment respondents made when speaking about their personal food preferences dealt with how they had changed the main staple foods of their diets. All respondents had been advised to follow a 10% energy from fat diet. In order to decrease the fat content to this low level the diet must include a variety of beans, lentils and vegetable products as well as alternate sources of protein.

Discussions with respondents indicated that no one was following a total vegetarian diet (elimination of all meat, fish, poultry). All respondents did however, feel that they had made many changes regarding the staple foods in the diet. The main changes that were consistently mentioned were:

1) eating less red meat
2) eating fish and poultry more often
3) eating more beans and lentils
4) vegetables becoming a dominant food item at meals

Respondents did vary with the amounts of animal protein they consumed. Several respondents ate animal protein very sparingly and would have several meals or days that they would classify themselves as vegetarian. Others, however, felt that the

long term maintenance of their own diet plan was more feasible by cutting back on the amounts and types of animal protein that they ate. The following comment by DB shows how she has tried to do all of the above:

> "Like my main thing was like I was always a big meat eater and I would have meat two or three times a day. Well I don't anymore, I've cut that down and my portions are a lot smaller, and I have chicken once a week or I try to, and I try to have fish once a week, and I usually have a meal with no meat." (CB, Interview 2).

As well, a common topic that respondents often discussed dealing with the staple foods in their diet was how they felt they could never maintain a total vegetarian diet. IG's response to whether or not he was maintaining a vegetarian diet was:

> "No I have meat. Yeh I'm not interested in that (vegetarian diet), but I eat white meat and chicken and we buy really lean hamburger, never any fat that we can see in it." (HG, Interview 1).

4.3. KNOWLEDGE INTERPRETATION

The second major theme revealed from the data focuses on the individual's knowledge base and how they perceived this knowledge as an integral part of their rehabilitation process.

4.3.1. Course Content

The knowledge that respondents shared mainly concentrated on information covered through the Extended Warranty II course.

There was a general consensus from all respondents that a tremendous amount of information had been provided through the course. There were several respondents, however, who commented that they were surprised at how much they learnt, even though they felt they possessed a strong knowledge base prior to the course. For example:

> "Yes, yes and the whole program was a big eye opener for me and I learnt a whole lot. I'm a biologist and I thought, 'oh well, I know most of this stuff', yet there was an awful lot I didn't know." (QP, Interview 1).

As well, the attainment of knowledge did not stop following the end of the course. Many respondents continually sought a variety of new sources of information, such as books, magazines, the internet, food labels, dietitians, family and friends.

All respondents placed a great deal of emphasis on their learning experiences about CVD and risk factor reduction. There was a consensus voiced that without this knowledge, maintenance of their diet plans would not be possible. The respondents' knowledge is therefore not considered a barrier towards maintenance but rather an enabling factor.

The main categories of knowledge that respondents discussed were:

1) fats in food

2) the risk factors of CVD

4.3.2. Fats in Food

Overall the most common comments respondents made demonstrating their knowledge was in reference to fats in food. Differences existed however, in the degree to which individuals concentrated on knowing:

i) the grams of fat in certain foods

ii) the percentage of calories coming from fat within their diets and

iii) the types of fats.

All respondents indicated that they consumed a variety of low-fat or fat-free food items on a daily basis. These food items were consumed in order to keep their fat levels low and to add variety to their diets. There were, however, differences in how discerning respondents where towards knowing the grams of fat in certain foods.

Several respondents expressed how the grams of fat in certain foods determined

whether or not they would consume it. The following comment made by HG shows how once he had identified the grams of fat in a food as excessive, he no longer consumed it.

> "Like a lot of times if I am coming home for lunch or I am away and coming home for lunch I will stop at Wendy's and grab a salad and I have a fat-free dressing that I put on it, and I never realized before that one of those packages of regular dressing has 25 grams of fat because I was eating it for a while and I remember one day I looked at it and, 'holy smokes, I can't do this anymore, my limit is to be 15-20 grams a day'" (HG, Interview 1).

Identifying the grams of fat in foods also influenced the consumption of certain food items as indicated by DB's comment below.

> "...like these cappuccinos, someone said to me 'You shouldn't be drinking those' and I said 'Why, there is only 1.5 grams of fat in one and that's better for me then just about anything else I could have really'" (CB, Interview 1).

4.3.3. Risk Factors of CVD

The importance of maintaining a low fat diet along with exercise was consistently mentioned by all respondents throughout the interviews. This was not a surprise as these were the two main components of the Extended Warranty II program.

Respondents differed however, in the degree to which they maintained their exercise as well as whether they experienced other risk factors for CVD.

Maintaining an exercise program was difficult. Constraints such as time, lack of nearby facilities, cost of programs, and uncooperative weather conditions were all discussed. Since this was not the intent of this study, such topics were not explored any further although further research in this area is warranted.

When speaking about changing habits and maintaining these changes long term, only two respondents made continual references to the effects that smoking had on the further progression of CVD. Both individuals expressed a belief that being a nonsmoker was a main contributing factor towards their rehabilitation and feelings of good health. These individuals also felt that not smoking along with a regular exercise program was overall as important to their health as was maintaining the low fat diet. As well, these respondents also indicated that they were smokers prior to their first cardiac event and had since quit.

These comments suggest that individuals are more apt to emphasize the beneficial effect of preventative behaviours that are relevant within their own lifestyle. All respondents emphasized the benefits of those behaviours that they were currently practising or those that they felt they could practice.

4.4. HEALTH PERCEPTIONS

Respondents varied in health status due to the type of cardiac event that they experienced, the presence of any additional health problems and how they personally

perceived their own health. The concept of perceptions revolves around the individual's beliefs about their health (Rosenstock, 1990).

The perceptions that respondents held influenced the preventative health behaviours (ie. maintaining their diet) they performed. The beliefs respondents expressed can be best portrayed by referring to several of the main components from The Health Belief Model (Rosenstock, 1990). These are:

1) perceived susceptibility to disease
2) seriousness of disease
3) benefits of preventive action (maintaining low fat diet)
4) control over the disease

4.4.1. Perceived Susceptibility

When discussing barriers to maintaining dietary restrictions many respondents spoke of how they perceived their own susceptibility to CVD. This was most earnestly expressed by respondents who had other family members also experiencing some form of CVD. Due to the strong family history of this disease, respondents felt that they were more motivated to take preventive actions and the genetic component served as a strong motivation towards the maintenance of their diet. For example:

> "Now I have a brother who lives here, he has had two heart attacks and several angina attacks, it just runs, this was my mother's side of the family and all people in that side of the family have heart problems it seems. But uh, knowing the history I think it makes you a little more cautious." (NM,

Interview 2).

4.4.2. Seriousness of the Disease

Several respondents who had experienced major cardiac events also expressed views relating to the seriousness of CVD. The views of seriousness were expressed by respondents to varying degrees. This can be seen as a continuum expanding from those that had a minor cardiac event and were feeling very well (expressing a lower level of seriousness) to individuals who had major surgery or were not feeling as well (expressing a much higher level of seriousness).

Following are two examples: one respondent expressing a low level of seriousness and stating that he was feeling quite well while another respondent expresses a very high level of seriousness after going through major surgery and associating the maintenance of her diet as a matter of life or death.

> "I'm not always being strictly, strictly, sticking to diet you know, sometimes I go off the trolley and uh eat some things I shouldn't be eating, but so far everything seem to be O.K., but I just feel great. Well I have since my last problem in 92' when I had the balloon thing done and since then I haven't had any pains or anything. So you know I am very fortunate. (Interview #1, BA).

> "Well I know one thing that if I get really, really tempted at something all I have to do is think life or death to myself, you know, because like the doctor

told me if I don't eat right I could end up needing another by-pass because I was so young having this first one, there is a good chance that I would need another one. So you go through something like that you don't put yourself purposely into a situation where you could have another one." (CB, Interview 1).

4.4.3. Benefits of A Low Fat Diet in Preventing CVD Complications.

All respondents expressed the health benefits of maintaining a low fat diet, and personally felt that they had been successful in decreasing the fat content of their diets since the completion of the course. The results from the 24 hour recalls reinforce the notion that the majority of participants perceived benefits of a low fat diet in preventing CVD complications.

Thirteen participants were able to complete the second interviews and provide the necessary intake information. Although there was only one participant from this group that was recorded as having a level of 10% energy from fat, six of the thirteen respondents had intakes between 10-20% energy from fat. Two respondents had intakes between 20-30% energy from fat, and five had intakes over 30% energy from fat. The highest percentages of fat for three of these individuals were 38-40% energy from fat. These respondents did however, express that they had eaten very unusual the day before and this was not a true representation of their regular intakes which were generally much lower.

The results of the majority of these respondents, although not at the severe level of 10% energy from fat, were below 30% energy from fat. These levels meet the recommendation set out for the general Canadian population and may be preventive in slowing the progression of atherosclerosis. However, these levels of energy from fat are not considered low enough to see regression of the disease.

These findings may indicate that although there have been changes in the percentage of energy from fat in all participants diets, the majority of participants do not perceive the benefits of a 10% energy from fat diet as convincingly as what was stressed throughout the Extended Warranty II course. Respondents' statements indicate that the reasons for not perceiving the benefits to the extent that they were educated towards could be due to the difficulties in changing their eating habits and the overall weighing of consequences .

The following comment illustrates how lowering one's energy from fat to 10% of total calories can be very difficult. KJ expresses this difficulty while speaking of how after a period of time he made some compromises to his energy from fat intake.

> " Yeh, like 10% is real tough to get to, 10% is vegetarian basically. I was around 10% at first but realistically I'm probably around 15%. Like even if you eat fish or chicken it goes up." (KJ, Interview 2).

Several other respondents also expressed how the monitoring of the benefits of maintaining a 10% energy from fat diet was something they did on a continual basis.

BA's comment illustrates how he considers his blood cholesterol levels as a suitable indicator of the percentage level of energy from fat he should be ingesting.

> " I could get my fat down quite a bit more, but I would have to, I would eat foods I am not use to. I should be able to do that but if my cholesterol wouldn't come down I would do that, and if my cholesterol was going up I would certainly do that." (BA, Interview 2).

These findings indicate that the benefits that participants perceive have a strong influence towards their diet maintenance. As well, when people are going to attempt to change their eating habits they need to strongly believe that the changes they are making outweigh the difficulties. Only then can they begin to try and maintain their new habits long term.

4.4.4. Control Over the Disease

When expressing their experiences with CVD, many respondents related information that dealt with who they perceived had control over the disease. Participants spoke about three common gatekeepers of control:

i) the individual possessed the control

ii) the caregiver (physician) possessed the control

iii) there was no control

Respondents who expressed their own individual control over the disease were

commonly the participants who were in better health relative to other participants. As well, individuals who spoke about feeling better upon making certain changes in their lifestyle were more likely to believe in their own control over their health.

In these cases it was common for respondents to believe that once they had gathered the appropriate information on how to lead a healthier lifestyle they were sufficiently prepared to make the required changes. These views however, were expressed by respondents who had most recently finished the Extended Warranty II course within the last year. This view is clearly represented in the following comment made by EC:

> "You know people don't offer this often because they don't feel that people will change their lifestyle. I don't think that's right. I think if you make a commitment like I want to be around to watch my grandchildren grow up, and uh I didn't spend this much time to continue living a lifestyle that was going to speed up the clogging of my arteries." (DC, Interview 1).

Several other respondents spoke of the need to have someone else at least aware of their situation or involved with the actual monitoring of the problem. The caregiver in these situations was most commonly a spouse, relative, close friend or personal physician. This is clearly evident in RP's comment as he speaks about the need to have a personal physician monitoring his progress.

" Oh yes, well I tend to be quite a stubborn wilful type of man in some way and I like somebody who points out and calls a spade a spade and I don't want anyone wishywashy or I would fall by the wayside." (QP, Interview 2).

There were also several respondents who when speaking about control over the disease would make references to fate. This is not to imply that these individuals had given up on the situation and were not maintaining any changes to their lifestyle. It is evident however, through respondents comments that several participants had resigned themselves to the idea that they had CVD and would continue to live with the disease the best way they knew how.

" well I don't feel any different then when you were here before, like what will be will be so what can you do, all you can do is sit back and moan and groan but that won't do any good either." (NM, Interview 1).

4.5. PERSONAL STRATEGY DEVELOPMENT

All respondents discussed different strategies that they had developed in order to better maintain their low fat diets. These were ways in which they personally handled a variety of situations and frequently a combination of strategies would be used. Four different strategies that respondents spoke about were:

1) Avoiding Foods

2) Eating Smaller Amounts

3) Eating Treats

4) Limiting Intake Before or After a High Fat Consumption

4.5.1. Avoiding Foods

Several respondents felt that the easiest and most effective way to maintain their low fat diet was to totally avoid certain foods. This was most common with foods that individuals could positively identify as being high in fat. The most common foods mentioned were deep fried and dessert items.

> " I am so obsessed with the idea of cutting out fat, like I love peanuts and I love nuts and I don't eat any of them, I don't eat peanut butter either." (DC, Interview 1).
>
> and
>
> " I have been to a potluck through the Lion's club though, and although it may look very delicious the food, well even though the pies look delicious, I have forgone." (TR, Interview 1).

4.5.2. Eating Smaller Amounts

Eating smaller portions of foods was by far the most common strategy that respondents spoke about applying. This varied with the types of foods offered, from foods that individuals felt were high in fat to foods that they really were not sure

about. All respondents who utilized this strategy also expressed that it was the overall diet that was important and by just taking a small amount of food they felt they were still maintaining their diet.

" I will just take a small portion, yes that's about the only way when I have no control over what the food is." (GF, Interview 1)

and

" Well you keep in mind that I shouldn't be eating this rich food and therefore I'll try it but I won't eat too much of it." (BA, Interview 2).

4.5.3. Eating Treats

There were two common instances when respondents would refer to food items as a treat. These were when being served foods that respondents felt they did not have direct control over, or when in a situation that would be classified as a special occasion. In these instances respondents did not limit the amount of the food eaten but rather allowed it as a once in a while condition.

NM describes how she has dealt with not being able to eat lobster on a regular occurrence in such a way as to not feel deprived.

" Now scallops are too rich for heart condition, but I did tell the doctor that I like to have lobster once a year as a treat and I am not measuring." (NM, Interview 2).

4.5.4. Altering Amounts Prior of After

When respondents were placed in a situation where they would classify a food item as a treat, or knowingly eat a high fat meal, the strategy most often employed was to alter the amount and types of foods that they consumed. This strategy was used both before and after consuming high fat food (s) in order to compensate and better maintain their diet.

The most common way in which to do this was to cut back on amounts of food the day before and/or after or by trying to maintain a vegetarian diet (no meat products) for a couple of days throughout the week.

> " I guess probably I would go and take what was offered, most of it probably, or a part of it, or some of it at least, and if then in my mind I was overindulging in foods I shouldn't be eating I would compensate for it the next day or the next day, and the next day. I think that's the way to do it." (BA, Interview 2).

These barriers are those that participants initially identified and elaborated on when beginning the interview sessions. These were barriers that each participant had experienced in some way. These are not, however, the only personal barriers that all people will come up against when trying to maintain their diet. The barriers discussed are those that this group of participants personally identified. When considering these personal barriers we must not forget that this group of participants

had all attended an eight week education course which would influence their experiences.

As well, these are not the only barriers that participants experienced. Through further conversation participants also identified social barriers, or barriers in which they felt they had little or not control over. These were barriers that participants identified within their own environment.

CHAPTER V: RESULTS AND DISCUSSION II: SOCIAL BARRIERS

Analysis revealed that although all participants initially spoke of those factors over which they perceived individual control, they all expressed external or social barriers to the maintenance of their low fat diets. Although the questions that were used to guide this research established the general themes, the content within each theme arose from participants' experiences and what they felt affected their diet maintenance. The themes describe the factors that respondents do not have direct individual control over as well as those that influence their diet maintenance. Each theme consists of several categories which describe the diversity between respondents as well as the relevant strategies employed. Figure 5.1 summarizes the main themes included within the social barriers segment.

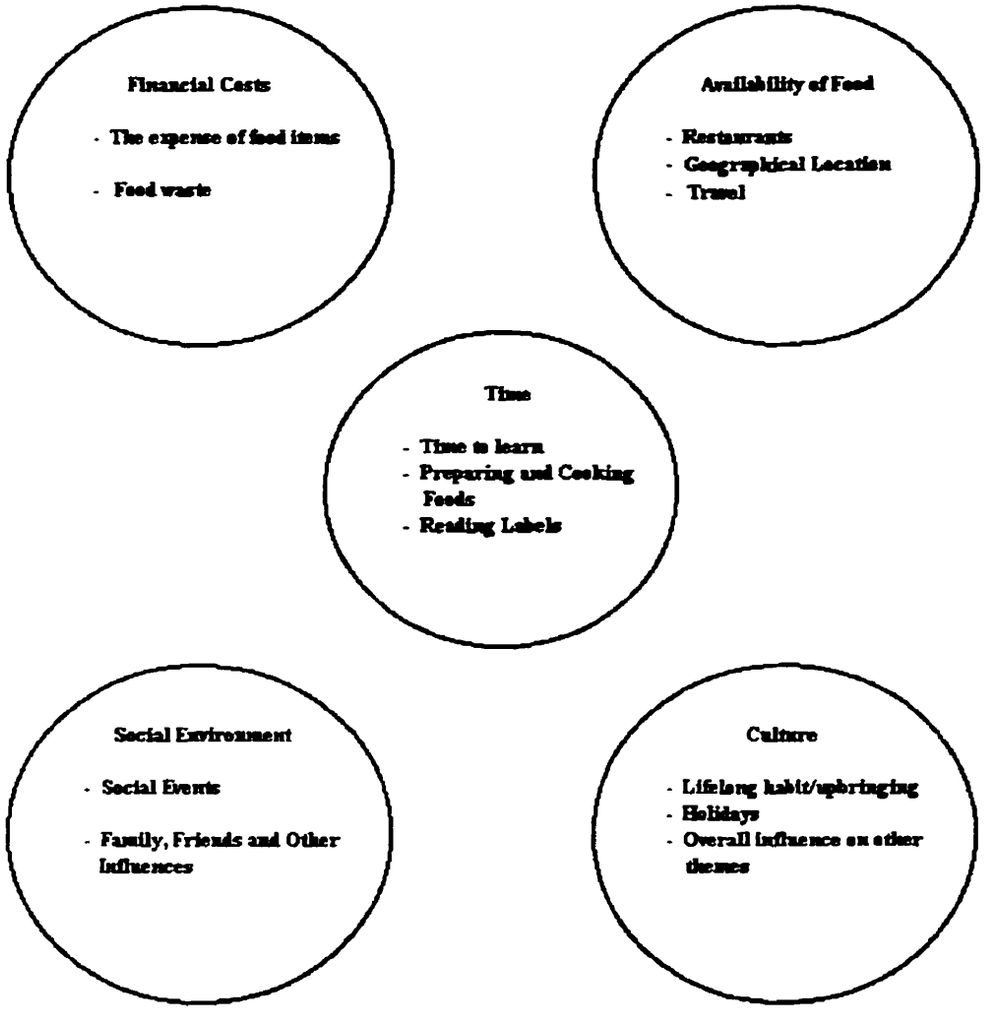

Figure 5.1. Main themes and categories discussed within the "Social Barriers" section towards long term diet maintenance.

5.1. FINANCIAL COSTS

The theme of financial costs incorporates two main categories:

1) the expense of food items, and

2) food waste

The costs and waste of foods are external factors that respondents identified as influencing their diet maintenance. Cost was a factor that all respondents felt they had very little control over. Different views and strategies were expressed by all respondents and are explored within each category.

5.1.1. The Expense of Food Items

When discussing the cost of maintaining a low fat diet there was a consensus by all respondents about the cost of two things:

i) fresh produce being very expensive during certain seasons

ii) low fat food items being more expensive than "regular"

When faced with buying fresh produce and/or low fat items respondents used a variety of approaches in order to deal with the cost. Such approaches include either simply forgoing the food item and waiting until the food goes on special, finding a cheaper but suitable substitute, or paying the advertised price.

Along with the cost of the above mentioned food items, there were a variety of opinions expressed relating to whether or not their monthly food bill had changed. A few respondents felt that there had been a decrease in their monthly grocery bills. Although none of these respondents kept an exact record of these costs, they believed

that by buying more dried beans, lentils and legumes as an alternative to meat products they were spending less on food each month.

> " We find it cheaper than before, than actually buying all that meat, the beans and things are much cheaper then the meat." (SR, Interview 1).

Some respondents also thought that the high cost of fresh produce was offset due to the fact that they were no longer buying the same quantities of meat products. Overall, however, the majority of respondents felt that in general it was more expensive to maintain their low fat diet.

Those respondents who were living on a fixed income found the cost of food to be much more of a barrier then those who were more financially independent. The difficulties respondents were having are represented through NM's comment of how she had to be careful with how she budgeted her money.

> " Being by myself, I don't have money to throw around but I'm not paying astronomical prices for something that I don't think is worth it." (NM, Interview 1).

The following discussion with TR and his wife describes the difficulties they have experienced with the higher cost of food:

Wife – "and with the transition from working to retirement it has been tough to try and keep the costs down."

TR – "They don't seem to help out people who are diabetics or people with heart disease or anything like that, we tend to see that the foods that would be appropriate for that type of person is higher then it is for others... Yes anything lite is more expensive and when you are on a fixed income it is very difficult, produce is the same thing, it is difficult, very difficult, you really have to work and do a lot of substituting and look for specials and when things are on special try to, you know, stretch your budget a bit to get two or three of them when they are at a better price. So as well as being fat conscious you also have to be costs conscious as well."

There were also a few respondents who, although they realized the cost of certain food items were much more expensive, felt these foods were an important factor in maintaining their diet and would therefore pay whatever the asking price. This led to monthly grocery bills being higher then what they spent prior to their low fat diet.

Those individuals who were buying specific food items to maintain their diet as well as different items in order to appeal to a number of different preferences within the household, also expressed that their food bills were more expensive.

In addition to the costs incurred from buying food items, a few respondents had to buy new kitchen appliances such as a blender,a pressure cooker, and a number of

new recipe books. The cost of these items, however, were not seen as a barrier as these were not things that respondents had to buy on a continual basis.

5.1.2. Food Waste

When discussing the cost of food, respondents also made reference to the additional cost of food that is not eaten and goes to waste. This was identified as a barrier as respondents did not like paying for food items that would end up in the garbage. Several respondents indicated that they were not buying as much produce and low fat dairy items as they had in the beginning because they were tired of throwing food away. This in itself was seen as making the maintenance of their diets more difficult because they did not always have convenient low fat snacks readily available.

Food wastage was particularity difficult for those respondents who were living on their own or with those who were eating different foods then the other members of the household. This made maintenance of their diets more difficult due to the unavailability of appropriate and convenient food items.

Although freezing the leftover portions was commonly identified as an acceptable alternative, many respondents found that the food would go to waste in the refrigerator before they were ready to cook with it.

5.2. AVAILABILITY OF FOOD

The lack of availability of specific food items was perceived as a barrier to maintaining a low fat diet. This varied depending upon the individual and the precise situation. Respondents spoke about three main availability categories:

1) Restaurants

2) Geographical Location

3) Travel

5.2.1. RESTAURANTS

The restaurant category was the most commonly discussed barrier towards maintenance within the availability theme. The experiences of respondents varied depending upon a number of criteria. These criteria were:

i) the type of restaurant at which respondents chose to eat (mainly service style and price)

ii) whether respondents would make special request for food items and,

iii) multiple nutrient concerns

i) Type of Restaurant:

There was a general consensus from respondents that fast food restaurants presented the most difficulty towards long term maintenance. The lack of low fat food choices was the main determinant of this barrier. Two respondents whose employment involved extensive travelling by road vehicle found this lack of suitable food choices

to be particularly difficult. This was further perceived as being a barrier due to the vast number of fast food restaurants present on major highways. For example:

> " Like I used to eat a lot in restaurants because I travel a lot, and that is when I see just horrible foods, and Nova Scotia and New Brunswick aren't bad, you go into Quebec and Ontario from the #20 or #401, its all junk food, its all McDonald's and Harvey's and Kentucky Fried and that stuff." (KJ, Interview #1)

Pub or tavern style restaurants were also identified as posing more difficultly maintaining a low fat diet. Once again this was primarily due to the limited food choices made available to customers. This is clearly evident in QP's comment:

> " Oh yeh, there has been various occasions where there has been a lot of traditional finger foods around or high fat items or processed meats. Like when we go down to the pub in Kentville, that is always hard, well the mainstay in those places is just fried food." (QP, Interview 1).

Respondents relied on two strategies when eating at fast food restaurants. The most common strategy used was to not eat. By avoiding all food items and ordering a suitable beverage, respondents were assured they would maintain their diet. Several other respondents felt that by simply limiting the amounts of food eaten they could

best maintain their diet.

A restaurant offering a buffet style meal was considered to be the least difficult for most respondents because of the large variety of food choices available. Respondents did, however, differ in the degree of concern they expressed towards the ability to adequately identify low fat food items from the buffet choices.

> " Yes it is easier because I can choose, I can stay away from things that I know are going to distress me, and I could see the fat floating, so I just stay away. But there is always something, rice, you can eat any amount of rice, and I don't know about the sauce they have there, but I put that on my rice to spruce it up a bit. Maybe it has fat in it I don't know." (RP, Interview 2).

ii) Special requests:

Respondents expressed several difficulties when making special requests for foods at restaurants. The first difficulty deals specifically with the type of restaurant. It was common for respondents to express difficulties requesting special orders at fast food and/or family style restaurants. This was primarily due to the type of service available and a general feeling that the servers would not know exactly what was being requested. The following comment by KJ demonstrates his views:

> " Not the cheap ones, they don't even know what you are talking about. You order mash potatoes with no butter or gravy and they come with gravy and

they say 'Oh well I thought you would like something on it, you know it tastes awful bad if you just want it like that'. But the decent restaurants, you can tell them what you want, low fat, or you don't want margarine, usually they can accommodate you pretty good." (KJ, Interview 1).

Other difficulties were expressed by some respondents due to their uneasiness with making special requests. ED explains such a situation:

" That is totally ridiculous, if I could hit one area and say, 'God there has to be something better', and I've seen descriptions of what people do in these cases. They go in and ask for a lettuce or a salad but no dressing. I just can't do that. Most restaurants will carry one lite dressing and it is usually Italian, but take an everyday restaurant and I guess I would have the turkey sandwich 'please no butter, no mayonnaise, unless you have a low fat mayonnaise, white meat only, no salt', and by that time the waitress is ready to stab you with a fork, so its easier to avoid that." (ED, Interview 1).

ED also expressed an alternate view from most respondents when speaking of eating at a higher price restaurant. Generally, most respondents felt more justified when making special requests for food if they were paying a higher price. As well, the higher priced restaurants were considered to be more capable of meeting their requests. ED, however, considered eating at a higher price restaurant as a special

occasion and therefore feels that you should not make special request but rather enjoy the meals the way they were originally intended.

> " and uh well there is a problem when you are in a big city like Montreal and those gorgeous restaurants they have and its just you can't go in and bastardize their menu like when its one of the main spots in Canada and they have la creme da something or other you just can't say can I have that without, because then why are you in there in the first place." (ED, Interview #2)

iii) Multiple nutritional concerns

Further difficulties were experienced in restaurants by those respondents who were not only watching the fat content of foods but also the sugar content, due to some form of diabetes. These extra restrictions added additional limitation towards available food choices. SR expresses just how difficult she perceives such a situation to be:

> "The biggest problem that I have is in a restaurant I find about the only thing I can have is diet pop because I also have to watch my sugar besides the fat,... so I find that there really is nothing you can eat in a restaurant." (SR, Interview 1).

Those respondents who ate out at restaurants often felt that they were better able to deal with each situation. This ability was from familiarizing themselves with appropriate items to order, and in some cases indicating that staff had an influence on the situation.

> "Yes, because that is usually where we get the salad, and she knows us and like I have a caesar salad and she doesn't put the caesar dressing on, she gives me the lite or a couple packages of the lite dressing, and uh she knows they always serve a roll with it and they usually give the roll with butter on it, so she grills mine without the butter on, just toasts it, and things like that she knows." (CB, Interview 1).

5.2.2. Geographical Location

The geographical location where respondents lived was a main factor in determining the availability of food items. Two distinctions within this category were revealed. Although both deal with the access to low fat food items, the first distinction deals with the size of community and how this relates to the size of food markets, while the second deals with the type of agricultural markets.

5.2.2.1. Size of Community/Food Market

The size of the community that respondents lived in was directly related to the size of food market that respondents had convenient access to. Generally speaking,

the smaller the community the smaller the food market. All study respondents resided within the Annapolis Valley area of Nova Scotia. Although there were differences with the size of town or village that respondents lived, no area is considered to be a large urban city.

The largest area distinction mentioned was in comparison to the United States. Several respondents felt that the large cities within the United States had a much greater variety of low fat food items available to consumers which in turn would make maintaining a low fat diet easier.

> " In fact my neighbour next door her husband came back from the states, he brought her back a bunch of non-fat stuff from the states that we can't get here, and she brought me over a couple of non-fat margarine, with nothing in them, like it only has five calories." (CB, Interview 2).

This was further described and elaborated upon by DC's wife's comment:

> " We were down to Virginia this summer and you can get fat-free fat down there - they have everything." (DC, Interview I)

Although several respondents acknowledged the size difference between the Annapolis Valley and Metro Halifax, they did not feel that it was any more difficult to find specific food items in the major centers of the valley. This was due to the fact

that the major center in the Annapolis Valley had recently built a very large supermarket that was considered comparable to any supermarket found within Metro. As well there is also a specialty health food store in one of the larger centers of the valley. Due to the accessibility to these stores all study participants had access to a variety of food items within 30 minutes that they may not otherwise find at a typical supermarket or typical rural environment.

There was however a distinction made between the smaller and larger centres within the Annapolis Valley. Generally, the smaller the place of residence the more difficult it was to find specific food items. This was most commonly due to the size of the local supermarket. Due to the fact that all respondents lived within 30 minutes of the largest center it was common for respondents of smaller villages to drive to this larger center to grocery shop.

The difficulty that respondents experienced, although more common in the smaller supermarket chains, was also experienced in the larger supermarket chains. ED expresses the problems he was experiencing, which could be typical of anybody living within Nova Scotia.

> " ... the second problem is getting the stuff, I mean look at the recipes here, you can almost pick out any of them, they don't carry lentils down at this grocery store. I would have trouble with that one. Try this one on – 1/2 cup of aduki beans. Where on earth have you heard of that, or 5 1/2 ounces of buckwheat japanese noodles. That is the difficultly because most of those

recipes have things that I don't know where on earth you would get them." (ED, Interview 1).

When unable to find desired food items it was common that individuals either changed their menu plans to accommodate foods that were more accessible, or visited a number of different stores in search for the desired food item. This was again influenced by the close proximity of shopping areas within towns.

An additional factor that was viewed as an inconvenience was the sizing of food packages. This was perceived as a barrier in situations where respondents felt that food packages were much too large. Respondents utilized a variety of strategies to deal with this barrier. The most common being cooking larger portions and freezing the additional amounts, planning several meals that would utilize the food item with the subsequent days, finding an appropriate substitute, or altogether eliminating the food item.

5.2.2.2. Agricultural Market

Availability or access to fresh produce was also dependent on place of residence of respondents. One respondent in particular who lived on a farm with an apple orchard felt that the access to fresh and preserved apples all year made maintaining her diet considerably easier. This individual felt that with this constant availability of fruit at minimal cost, there was always a nutritious and quick low fat food item available.

" ... but now listen another thing, my body well, I love sweets, but I just eat my 2 apples a day, everyday, and applesauce and anything I want with apples and I am very fortunate because most of these people can't get it all the time and they have to pay." (UR, Interview 1).

Access to fresh produce was further represented by a respondent who had a family member with a vegetable farm. The regular availability of fresh produce at a reasonable cost, due to the agricultural market, made maintenance of her diet less difficult. This was also the case with the availability of fresh fish during the summer months, obtained through recreational fishing.

5.2.4. TRAVEL

The availability of food while travelling was also indicated by some respondents to be a barrier to maintenance. Respondents experienced difficulties when travelling due to the unavailability of appropriate food choices as well as not being near the convenience of their own homes.

One respondent's experience was at the beginning of his holiday travels when being served his meal on an airplane. Although QP had already made the extra effort to pre-order a low fat meal, the special meal was not available to him. Due to the short duration of this plane ride QP decided to forgo his meal and eat a more appropriate low fat meal later on.

" When travelling, when we went to Bermuda last time we asked for a low fat meal on the plane and got there and they didn't have it. And they had no real reason for it, but I think I did get something on the way back. But on the outward flight they screwed it up and I didn't get anything so I didn't eat anything." (QP, Interview 2).

Another respondent also expressed similar difficulties when travelling by train. In this situation ED did not pre-order any of his meals and was on the train for a long time and thus could not use the obvious strategy of forgoing a meal.

"My brother and I just went to Montreal, Toronto, and Kingston, Hamilton for a couple of NHL games and uh on the train, I went by train, uh the difficulty again is the menu and there is no choice and there is no way to get other food and, but you know that ahead of time, you think that you are going to be a captive audience to the menu, so you could take something on board, unfortunately I didn't so I just had to try and make do." (ED, Interview 2).

Other respondents who experienced difficulty maintaining their diet while travelling felt it was because they were not at home and therefore not able to follow their daily routine. There were however, many creative strategies that respondents relied upon in order to help maintain their diets. This is expressed through SR's explanation of travelling during the summer:

" I find the biggest part was when we travel, like it was difficult, like during the summer we tent a lot so you take your own food and what we did was a lot of times, we would take a masonry jar and we would soak the beans or the lentils in the masonry jar all day when we were travelling, so at the end of the day you have lentils that are all soaked and ready to cook." (SR, Interview 1).

5.3. TIME

When speaking with respondents about barriers to maintaining their diet, the factor of time was frequently discussed. Although at first the theme of time may seem to be more of a personal barrier then a social barrier, it was categorized as a social barrier for two reasons. Although the time factor is not something that can readily be changed through the establishment of a healthier environment, it is also not a barrier that can be controlled by the individual. Secondly, respondents felt that time was something that they had little to no control over. This is not to say that they did not develop some unique and effective strategies to deal with time, however, it was commonly referred to as just one of those things you have to get used to in life.

There are three main areas that respondents discussed when speaking about time: these were the time to learn general knowledge through the course, the time required to prepare and cook foods, and the time required to read labels when shopping for foods. Altogether, these time commitments were described as one of the most frustrating barriers that respondents had experienced.

5.3.1. Time to Learn

Although all respondents had completed the education course, the time involved was an issue. To begin with, respondents had to have enough time available to participate in the course. The course was run over eight weeks and was divided into a hour exercise component followed by a three hour lecture and hands on cooking component. This schedule required respondents and their significant others to invest four hours each week for a total of thirty two hours.

Due to this time commitment, several respondents had to postpone enroling in the course until the next session in order to rearrange their schedules. Although one evening a week was viewed as quite an extensive time commitment by most respondents as well as their significant others, all participants of the course felt that their time had been well spent.

Beyond the time commitment of the course, the time required to learn continued after the eight weeks. Learning information pertaining to the maintenance of their diets was an on going process. Several respondents expressed how this learning process was one that required a lot of their time throughout their daily routines.

Respondents varied in how they actually sought out new information both during and after the course yet all respondents did continue to learn more about nutrition to some degree. The majority of respondents relied on a variety of sources in order to acquire this new knowledge such as magazines, books, friends, physicians, dietitians, and the internet.

5.3.2. Preparing and Cooking Foods

The time that it takes to prepare and cook foods mentioned by all respondents. Through the course participants were provided with a variety of recipes and strongly advised to incorporate beans, lentils and vegetables as the main staples of their diet. The amount of time required to peel and cut vegetables, as well as presoaking beans was mentioned by all. Respondents differed, however, in whether or not they looked upon this extra time commitment as a barrier.

Many respondents acknowledged the time factor but did not perceive this to be a barrier since they were now retired or working at home. These individuals now had the extra time needed due to their more flexible schedules. The following comments made by BA and ED represent the benefits of having extra time available.

> "If time was a factor, time is not a factor anymore. We eat pretty well at regular times, in the morning and lunch and then supper at 5:30 p.m. or so, so no. Maybe we take more time doing it because it certainly takes more time with this type of stuff, and we don't have to rush, don't have to rush eating and things of that nature compared to if you were working in the morning at 8:00 o'clock you's have to get to work and be rush, but not us." (BA, Interview 2)

> "Well I'm retired so, the time I would spend has increased but I don't really mind it because I like to cook. But one thing I would have to say is that anybody who was working would probably find it difficult and anybody who

was working and didn't prepare or had someone else to prepare for, that would bring a totally different aspect to it." (ED, Interview 2).

There were, however, several respondents who were experiencing many difficulties due to the time required to maintain their diets. These difficulties were most evident with those participants who were not feeling well. The amount of time required to prepare and cook foods is something that educators must consider when promoting new recipes to physically ill patients. This was the case with LJ who was feeling very tired and found the preparation of foods too time consuming.

"Well it just takes too long, way too long. That's why I'm not doing too many of those recipes yet, and well the time to prepare like if your not too well and your husband doesn't want to get into it like mine, its very difficult." (LJ, Interview 1).

Whether or not respondents were familiar with the recipes, preparation and cooking techniques as well as whether or not they enjoyed cooking were also factors that influenced whether or not time was seen as a barrier. For most individuals who enjoyed cooking, the time barrier was something that decreased along with the familiarity of recipes and preparation techniques.

"Oh I found it took so much longer to, yes, preparing the vegetables and I would get excessively tired, which bothers me. Especially the first time you do a recipe, after you've done it several times you know a little more about it, especially if it's something that has quite a few different ingredients in it and so on...When I would go to do the recipe at home, something that would serve six or eight people, I was floored. I mean it took me all afternoon to prepare it." (GF, Interview #1)

"Oh yes relearning new cooking techniques. That took a bit of time and there were a few hit and misses with it too, but it definitely takes a little bit of time and patience." (SR, Interview 2).

The following comment by RP demonstrates that the time factor, along with her general dislike for cooking, influenced the type of foods that she chose to include into her diet. In this case RP suggests that she avoided trying certain foods due to the time that is required to cook.

"No I don't go and buy all these lentils and beans and weird and wonderful things, I find that it takes too long and for one thing I'd have to be cooking more and that is definitely not my thing." (RP, Interview 1).

5.3.3. Reading Labels

Of all the comments made dealing with time, the time that it takes to read labels on food products was the most consistent factor mentioned. Some of the words used to describe this experiences were "frustrating", "boring", "must be organized", and "really bothers me".

The basic skills of label reading were something that all respondents had learnt and practised during the education course. Being able to read labels correctly as well as being aware of all of the misleading advertising of food items was something all participants felt was very important to the maintenance of their diets.

Label reading was easier once respondents became more familiar with certain food products. Becoming familiar with food products through label reading was something that had to be continued on an ongoing basis due to the vast amount of misleading product information as well as the increasing number of new products on the market.

Although all individuals mentioned the time factor involved with label reading, a few respondents found this time commitment to be more inconvenient then others. This inconvenience was expressed in the amount of time it takes to go grocery shopping as described below by SP.

> "Oh, time consuming, like I mean, we read everything when we go shopping and I never liked to shop before all of this but now, you have to, you know, read every label, all the labels to make sure you are buying the right thing and it takes a long time. No I don't like shopping." (SP, Interview #1).

5.4. SOCIAL ENVIRONMENT

When discussing the experiences of respondents dealing with their social environment two main categories were identified. These were:

1) Social events

2) Family, Friends and Others influences

These categories varied with each respondent depending upon the context of the situation. The respondent's social environment also exhibited both positive and negative influences on diet maintenance.

5.4.1. Social Events

When speaking with respondents about daily routines and diet maintenance experiences, a variety of social situations were described. All respondents had experienced a variety of social events that varied extensively in size and nature. The term social events is therefore used to describe both informal gatherings of two or more people as well as more formal affairs involving many people.

The influence that social events had towards respondents' diet maintenance was heavily dependent upon the individual and the strategies that they commonly employed. Although this influence differed with each respondent there was a general consensus from all that a strong social component of food and/or drinks always existed. This was confirmed by each respondent's acknowledgement that food and/or drinks were always a main component of any social event.

This 'sociability' factor of food was further verified by my own experiences

throughout the interviewing process. All interviews were completed at participants' homes. The interviews were very informal in nature with the hope of producing relaxed, casual conversation. Due to the relaxed manner of these gatherings each interview became its own social event.

Throughout these numerous social events it was a common occurrence to be offered a variety of food and drink items by respondents. Discussion most often took place over a cup of tea or coffee with some type of cracker, cookie, fruit, or low fat cookie. The common offering of food and/or drink, that was not necessarily low fat, soon turned into an ongoing joke with many respondents of how I would end up gaining weight as I explored the experiences of other's diet maintenance.

One of the most common experiences that participants spoke about was going to a social event (ie. birthday, wedding, business luncheon) and not being able to find any appropriate or low fat food items. This deals with the availability of foods outside of the individuals control at a social event. In these cases the participants did not have control over what was being offered and had to decide which strategy to use in order to best deal with the situation. Following is a quote from GF who had just recently gone to a birthday party with an explanation of what strategies she utilized.

> "Of course they served, oh everything was sweets, there was fat in everything. So I took one slice of a sweet bread which I know I shouldn't have because it was buttered, and it would have been true butter knowing the people, and it had a lot of nuts in it. So there were two things that gave me a lot of fat, but I

didn't take anything more." (GF, Interview 1).

During the first interviews, all participants were asked whether or not they could recall any social situations, if food and/or drink had been offered, and to discuss how that may or may not influence their diet maintenance. For several respondents this initial conversation produced an increased awareness of the difficulties of maintaining their diet. This was case with ED who explains how he found himself in a difficult position just prior to the second interview.

> "I discovered another one that uh, you really can't do anything about except not eat, and that is when they, somebody is going to throw a luncheon business social, so there will be a financial committee at the such, we will say, and they are serving sandwiches. Well there is no choice, ham and corned beef and that is it and buttered sandwiches and all that rich mayonnaise. So you eat one or two and wish you could have more but that is a real bind." (ED, Interview #2).

The difficulty that several respondents were experiencing during social events was described further by two respondents who spoke of how they started to avoid going to certain social gatherings. Both respondents explained how they felt they could maintain their diet better by not placing themselves in a social situation that did now offer the appropriate foods. This is the case with SR as she explains why she had stopped going to the church social since completing the education course.

"Well you see somethings I have stopped all together. Like I used to go to, once a month, we would have a church social where we have a, everybody brings in food and you eat. It is sort of like a buffet style and then you eat anybody's, but that didn't really work for me because you don't get to eat your own food and uh so we just stopped going there because that was too much of a problem." (SR, Interview 1).

GF explained to me how she had also experienced difficulty with a similar situation. In this case she speaks of attending a potluck dinner. GF decided however, that instead of missing this social event due to the lack of appropriate food items, she would prepare and supply several low fat dishes herself. This way GF was able to ensure that enough low fat food items would be readily available.

"On Saturday night we usually have a potluck supper, well you take something for it. So I would always make one of my low fat dishes and take that and usually I made a dessert as well and we're not required to make both, but I did so that I would have something for each. Now I would take a much larger portion of my own and maybe a little spoonful of something I thought was not too bad of somebody else's so I would be a little more social." (GF, Interview 1).

5.4.2. Family, Friends and Others Influence

The influence that respondents' families, friends and others had on their diet maintenance was both positive and negative depending on the dynamics of the relationship. The positive or negative nature of this influence was dependant upon whether other members shared similar eating habits as well as whether or not other members encouraged respondents' new eating behaviours.

i) Family

The respondents who experienced a positive influence from their family expressed feelings of both gratitude and reliance. This was the case with DC who explained that without his wife's involvement he would not be capable of maintaining his diet. DC's wife not only bought all the groceries but it was she who prepared and cooked all the food. This type of relationship between husband and wife or significant others, and the position of responsibility for food preparation was very common with this group of respondents.

The influence that close family members had on diet maintenance was also expressed through stories of how a significant other may try to control which foods were eaten by the respondent. This control was due to the perceptions that the significant other held towards the benefits of certain foods. This was the case for both HG's and TR's wives who were trying to disguise certain food items within a familiar recipe. HG's wife describes how she has tried to alter her traditional chicken soup recipe by adding certain types of beans without her husband knowing.

HG's wife – "Yes, so I throw a handful of those and I do chickpeas so I throw a few of those in and then you can get a soup mix at the store too, and so I just throw that in plus you know I have chicken and everything else, but that thickens it up and that way he gets a little bit of beans even though he doesn't like them."

(HG, Interview #1).

Families were also considered to have a positive influence when all members of the family shared common eating habits, as well as when family members were very encouraging towards participants diet maintenance efforts. This was the case for KJ and his wife who have always shared very common eating practices that happen to correspond to a low fat diet. In this way KJ did not feel that the family had to make any major adjustments to their eating habits following the education course. KJ felt that his family had a very positive influence due to their similar eating habits because he was not singled out in anyway and therefore did not see it as being "on a diet" but rather a way of life.

"No, I have never been much of a diet person, and my wife and I always eat this way, we both do and no its not an ideological thing, its just the food we eat so I would say that made it much easier, well much easier then if she was eating foods that I didn't, or food that I shouldn't." (KJ, Interview #2).

For other respondents, it was not so much the fact that family members were sharing similar food habits but whether or not they encouraged respondents' efforts to maintain their diet. CB feels that although she and her husband do not always eat the same foods his constant encouragement has a very positive influence on her diet maintenance. This encouragement was through words as well as her husband's actions. CB explains how her husband still likes to have a chocolate bar or some kind of sweet at times but realizes that she should not be eating such foods. He therefore make the effort to either wait until she has gone to sleep for the evening before he eats such a food item or does not bring such treats into the household.

> "Oh yes, my husband, he is a positive influence on me and he really likes all these foods or at least he will eat it and never complains. Like they gave us a lot of recipes at that course and he loves most of them and some I don't like and he does like and he'll say to me 'Why don't you make that' or this type of things so its no problem with him. In fact he goes out of his way to help, like he came in one night and he was chewing, and I said 'What are you chewing on' and he said nothing but I could smell and I knew it was a chocolate bar but he wouldn't come in eating it. He had the last bit before he came in the door. He probably stood out there eating the chocolate, but no he's very good." (CB, Interview #1).

Unfortunately, not all participants felt that their family had a positive influence

on their diet maintenance. Several respondents expressed difficultly maintaining their diet because of the availability of household food items that were high in fat. These items were available because not all family members shared similar eating habits with respondents and were not willing to forgo food items that they enjoyed eating. As well, a few respondents felt that their family members actually discouraged their efforts towards maintaining their diets. In these cases, respondents felt that their family members were not aware of the importance of maintaining a low fat diet or were not aware of their influence on respondents eating behaviours. This was particularly difficult because of the regular contact respondents had with family members on a day to day basis.

ED's family members shared very different eating habits to his own. This made it more difficult for ED to maintain his diet, not only due to the fact that other foods where common within his household but also because ED was the primary person to prepare and cook the foods.

> "Yes, although uh my daughter is here now and she wishes that there was more for example, non–light, regular yogurt rather then light yogurt and there was butter, and regular barbecue sauce and that sort of thing. Well and take this Sunday for example everybody else had pork, uh roast pork with a wine soya crabapple jelly sauce all over and um oh this was hard to make. Not hard to make in the sense of hard to follow the recipe but hard to make that stuff and not drool all over it and sneak a little bite of it here and there and wish you

could have it for supper too." (EB, Interview #2).

ii) Friends' and Others' Influence

The influence that friends and others had on participants' diet maintenance, even though similar to reasons for families influence, often added in the influence of social events as previously described. Although this influence could be both a positive or negative factor, it was not as consistent throughout respondents' lives as was the influence of their families.

The positive or negative influence of friends and others also was described as being dependent upon whether or not they understood the seriousness of the respondent's CVD health status. CB discussed how her friends were all very aware of her situation, and although they did not share similar habits, they were both aware of her dietary needs as well as supportive towards her maintenance efforts.

> "Well my friends all know me and they will say like 'What can you have' or 'can you have this', before I even go to their place or out with them somewhere, because they all know, they know what I went through with the operation and they were all very concerned, and they are very good that way, so they will have something special. Like they have always had something I could eat." (CB, Interview #2).

Just as with family, the influence that friends and others had was not always

perceived as a positive influence. This was the case with LJ who felt very influenced by what others thought about her eating habits and found their influence to have a negative influence on her diet maintenance plans.

> "I would say that is the most difficult thing. People's opinions you know, uh some of them sort of ridicule you because they don't want to go along with it, like even my close friends does this at times, so you have to keep a low key about it at times." (LJ, Interview #1).

Thus influences of family, friends and others can be both positive of negative depending upon the context of the relationship. It was, however, consistently remarked upon that no matter which way the influence was, family, friends, and others played a major role in respondents' diet maintenance. This demonstrates that diet maintenance is not solely dependent on the individual and that all others that have any type of social contact with the respondent can, in fact, influence their maintenance and should be considered when prescribing such dietary regimens.

5.5. CULTURE

The last theme to discuss in relaying respondents' experiences while maintaining their low fat diets, is that of culture. Although there are two definite categories that fall beneath this theme area, culture is also discussed in relation to its

influence on all themes. When interviewing participants about their experiences, culture was not something concrete that respondents spoke about. Instead, culture was something that emerged through all theme areas and affected every aspect of one's diet maintenance.

5.5.1. Lifelong Habits/Upbringing

When relaying stories of their experiences, participants often looked back to the way they were raised. At the time of these interviews, all respondents had demonstrated many changes to their original eating habits. The influence of their previous eating habits on their diet maintenance was, however, still mentioned.

The influence that lifelong habits have on diet maintenance is expressed by NM who tells of how she still has difficulty eating something for breakfast as well as the idea of not eating meat as the main part of the meal.

> "Oh I used to hate breakfast when I was going to school and I think that that really is still with me a bit. Like I remember especially when I would wake up in the morning and I would smell onions frying and that to me is not breakfast, hash, baked beans, cold meat, that was served to the men though, the men who were working. Oh well, but I think you must realize that you are talking to someone who was raised on a farm with lots of beef, like we always had a freezer full of meat and that, and uh, so to really expect that someone like me would be able to change and not eat any of that stuff, like be a vegetarian like,

I can't see it." (NM, Interview #2).

The influence that habits have on maintenance not only applies to the respondent but also to the preparation and cooking habits of the primary food preparer within the household. HG's wife explains such a situation and how her upbringing and cooking habits influence how she prepares foods and this, in turn, would influence what HG ate.

> "Well I think a lot of it has to do with the way we were brought up. You know you always had to put fat in the frying pan, like if you had meat in the frying pan and it starts to stick a little bit, you automatically put more fat. So most of the time we just add a bit of water and it doesn't change the taste, but sometimes I just do it without realizing because it is just habit, and uh like I've been doing it that way for so long and that was the only right way to do it before." (HG, Interview #2).

5.5.2. Holidays

During the course of this research project, Christmas, Valentines Day and Easter occurred. The effect that these holidays had towards diet maintenance often brought together the influences of family, friends and others, social events and lifelong habits. Due to this multiple influence it was very common for respondents not to maintain their diets.

An example of how all these influences come to play at one time is described by RP. In the following quote we are shown that her family influence during the traditional Easter meal is something that she feels she has no control over and therefore she is not able to strictly maintain her diet.

> "I am going to my sister–in–law's and it will be, well she will have ham, so I will have to eat a little bit of ham. But she will have lots of vegetables too, and of course she puts butter on her vegetables after she cooks them. I have no control, I have to eat what she puts before me, especially being that its a special Easter meal you know." (RP, Interview #2).

Similar comments were made by other respondents referring to Christmas time as well as Valentine's Day. In each of these situations respondents felt that the culture or the tradition of holiday made maintaining a low fat diet difficult. This tradition of rich foods or inappropriate foods was, however, only present during the holiday season and therefore, overall respondents felt that it may not have that much affect on their health status.

NM expresses how she experienced difficulties throughout Christmas due to her family's traditions but also how these holidays and traditions were an equally important part of her life and therefore they would not be totally excluded.

"Oh yes, well I grew up with plum pudding, and that is Christmas, and it just doesn't seem to be the same without it, uh, like I had to have a bit and that but that was over the whole span of Christmas, and no, but I really think that is important as well. Like to not have plum pudding, well it wouldn't be the same and then why even bother." (NM, Interview #1).

5.5.3. Overall Influence on Other Themes

The theme of culture is one that I feel influences all other theme areas and overall has the utmost influence on a participants behaviour. The culture in which we live is a reflection of our social environment. Culture predominately influences how and what we eat by determining how we are introduced and socialized to food. The culture in which you are born is a consistent element in the environment, one which touches every aspect of our lives. An example of this would be how I referred earlier to personal food preferences. The culture in which the individual is born and raised has a major influence towards the development of these food preferences.

The influence of culture can also be evident through a number of themes at the same time. An example of this is with NM. In the following quote we are told how NM's culture, upbringing in this case, influences not only her personal food preferences but also how she perceives the cost of foods.

"Oh yea, well skim milk, oh no, skim milk and I don't get along very well. I drink 1% which is almost the same thing, but skim milk to me look like a

dirty milk pail. Well you've got to remember growing up on a farm we never had skim milk. No we just had heavy cream and that and always like a freezer full of meat and pies and that. You know, in case someone dropped in but now not anymore. And the price of meat, when it was pretty much free before on the farm, now that is hard to handle." (NM, Interview 2).

The above comment from NM also introduces another interesting fact about our cultures. The high fat content of foods is a problem now because of our sedentary lifestyle. In the past when people were very active working on a farm, a high fat intake ensured a way to meet the high energy requirements. Besides the fact that people were much more physical, the negative influence of a high fat diet towards further progression of CVD was probably not the major health concern of that time. Culture influences our definitions and values of health.

The influences of culture can also be seen when we look at the social barrier of time. We are presently living in a modern capitalistic culture, one which stresses the importance of immediate satisfaction. We are living in a very fast paced culture where people are busy with the many facets of their lives. Within this culture, time has become a valuable commodity. When speaking with TR and his wife about restaurants the influence that our culture has toward are value of time was also evident.

TR: "I wonder why fast foods don't have two recipes, or two menus. One for the person who just will take the fast food and then the other person who is fat conscious."

Wife: "Well look at McDonald's did have the McLean, but every time you had to order it, it took longer because it wasn't precooked."

TR: "Yeh, and then, sit over there and they will bring it to you, and then you can sit there for 1/2 hour or more. Not like the regular drive through in 2 minutes or less, instant gratification."

Another example to further elaborate on the influence that culture has on all the theme areas was evident through ED's following comment. In this passage we were discussing how our culture has always associated food with any social event. ED expressed that people expect food, or at least a refreshment, when doing pretty much anything. ED feels that the assumption that food or refreshment is going to be offered has become so customary it is now the only way to get people to attend a social gathering.

"Yeh, and its hard to get people out to anything anymore, unless there is a lunch or something offered. It seems that everyone needs something for their time and effort and in most cases that can be somewhat satisfied with somekind of food." (ED, Interview #2).

The barriers that have been discussed within this section, classified as social barriers, are factors that are external to respondents' direct control. These are barriers that all participants felt they had little or no control over and were existent within each respondent's environment. All respondents experienced these social barriers, to differing degrees, and felt that all barriers, both personal and social, had a significant influence on the long term maintenance of their diets.

CHAPTER VI: SUMMARY AND CONCLUSIONS

This chapter presents an overall representation of the results generated from the in-depth, qualitative examination of respondents' experiences towards the maintenance of their low fat diets. Observations have been organized into a model (Figure 6.1.) that describes the experiences that respondents communicated.

The model was generated from the collection and analysis of respondents' perspectives of social barriers to the maintenance of their low fat diets. The model offers a systematic organization of the themes and illustrates the interrelationships that exist. It has been developed to represent the overall experiences of respondents and to help describe both the common and differentiating characteristics.

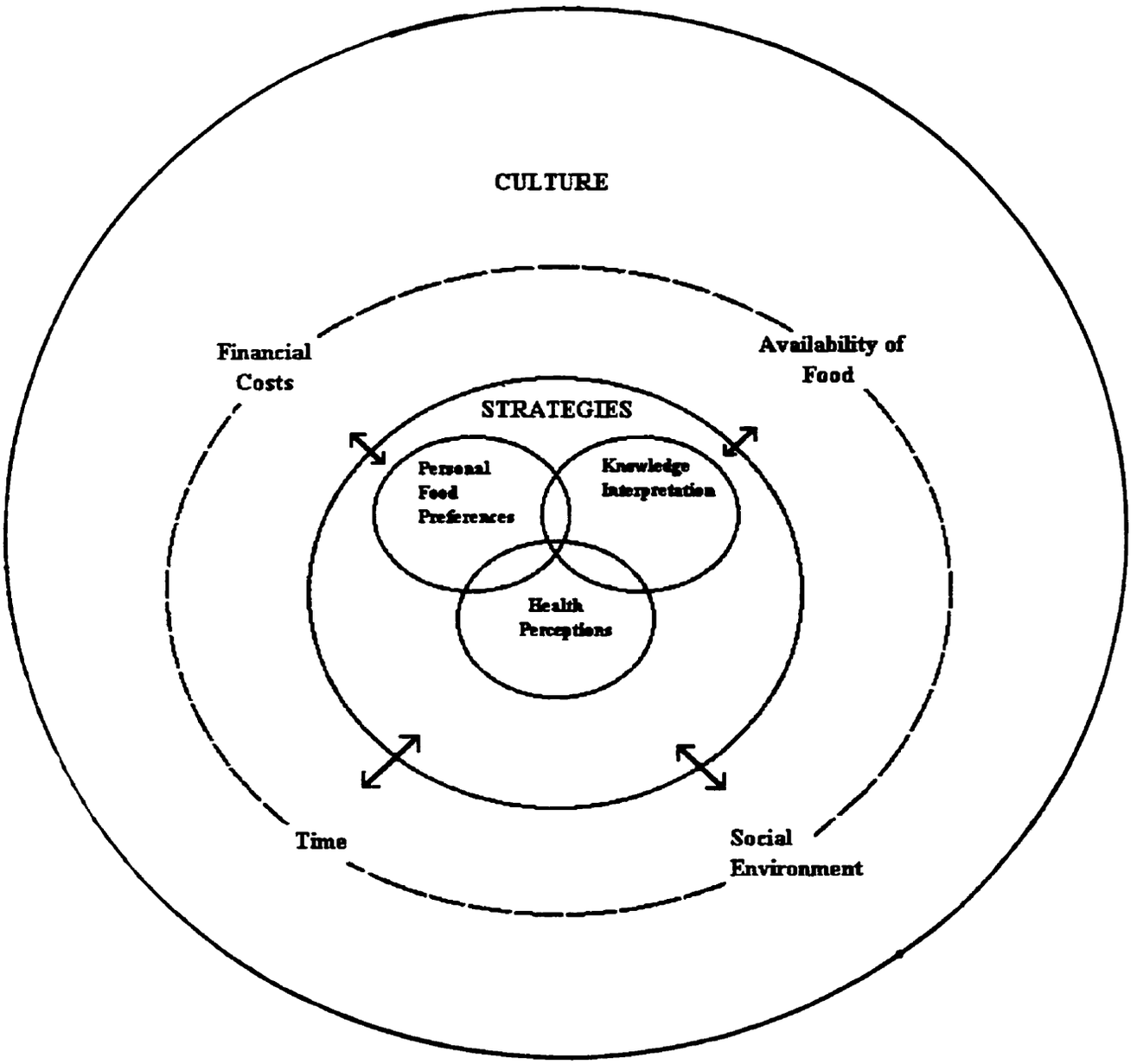

Figure 6.1. Perceived "Personal and Social" Barriers to long term diet maintenance.

6.1. THE MODEL

The main components of the model are depicted in a circular fashion to show that these are not stages in a sequence of events but rather parts of a complex and interactive process. Each component exists to varying and different degrees in the maintenance experiences of all study participants.

The circular fashion of the three inner circles interlinked and surrounded by the larger circle represents that different individuals with different perceptions and knowledge may develop different strategies. These internal factors are what respondents originally talked about when asked what made things more of less difficult for them to maintain their diet. This is also where many of the theories, models, and strategies of nutrition education end when developing intervention programs.

The Social Barriers are depicted as forces outside of the inner circles. These are seen as influences that are not within direct control of the respondents. These barriers are factors that in addition to Personal Barriers, influence long term maintenance. The interconnecting lines between the social barriers represent how many of these themes are often present at the same time and how they extend towards another.

Culture is depicted as the outmost circle that encloses the entire diet maintenance process. This was done in order to depict how an individual's culture has influence on all of the diet maintenance factors, both personally and socially.

The model has been developed to represent the respondents' perceptions,

preferences and interpretations of their diet maintenance. All parts of the model are linked to one another to differing degrees depending upon the individual and, in turn, influence. Through this model representation, one can more easily recognize the need to consider all aspects within an individual's life when promoting long term maintenance to low fat diets.

6.2. IMPLICATIONS FOR RESEARCH

The model representing the perceived personal and social barriers contributes towards the building of a socioenvironmental theory detailing the effect that different factors have on long term diet maintenance. The development of such a theory would allow for a greater clarification of the relationships among all barriers in one's environment thereby allowing for a broader view to be taken towards the determinants of health. By presenting a more adequate representation and deeper understanding of external factors influencing diet maintenance of low fat diets, it is now reasonable for researchers to expand on these findings. Researchers can continue to build towards a theory that considers the psychosocial as well as the socioenvironmental factors, moving away from the traditional individualistic theories that have been relied upon in the past.

Further research dealing with different population groups such as younger individuals (20–45 years of age) with hypercholesterolemia, both male and female and both married and single, may expose different social barriers than those experienced by the Extended Warranty II population group. As well, there is a need to investigate

the barriers that groups from lower SES experience, such as single mothers on welfare. By researching groups with limited resources one can further develop the categories within each theme area and to clarify how different segments of a given population experience different barriers.

The personal and social barriers discussed throughout this research project are those perceived by a particular group trying to maintain a 10% energy from fat diet. However, other individuals dealing with different health problems are undoubtedly also dealing with barriers to maintaining changes to their habits. Social barriers can be investigated for such things as maintaining a healthy balanced diet, maintaining a diabetic food plan, or any kind of weight management program.

There is also a need for additional research which could further develop this model. Although this research has identified numerous social barriers, the group of participants were fairly homogenous. As well, these are barriers that a group of participants experienced after completing an eight week education course. We can only begin to imagine how much more difficult it would be for the general public to maintain changes to habits over the long term. I would suspect that those individuals, even if given the opportunity to meet with a health professional a few times simply for advice or for a diet information, would experience more difficulty due to their lack of knowledge.

The difficulties that participants expressed towards the maintenance of their exercise programs also suggests the need for similar research into other lifestyle behaviours.

6.3. IMPLICATIONS FOR HEALTH PROFESSIONALS AND PROGRAM PLANNERS

Lifestyle education courses such as Extended Warranty II have expanded upon information dissemination to address the internal components of the model; the personal barriers to change. These type of risk reduction courses are necessary in order to provide individuals with both the essential knowledge and skills required to maintain low fat diets. Through these courses, participants are then better equipped to address the personal barriers that they may face.

However, to solely concentrate education towards the reduction of personal barriers to change is inadequate. Through consideration of the social barriers that individuals experience, health professionals are faced with many opportunities for influencing change. Once program planners have an increased awareness of social barriers that people face, they will be better able to design, implement and evaluate programs that address all roadblocks to change, both personal and social. For example, by informing participants beforehand of barriers that they may come up against, program planners can help participants plan for strategies on how to best deal with such situations.

In addition, all health professionals must be aware of the many difficulties that the public is experiencing trying to maintain a healthier lifestyle, and cannot concentrate solely on one specific area. As an example, in order to promote health, a healthy diet along with proper exercise must be promoted. Nutrition experts cannot

ignore the difficulties that patients are having maintaining their exercise program while concentrating solely on the diet. By working closely together with other health professionals, and being aware of their messages and area of expertise, the whole person can be treated through a combined effort and not just one aspect of an individual's health.

Program planners can also move one step further and begin to develop and advocate for programs that target changes within the environment, moving beyond individual control and responsibility for behaviour change. Through the identification of social barriers, program planners are presented with the opportunity to advocate for certain changes within the environment in order to promote health. Examples of this may be to lobby food manufacturing companies for the establishment of fair market prices for low fat food items. There could also be a need to lobby grocers for the need of increased accessibility to healthier foods at their local supermarkets. As well, restaurant owners can be educated on the need for healthier low fat menus, and food producers for increased production of low fat convenience items. It is through the development of healthy public policies that the availability, accessibility and cost of heart healthy diets, can be influenced, and in turn, healthy lifestyles and nutritional well-being can be promoted and reinforced.

The research findings from this study outline several key areas within the respondents' environment that can be targeted for change through health education, health advocacy for healthy public policies, as well as small group and community development. Such findings can be used as a guide to demonstrate how both the

individual responsibility as well as the social and cultural forces must become targets for change. It is only through such health promoting activities that healthy environments can be built, environments that both promote and help sustain healthy lifestyle choices.

REFERENCES

Achterberg, C. (1988). Qualitative methods in nutrition education evaluation research. Journal of Nutrition Education, 20 (5). 244–250.

Achterberg, C.,& Clark, K. (1992). A retrospective examination of theory use in nutrition education. Journal of Nutrition Education, 24 (5) 227–233.

Achterberg, C., & Shepherd, S. (1992). The components and use of qualitative research. In Monsen, E. (Ed.), Research successful approaches (pp. 77–130). American Dietetic Assoc: Mexico.

Blankenhorn, D. (1989). Regression of atherosclerosis: dietary and pharmacologic approach. Canadian Journal of Cardiology, 5 (4). 206–209.

Evans, R. (1982). A retrospective on the "New Perspective", Journal of Health Policies and Law, 7 (2) 325–344.

Glanz, K. (1980). Compliance with dietary regimens: its magnitude, measurement, and determinants. Preventive Medicine, 9 787–804.

Glanz, K. (1985). Nutrition education for risk factor reduction and patient education: A review. Preventive Medicine, 14, 721–752.

Glanz, K., Eriksen, M. (1993). Individual and community models for dietary behaviour change. Journal of Nutrition Education. 25 (2). 80–86.

Glanz, K., Mullis, R. (1988). Environmental interventions to promote healthy eating: A review of models, programs, and evidence. Health Education Quarterly. 15 (4). 395–415.

Health and Welfare Canada (1986). Achieving health for all: A framework for health promotion. Minister of Supply and Services: Ottawa.

Health and Welfare Canada (1993). Promoting heart health in Canada: A focus on heart health inequalities. Minister of Supply and Services: Ottawa.

Heart and Stroke Foundation of Canada. (1991). Cardiovascular disease in Canada. Ottawa: Authors.

Janas, B.G., Bisogni, C.A., Campbell, C.C. (1993). Conceptual model for dietary change to lower serum cholesterol. Journal of Nutrition Education. 25 (4). 186–192.

Johnson, D., Johnson, R. (1985). Nutrition education: A model for a synthesis of research. Journal of Nutrition Education 17 (supp): S1–S44.

Leiter, L. (1991). Regression of atherosclerosis. Canadian Medical Association. 144 (4). 459.

Loscalzo, J. (1990). Regression of coronary atherosclerosis. The New England Journal of Medicine. 323 (19). 1337–1340.

Marmot, M.G., Mustard, J.F. (1992) Coronary heart disease from a population perspective. In Evans, R., Barer, M., & Marmor (Eds). Why are some people healthy and others not. The determinants of health of populations. New York: Aldine de Gruyter.

Marshall, C., & Rossman, G.B. (1989). Designing Qualitative Research, California, Sage Publications.

McAllister, M., Baghurst, K., Record, S. (1994). Financial costs of healthful eating: A comparison of three different approaches. Journal of Nutrition Education. 26 (3). 131–139.

Nemcek, M.A. (1990). Health beliefs and preventive behaviour. A review of research literature. AAOHN Journal 38 (3) 127–138.

Nikolaus, T., Schlierf, G., Vogel, G., Schuler, G., & Wagner, I. (1991). Treatment of

coronary heart disease with diet and exercise – problems of compliance. Annual of Nutrition and Metabolism. 35 1–7.

Nova Scotia Department of Health and Department of National Health and Welfare (1987). Report of Nova Scotia Heart Health Survey (1986). Halifax: Authors.

Nova Scotia Heart Health Program (1992). Scientific rationale and recommendations for improving the cardiovascular health of Nova Scotian adults. Halifax: Authors.

Ornish, D., Brown, S.E., Scherwitz, L., Billings, J.H., Armstrong, W.T., Ports, T.A., McLanahan, S.M., Kirkeeide, R.L., Brand, R.J., & Gould, K.L. (1990). Can lifestyle changes reverse coronary heart disease? The lifestyle heart trial. Lancet. 336 129–133.

Patton, M.Q. (1990). Qualitative Evaluation and Research Methods. Sage Publications, Newbury Park, CA.

Quilchena Consulting Ltd. (1994). NUTS Nutritional Assessment System [Computer Program], Vancouver, BC, Quilchena Consulting Ltd.

Rosenstock, I. (1990). The health belief model: Explaining health behaviour through expectancies. In K. Glanz, F.M. Lewis, B.K. Rimer (Eds). Health Behaviour and Health Education. (pp. 39–58). San Fransico: Jossey–Bass Inc.

Schuler, G., Hambrecht, R., Schlieif, G., Grunze, M., Methfessel, S., Haver, K., & Kubler, W. (1992). Myocardial perfusion and regression of coronary artery disease in patients on a regimen of intensive physical exercise and low fat diet. Journal of the American College of Cardiology. 19 (1). 34–42.

Schwarts, C., Valente, A., Sprague, E., Kelly, J., Cayatte, A., Mowery, J. (1992). Atherosclerosis. Circulation. 86 (6) supp.lll–117–lll–123.

Sims, L. (1981). Further thoughts o research perspectives in nutrition education. Journal of Nutrition Education. 13 (1) supp. S70–S75.

Slater, C., Carlton, B. (1985). Behaviour, lifestyle, and socioeconomic variables as determinants of health status: Implications for health policy development. American Journal of Preventive Medicine. 1. (5). 25–33.

Slater, C.H., Lorimor, R.J., Lairson, D.R. (1985). The independent contributions of socioeconomic status and health practices to health status. Preventive Medicine. 14 372–378.

Smith, J., Lopez, L. (1991). The application of theory and its relationship to program effectiveness in nutrition education research. Journal of Nutrition Education. 23 (2). 59–63.

Urban, N., White, E., Anderson, G.L., Curry, S., Kristal, A.R. (1992). Correlates of maintenance of a low–fat diet among women in the women's health trial. Preventive Medicine. 21 279–291.

World Health Organization (1986). Ottawa Charter for Health Promotion. WHO: Authors.

APPENDIX A LETTER TO DR. WIGHTMAN

Dr. Howard Wightman
Kentville Professional Centre,
70 Exhibition Street
Kentville, NS B4N 4K9

Dear Dr. Wightman:

Let me begin by introducing myself. My name is Colleen Wright and I am a Graduate Student funded through the Cardiac Prevention Research Centre in Halifax, Nova Scotia.

Although I was unable to meet you personally at the conference, "Prevention of Coronary Heart Disease in the 90's", I thoroughly enjoyed listening to you speak and am very interested in your work on the effects of exercise and low fat diets on regression of atherosclerosis.

My thesis topic is "Social Barriers to the Maintenance of a Very Low Fat Cardiac Diet – A Qualitative Study". The purpose of my study is 1) to explore the experiences of a group of cardiac patients, who have been following a low fat cardiac diet, in order to reveal the social barriers (external factors out of the individual's control) that they encounter; and 2) to describe the effects that these social barriers have had towards long term maintenance of their low fat cardiac diet.

I am asking for your assistance in order to collect my data. What I am wanting to know is, if you would agree to ask past patients who have completed your "Extended Warranty II" program, for permission to release their names to myself. I realize that you are extremely busy and suggest that we, at the CPRC, draft a letter subject to your review that could be mailed out to patients.

There are no risks to partaking in this study, and the only inconvenience to the subjects is the time requirement that would consist of three separate one hour interviews. These interviews would be set up at times and locations convenience to the subjects and scheduled between the months of January and May of 1995. I would be happy to meet with subjects in their homes.

If you have any questions or reservations, please contact me at the CPRC (902) 496–4858. If I am unavailable, feel free to speak directly with Elinor O'Carroll (902) 496–4792. I would be please to provide you with a copy of my thesis proposal if interested.

Thank you for your time. I look forward to hearing from you soon.

Colleen Wright

APPENDIX B SUBJECT INFORMED CONSENT FORM

INTRODUCTION:

You have been invited to participate in a study which will explore the experiences of maintaining your cardiac diet since you have completed your "Extended Warranty II" education course. Taking part in this study is completely voluntary. You may withdraw at any time, even after signing this form.

PURPOSE OF RESEARCH:

Past studies have looked at the individual when trying to understand what influences the maintenance of a prescribed diet. The purpose of this study is to look beyond the individual and explore the barriers in your environment/surroundings that may make it difficult to maintain your low fat diet. Whether or not you have maintained your diet is not the concern, but instead whether you have experienced any specific social barriers that made it more difficult.

WHAT HAS BEEN REQUIRED OF YOU:

What I have asked of you is to meet with me for three individual interviews that will take approximately one hour in length. This would mean that you would be willing to meet with me altogether for approximately three hours. For convenience purposes I would be willing to come to your home at a time and date that is convenient to both of us.

In order to ensure that I am able to remember all that you will have told me I am also requesting that the interviews be able to be tape recorded.

RISKS OR INCONVENIENCES

There are no risks to partaking in this study. The only inconvenience is the time requirement I am asking of you.

CONFIDENTIALITY:

At no time will your real name be used to describe anything you have told me. A code name will be given to you that will be used when describing anything specific you may have mentioned. No one but myself (Colleen) will listen to the tapes. The tapes will all be erased once I have listened to them and transcribed what has been recorded.

FURTHER INFORMATION:

If you have any questions about this study, please feel free to contact me (Colleen) at the office or at my home. Please feel free to call collect.

Colleen Wright: Work: (902) 496-2622
Home: (902) 465-5768

I have read all the above information, and willingly give my consent to participate in this research study.

_____
Name (Please Print)

_____
Signature

_____
Telephone: Home or Office (Please indicate)

APPENDIX C INTERVIEW GUIDE NUMBER 1

SUBJECT CODE:

I'm going to turn the tape recorder on now; is that O.K.?'

I am interested in knowing about the different experiences people have when they follow a cardiac diet. So, I am going to ask you questions about general things you have experienced since completing the education course offered by Dr. Wightman.

There are no right or wrong answers – anything you tell me about your experiences while following your cardiac diet will be helpful to me.

Also this information is confidential, so I am the only person with access to it.

As I mentioned I would like to know about your experiences. To begin, it would be interesting to know when you participated in the education course offered by Dr. Wightman.

You have been following your cardiac diet for approximately

I want to talk to you about your experiences since that time. As I mentioned there are now right or wrong answers and no one is going to look at this information and say that is bad or that is good. So, Can you describe some of the different types of social situations you have experienced since you have completed the course? What types of social situations can you recall?

Probes: weddings, funerals, holidays (Christmas, Thanksgiving, Easter, Halloween, graduations, birthdays, anniversaries)

Can you tell me whether or not you were exposed to food or drinks at these situations?

Would you elaborate on how that may have affected your maintenance of your diet?

What made being in the social situation easy or difficult?
Family
Friends,
Feelings of obligations

Now I would like to talk a bit more about the influence that family and friends may have on your maintaining your diet? If there any of your family or friends who share your present eating habits? How do their habits differ from yours? What do you find most difficult with this?

Have you been able to find the foods you have needed to maintain your diet. What items are most difficult to find? What items are easiest to find? Have there been items that you have been unable to find?

Has the cost of food items influenced what items you have chosen to include within your diet. If yes.,, In what ways? Have you found food items which are required for your diet at different costs then foods you would have otherwise bought in the past? In which way – more or less expensive?

I would like to talk about the types and kinds of efforts involved in maintaining your diet. Can you tell me how much time is required on average to prepare a meal. In what ways does this differ from what you previously have done?

Have you noticed a change in your cooking skills needed for preparing your food? In what ways can you describe have your methods changed?

Probes: easier, more difficult, new skills needed, etc.

Have you noticed a need for any new facilities or cooking utensils when preparing your foods. Can you describe.

INTERVIEW GUIDE #2

SUBJECT CODE:

The last time we talked, our discussion focused many different experiences that you have had since completing the Extended Warranty II course. I would like to continue that discussion, especially if you have had any new experiences since the last time we met. Remember there is no right or wrong answers and all the information that you tell me is helpful.

Is it O.K. for me to tape this interview like last time?

So how have things been going?

What has been most helpful to you? Can you give me any examples?

What has made things most difficult. Can you explain why you felt that made things more difficult.

Have you been to any kind of social event since last time? Tell me about it.

If you had to give a family member or friend of your advice on what they may expect when trying to maintain a 10% energy from fat diet, what would you say to them?

Do family members eating habits still differ/same with yours?

How has this influenced what you eat. Can you explain?

Have you tried any new foods since we last met. Can you tell me about that?

Have you had any problems with that? How was that a problem?

Have you tried any new recipes (cookbooks) since we last met. Can you tell me about that?

Have you thought about Easter at all? (or for those after – How did you find the Easter holiday?) Tell me about it?

Now you mentioned in the last interview that:
1)

2)

3)

4)

5)
I'd like to know if you are still doing this?

So, what I think I hear you telling me is.....

INTERVIEW #3 - TELEPHONE

SUBJECT CODE:

Hi _____, this is Colleen phoning. I was wondering if this was a good time for you to chat with me awhile about your diet experiences.

I sent you a summary sheet of what we talked about when I came to your house the last two times in the mail. Did you have a chance to look that over?

Was there anything on that sheet that you did not agree with?

Review summary sheet with each participant.

Is there anything else that you have thought of since we last talked. Can you explain that?

(Add in any questions that are particular to this respondent.)