Participants' Perceptions of Their Involvement in a Cardiovascular Disease Risk Factor Reduction Program

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Abstract

A cardiovascular disease risk factor reduction program was implemented in the Niagara region. To gain an understanding of this program from the participants' perspective, 10 participants of the program were interviewed to document their perceptions of what they learned in the program, their perceptions of their behaviour change and their perceptions of factors that facilitated or impeded any behaviour change.

The learning style inventory and PET test were also given to the participants to further understand their perceptions.

Findings unique to this study highlighted aspects of the andragogical model, self-directed learning theory, learning style preference and psychological type that were prominent in the participants' comments and perspectives.

Implications for practice, theory development and further research are suggested.

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CHAPTER ONE: THE PROBLEM

Introduction and Background

Epidemic diseases move in grand cycles, accompanying changes in culture, social organization, and environment. Cardiovascular disease is one of those mass epidemics and is a manifestation of our 20th century industrialized society's way of life. The rise of cardiovascular disease can be traced back to the beginning of the century and is the first noninfectious disease of Western society which has stimulated a multifaceted and community-wide prevention approach (McMichael, 1989).

Cardiovascular disease is Canada's number 1 killer, claiming 44,000 lives per year. On a local level, the statistics are alarming. According to 1992 statistics from the Public Health Department, the population in the Niagara region suffers from a 24% higher incidence of deaths due to cardiovascular disease than the provincial average. Health officials do not have an explanation for this difference. Cardiovascular disease is a multifaceted disease linked to the following risk factors: age, gender, family history, diabetes, stress, smoking, weight, lack of exercise, blood pressure, high cholesterol and diet. Some of these risk factors such as age, gender and family history can not be manipulated, however, every time we add another risk factor we greatly increase our probability for having a cardiovascular event in our lifetime. A lifetime filled with cardiovascular risk factors left unchecked can result

in either a heart attack or stroke. The results of such an event can lead to death or a state that requires extensive rehabilitation.

Cardiovascular disease is a result of plaque building up in an individual's arteries, slowly choking off the blood and therefore the oxygen to the surrounding tissues. A heart attack or a stroke results from a piece of this plaque breaking away and lodging itself in an artery, completely cutting off oxygen, causing damage to the surrounding tissue. During a heart attack this damage occurs in heart tissue, during a stroke it occurs in brain tissue. The presence of the disease usually makes itself evident through some early symptoms such as angina, which is a sign that the heart muscle is not getting enough oxygen (Heart & Stroke Foundation, 1994).

Treatment for either a stroke or heart attack can be quite invasive and the outcome is often uncertain. The fact of the matter is that medical professionals know that the risk factors noted earlier are the main cause of cardiovascular disease. Prevention of cardiovascular disease is best accomplished through the reduction of the modifiable risk factors, which include: stress, weight, high cholesterol, high blood pressure, smoking, diet and lack of exercise.

Couple the high incidence of death due to cardiovascular disease with the fact that this disease is a

multifactorial disease that shares many of its risk factors with other diseases, and the need for an adult primary prevention and risk factor modification program in the Niagara region becomes evident.

One such program has been launched by Heart Niagara Inc., a regional nonprofit agency located in Niagara Falls. Heart Niagara has a mandate to reduce deaths due to cardiovascular disease in the Niagara region. This mandate is accomplished by providing a variety of education programs at the community and individual level. The innovation of a risk factor education program has taken the form of the Adult Primary Prevention program. Funding was secured for the program in a one-time, $10,000.00 grant from the Ontario Ministry of Health, and financially supplemented by two pharmaceutical companies.

The Adult Primary Prevention Program

What is the Adult Primary Prevention Program? The program has been designed for individuals who have a high risk of developing cardiovascular disease. The family physician refers the individual with elevated risk for developing cardiovascular disease to the program where the individual is given risk factor reduction education. The ultimate goal of the program is to have individuals reduce their risk for a cardiac event by reducing their modifiable risk factors for cardiovascular disease. The intended

result is behaviour change in the individuals leading to a reduction in their modifiable risk factors for cardiovascular disease. The program is set up so that each participant meets with a Lifestyle counsellor has his/her risk factors for cardiovascular disease reviewed. They then mutually agree on strategies for reducing or eliminating the identified modifiable risk factors. These strategies can range from education about how to read ingredients on food labels when shopping in grocery stores, alternate cooking methods, through to strategies for increasing the amount of exercise the individual does.

The Adult Primary Prevention Program is considered a medical model of prevention. However, it must be noted that the medical model does not only refer to the ongoing, unsystematic attempts by medical practitioners to monitor and advise those self-selected individuals - - sick, at high risk, or at average risk - - who pass through the medical system. "Rather it refers to all those prevention strategies in which personal attention is given to individuals" (McMichael, 1989, p. 8).

The personal attention is offered by providing the participants with information and strategies intended to change the participants' behaviour.

The Adult Primary Prevention Program also provides primary care professionals a program to refer individuals with an elevated risk for cardiovascular disease. The current health care system does not provide remuneration to physicians for this type of patient education.

Problem Statement

The Adult Primary Prevention Program is established in the Niagara region to help individuals reduce their elevated risk factors for cardiovascular disease and to all involved, this program appears to be a great idea. However, several questions arise, how do individuals respond to the program, what do they learn, and will they put the information into action? Can we assume that, by providing lifestyle counselling and information, that individuals will take positive action to reduce their modifiable risk factors for cardiovascular disease? Discovering the answers to these questions was the impetus for conducting research on the Adult Primary Prevention Program. I wanted to gain insight into the participants' experiences in the program, their perceptions of their risk factors and attempts at behaviour change. It is my goal to gain insight into some of the factors that may affect an individual's attempts or lack thereof, to reduce risk factors for cardiovascular disease. The data collection that was conducted during the Adult Primary Prevention Program consists of qualitative and

quantitative sources. Guided interviews with 10 participants enrolled in the program were conducted. Quantitative data in the form of physiological measures, learning style preferences, and psychological type check were collected and used to provide a profile of each participant.

The specific questions that were addressed by this research are as follows:

1) What are the participants' perception of what they learned in the Adult Primary Prevention Program?

2) Do participants perceive that they have taken positive action to reduce their modifiable risk factors?

3) What are the participants' perception of factors that facilitated or impeded their behaviour change to reduce their modifiable risk factors?

The population for the Adult Primary Prevention Program consisted of individuals who have been assessed as having elevated risk factors for cardiovascular disease. Once the individual agreed to enter the program, the Lifestyle counsellor assisted each individual to choose the best strategies for reducing risk factors. Follow-up was provided and the individual's progress monitored through physiological data.

Rationale

In Ontario, the health care pendulum is swinging away from primary care that is often obtained in the hospital and is moving instead in the direction of community-based care and primary prevention. This is being implemented with good reason: the health care system can no longer afford the extensive primary care to which we as a Canadian society have become accustomed. Ontario residents are being exposed to an increased number of programs such as the Adult Primary Prevention Program.

The concept of an Adult Primary Prevention Program is a relatively new idea. Prevention or health promotion models have been used widely in the community at large, through the efforts of public health departments and the use of various population-based health promotion strategies (Hyndman, Libstug, Giesbrecht, Hershfield, Rootman, 1993). A program designed for the sole purpose of a one-on-one exchange with an individual at risk of cardiovascular disease with a qualitative follow-up is not well documented in the literature. However, by conducting a study that addresses the research questions in this paper, this research could serve as a bridge for traditional health programs and adult education theories and practice. Presently, most health education programs are evaluated strictly by patient outcome, primarily based on physiological data. The questions of a patient's perceptions/experiences in a

program and the process the patient undergoes during a health education program are rarely asked.

Researcher's Perspectives

> The naturalistic inquirer recognizes that his own values are very much part of this inquiry and that he needs to be as explicit about them as he can, both to avoid misleading persons who use his findings as well as deluding himself. (Guba, 1978, p. 16)

Guba's strong statement about the values of the inquirer must be integrated into this study. Therefore in the next paragraph I state my perspectives related to this research study.

I developed an interest in studying the Adult Primary Prevention Program when I applied for and received a grant from the Ontario Ministry of Health's "Healthy Community" grant program to implement this risk factor reduction education program. I have now become the researcher of this same program. At the time that the research was initiated I was employed by Heart Niagara Inc. which was the agency whose medical personnel designed and implemented the education program. My involvement with health promotion and community health education has spanned a 10-year time frame. I personally believe that health education leading to healthy lifestyle choices is sorely lacking in our communities and educational systems. I also believe that

every effort should be made to remedy this. The current health care system has often been referred to as "illness care," because it does not promote health, but rather treats illness. Only when you have a disease is any effort put into place to help you manage it. Very few health promotion/health education initiatives are available, and even fewer are funded by the current health care system. As mentioned earlier in this chapter, a number of factors are associated with the development of cardiovascular disease, of which many are modifiable. A state of health is within people's reach if they have the knowledge and will to make healthy lifestyle choices. A health care system that truly promoted health through education and prevention would, in my opinion, reap far greater benefits than the current system.

Definitions of Terms

Adult - for this program an adult will be identified as anyone over the age of 18.

High Risk Individual - for the purposes of this study will refer to the individuals who have an elevated risk factor measurement score for cardiovascular disease.

Lifestyle counsellor - This person is the registered dietician who is acting as the coordinator and Lifestyle counsellor for the duration of this study.

Positive Action - refers to efforts made by the program

participants to reduce their risk factors for cardiovascular disease.

Primary Prevention - refers to the prevention of an initial cardiac event.

Risk Factors for Cardiovascular Disease - these include age, gender, family history, weight, cholesterol, smoking, stress, lack of exercise, diet, and diabetes. The modifiable risk factors will be focus of the study.

Risk Factor modification - refers to behaviour change and/or lifestyle change that ultimately reduces the risks of developing cardiovascular disease.

Researcher - is the person who applied for and received the Ontario Ministry of Health, Healthy Community grant to design and pilot the Adult Primary Prevention program. Also, the researcher is an experienced adult health educator and community health promoter.

Outline of the Remainder of the Document

Chapter 2 of this document reviews the existing literature exploring Psychological Types, Learning Style preferences, and Self-Directed learning.

Chapter 3 explains the research approach taken and the design of this study. Also included in chapter 3 is the participant selection process, data collection and analysis process.

Chapter 4 will present the findings of this qualitative study. A synopsis of the participants' interviews will be presented and charts will illustrate comments relating to the theories being studied.

Chapter 5 will summarize the document, relate the findings to the theories being studied and suggest implications for practice, theory and future research.

CHAPTER TWO: REVIEW OF THE LITERATURE

This chapter reviews the relevant theoretical frameworks of the study. To clarify the premise of this study the terms adult, learning, and health education are defined. The andragogical model is reviewed, focusing on the theory as well as relevant aspects of design and practice. Self-directed learning, learning style preferences and psychological types are also explored in this chapter.

At the very heart of the Adult Primary Prevention Program lies the extensive work done by researchers on the Framingham project. The Framingham study was a longitudinal study conducted on an entire town's population in an effort to determine the risk factors for cardiovascular disease. Much of our present knowledge regarding risk factors and their effect on the general public's health status comes from the research done in Framingham (Anderson, Castelli & Levy, 1987). As well, the Canadian and American Heart Associations have contributed a great deal to heart health research and heart health information for the general public.

It is one thing to have all of this elaborate scientific research, concluding that risk factors are the culprit for cardiovascular disease and it is quite another to impart this information to people who have the risk factors and assist them to make strides towards a healthier lifestyle by modifying or eliminating these risk factors. Some of the literature demonstrates that information does

not always lead to behaviour change. "Mass media appeals, however, have had limited effectiveness in changing persons' behaviour. While some of these appeals improve knowledge and change beliefs, they do not necessarily affect behaviour" (Avis, McKinlay & Smith, 1990, p. 137). Avis and her colleagues go on to say that in order for people to adopt healthy behaviours they must know how to do so. Very little in the literature regarding cardiovascular prevention programs makes reference to adult education theories.

Who is an Adult?

What is adult education? This question is best answered by first answering the question "who is an adult?" In Malcolm Knowles' andragogical model, the psychological definition of an adult is stated as "One who has arrived at a self-concept of being responsible for one's own life, of being self-directing" (Knowles, 1984, p. 9). An adult's self-concept of self-direction is essential for any educator to be aware of so that the right climate can be presented in a training or educational setting.

What is Learning?

Another question that needs to be answered is "what is learning?" "Learning is an internal process that varies from person to person, while instruction is external to the learner" (Dickinson, 1973, p. 3). Furthermore, adult

educators have no direct control over the internal processes. The best we can do is arrange the external conditions in order to increase the likelihood that learning will take place. How do we know that learning is taking place? Learning is seen to have four components; "results in a change of behaviour, occurs through practice, produces a relatively permanent change and can not be directly observed" (Dickinson, 1973, p. 5).

Health Education

Further to Dickinson's definition of learning, I must take into account the focus of the research of this paper which is health education, and that the central concern of health education is health behaviour. Health education can be defined as "education that brings about behavioural changes in individuals, groups and larger populations from behaviours that are presumed to be detrimental to health, to behaviours that are conducive to present and future health" (Glanz, Lewis & Rimer 1990, p. 107). In this study the focus is on the individual rather than the community at large.

Andragogical Model

The andragogical model is described as the "the art and science of helping adults learn" (Knowles, 1984, p. 6). Knowles' andragogical model was originally based on the

assumptions regarding adult learners that Eduard Lindeman wrote about in 1926. These assumptions are considered to be the very foundation on which adult learning theory has been built. They are:

1) Adults are motivated to learn as they experience needs and interests that learning will satisfy;

2) Adults' orientation to learning is life-centered.

3) Experience is the richest resource for adults' learning.

4) Adults have a deep need to be self-directing.

5) Individual differences among people increase with age (Lindeman, 1926, cited in Knowles, 1984, p. 31).

Using Lindeman's work as a foundation, Knowles based the andragogical model on several assumptions which are outlined in Table 1.

Another assumption of the andragogical model is concerned with the role of the teacher. The facilitator - - as the teacher is called in this model - - wears two hats. First, he or she is the designer and manager of processes and procedures that aid the acquisition of content by the learners, and second, he or she is a content resource person. One of the principal responsibilities of the andragogue is to have knowledge of all the information, resources, experts, in the community and link the learners with them (Knowles, 1984).

Table 1

Assumptions of the Andragogical Model

Assumption	Explanation
The need to know	Adults need to know why they need to learn something before undertaking to learn it.
The learners' self-concept.	Adults have a self-concept of being responsible for their own decisions, for their own lives.
The role of the learners' experience.	Adults come into an educational activity with both a greater volume and a different quality of experience from youths.
Readiness to learn	Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations.
Orientation to learning	Adults are motivated to devote energy to learn something to the extent that they perceive that it will help them perform tasks or deal with problems that they confront in their life situations.
Motivation	While adults are responsive to some external motivators (better jobs, promotions, higher salaries), the most potent motivators are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life, etc.).

(Knowles, 1984, p. 59)

Andragogy in Action

Knowles has put the andragogical model into action in order to create an optimal learning setting for adults. This andragogical process design contains seven elements. The first element in this design is that of climate setting, which includes the physical setting as well as psychological climate. The psychological climate needs to take into account mutual respect, collaborativeness, mutual trust, supportiveness, openness, authenticity, pleasure, and humanness.

The second element of the andragogical process design is that of involving the learners in mutual planning. Mutual planning creates a "buy-in mentality." If a learner has planned in partnership with the facilitator there will be a commitment to the plan on the part of the learner.

A third element is having the learners become involved in diagnosing their own needs for learning. This entails understanding and diagnosing their felt needs versus what society or their organization has ascribed for them.

A fourth element is that of formulating their learning objectives. This would involve the learners coming up with a plan and objectives for their learning needs. Useful with this element is the implementation of learning contracts.

A fifth element which is linked to learning objectives is involving the learners in designing their learning plans. This would entail reviewing resources and putting them in

place to arrive at learning objectives.

A sixth element is to help learners carry out their learning plans.

And finally, the seventh element brings the learners to the evaluation stage of their learning plan. Did they accomplish what they set out to? (Knowles, 1984).

When designing adult education programs, the consideration of the above elements will facilitate adult education. Many of the design elements focus on the learners becoming aware and involved in their learning. This will ultimately foster self-direction.

Self-Directed Learning

An early definition of self-directed learning is provided by Knowles (1975) "a process in which individuals take the initiative without the help of others in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes." He further explains that "self-directed learning is the goal of andragogy" (Knowles, 1975, p. 18).

Philip Candy (1990) illustrates the various degrees of learner self-direction through the model of the Learner-Control continuum. On this continuum, adult education progresses from complete teacher-control to total learner control. An example of total learner control is described by Candy (1990) as the independent study. There is some

concern that there is an expectation that adults achieving learner control or autonomy are autonomous in all situations. "No one ever becomes fully self-directed in any final sense, but in certain circumstances, or at certain times, people may behave more autonomously than at others" (Candy, 1990, p. 300).

Adult education should strive to assist learners to attain total learner control or self-direction in the learning situation they are involved in. There are several strategies to help a learner start down the path of self-direction. One strategy is to provide opportunities for self-direction. "If we want students who will be capable of making autonomous judgements, we must provide a learning environment in which they are encouraged to make autonomous judgements" (Dittman, 1976, as cited in Candy, 1990, p. 319).

Another strategy that can be used to foster self-directed learning is to increase question-asking by the learners, which is also closely associated with the strategy of developing critical thinking skills. By asking questions and developing critical thought processes "learners are not simply accepting responsibility for the external features of their own education but undertaking learning effectively in new and unfamiliar domains (Candy, 1990, p. 331).

The term critical thinking has theorists grappling with its exact meaning and definition, and this confusion is

reflected as follows: "the essence of critical thinking has been seen as reflective scepticism, applying standards of reason to arguments or merely understanding what another person is thinking" (Furedy & Furedy, 1985, as cited in Candy, 1990, p. 329). Perhaps the definition is not as important as how to foster critical thinking in the practice of adult education. Brookfield (1987) offers several strategies for the development of critical thinking: Creating a supportive social climate, listening and watching attentively for verbal and nonverbal cues in order to pose critical questions; sensitively challenging old modes of thought and especially unqualified assertions; reflecting back to learners their attitudes, rationalizations, and habitual ways of thinking and acting so that they can see themselves from a different perspective; and providing an opportunity for reflective evaluation or stock-taking in the process of critical thinking (Brookfield, 1987).

The strategies of fostering critical thinking, question asking, and creating a climate for autonomy are all used to foster self-direction in adult learners.

Grow (1991) has a similar concept of self-direction, and illustrates this by the Staged Self-Directed Learning Model. This model proposes, much like Candy's model of the Learner-Control Continuum, that learners advance through stages of increasing self-direction. According to Grow (1991), the teacher's role in this process is to help the

student develop to the next stage of his/her self-direction.

Stage 1 of Grow's (1991) model represents learners of low self-direction. These are the dependent learners needing an authority figure, who gives them step-by-step directions on what, how and when to act. This is the stage where the learning is teacher-centered. This is a stage that we all have experience with: "all learners of whatever stage may become temporarily dependent in the face of new topics" (Grow, 1991, p. 129).

Stage 2 represents the learners of moderate self-direction. They can be interested in the subject, but are not very knowledgeable about it. They will do assignments if they can see the purpose behind it. This is an optimal stage for preparing the learners for self-direction, such as goal setting.

Stage 3 represents the learners of intermediate self-direction. Learners are knowledgeable about the subject matter and have skills. They also see themselves as participants in their own education. The learner at this stage is on the edge of self-direction. They develop critical thinking skills, value their insights and experiences and want respect for what they can do. They still want to be involved with a teacher. At this stage the teacher can offer tools, methods and techniques for exploring the subject. Introducing interim goals and evaluation is possible at this stage.

Stage 4 represents the learners of high self-direction. These are the learners that set their own goals and standards, with or without help from experts. These learners strive in an environment of autonomy. However, these learners will not completely do away with the advice from teachers. "There are certain skills and other bodies of knowledge which are best and most easily mastered under the tutelage of an expert" (Candy, 1977, as cited in Grow, 1991, p. 134).

Competency Theory

Another area for educators of adults to consider is the competency theory, which assumes that people naturally strive for effective interactions with their world. People have an innate need to be competent, effective, and self-determining (Wlodkowski, 1985).

> Because awareness of competence is such a powerful influence on human behaviour, adults who are learning and can feel an actual sense of progress and real accomplishment are usually well motivated to continue their efforts in a similar direction (Knox, 1977, as cited in Wlodkowski, 1985, p. 55).

When people have a sense of how well they can put into practice what they have learned, feelings of competence will occur and, as stated above, this can have a profound influence on behaviour. In other words, success breeds success. Competency is yet another area that educators of

adults need to focus on in order to foster self-direction in learners.

Learning Style

Kolb's (1984) Learning Style Inventory was used in this research to determine each participant's learning style. Learning style refers to the individual's preferred ways of grasping and transforming information. Kolb (1984) used experiential learning theory to develop the Learning Style Inventory. Learners acquire knowledge through a process which involves a cycle requiring four different kinds of abilities: concrete experience, reflective observation, abstract conceptualization and active experimentation. Kolb suggests that all four abilities must be present in order for learning to occur in its complete form. This cycle of learning is explained further:

> The cycle begins with the learner's personal involvement in a specific experience. The learner reflects on this experience from many viewpoints, seeking to find its meaning. Out of this reflection the learner draws logical conclusions (abstract conceptualization) and may add to his or her own conclusions the theoretical constructs of others. These conclusions and constructs guide decisions and actions (active experimentation) that lead to new

concrete experiences. (Svinicki & Dixon, 1990, p. 141).

"The theory of experiential learning maintains that learning is a process involving the resolution of dialectical conflicts between opposing modes of dealing with the world - - action and reflection versus concreteness and abstraction" (Kolb, 1981, p. 290).

As Kolb states, these opposing modes are placed in two dimensions. One dimension places concrete experience at one end and abstract conceptualization at the other end. The other dimension places reflective observation on one side and active experimentation at the opposite end. "The learner tends to emphasize one aspect of each of the two dimensions, which, when combined, yield the individual's learning style" (DeCoux, 1990, p. 202).

The four basic learning modes are explained as follows: Concrete experience focuses on being personally involved in experiences and dealing with immediate human situations.

Reflective observation is all about observing. This orientation would lead to observing others and learning from that process or making observations about our own experiences in the learning environment.

Abstract conceptualization focuses on using logic, ideas, and concepts to explain the observations about the world around us.

Active experimentation focuses on actively influencing people and changing situations. It also uses the theories and concepts we have acquired to solve problems and make decisions (Kolb, 1984).

There are four different learning styles in Kolb's model. These are: accommodator, diverger, converger and assimilator. Each learning style has been described by Kolb as having very different characteristics of learning. Characteristics of the four learning styles are:

> The Converger's dominant learning abilities are abstract conceptualization and active experimentation. This person's greatest strength is the practical application of ideas.
>
> Divergers are individuals who have the opposite learning strengths of convergers. The diverger is best at concrete and reflective observation.
>
> The Assimilator's dominant learning abilities are abstract conceptualization and reflective observation. This person's greatest strength is in the ability to create theoretical models; the person excels in inductive reasoning and in assimilating disparate observations into an integrated explanation.
>
> Accomodators have the opposite learning strengths of the assimilator and are best at concrete experience and active experiments, and being involved in new experiences. (Kolb, 1984, p. 77)

The Learning Style Inventory has been designed and used to measure an individual's preference for a learning style. It consists of a set of 12 simple sentence-completion items. For each statement the respondent must rank four endings to best describe his or her learning style. Each of the four sentence endings corresponds to one of Kolb's four learning modes, which are concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). The Learning Style Inventory measures an individual's relative emphasis on these four learning modes, plus two combination scores that indicate the extent to which an individual emphasizes abstractness over concreteness (AC-CE) and the extent to which an individual emphasizes action over reflection (AE-RO). These combination scores are plotted on a grid to determine the individual's learning style (Kolb, 1981).

Each learning style emphasizes a different mode of learning and therefore it can be assumed that each learning style will have preferred learning activities associated with it. Svinicki and Dixon (1990) have given some examples of activities that may support different aspects of the learning cycle (See Table 2).

Table 2

Instruction Activities that may Support Different Aspects of the Learning Cycle.

Learning mode	Instructional activity
Concrete Experience	Labs, observations, text reading, simulations/games, field work, trigger films, problem sets, examples
Reflective Observation	logs, journals, discussion, brainstorming, thought questions, rhetorical questions
Abstract Conceptualization	lectures, papers, model building, projects, analogies
Active Experimentation	simulations, case study, laboratory, field work projects, homework

(Svinicki & Dixon, 1990, p. 144)

Psychological Type

Psychological types are another important area of study for the teachers of adults. As Cranton (1992) states, "psychological type has influenced the world of training and education" (p. 28). "The existence of psychological type influences the way people work together in groups, solve problems, make decisions, plan their learning and generally, learn" (p. 33). Learning style and psychological type go hand-in-hand.

Jung (1971) describes this basic model for operating in the world; "This model is concerned with the movement of psychic energy and the way in which one habitually or preferentially orients oneself in the world" (Sharp, 1987, p. 13). Jung differentiates eight typological groups: two personality attitudes, extraversion and introversion, and four functions or modes of orientation; thinking, sensation, intuition and feeling - - each of which may operate in an introverted or extraverted way (Sharp, 1987). To further explain this; Jung states that "the essential function of sensation is to establish that something exists, thinking tells us what it means, feeling what its value is and intuition surmises whence it comes and whither it goes" (Jung, 1971, p. 553).

Extraversion

"In general, the extravert trusts what is received from the outside world, and is similarly disinclined to submit personal motives to critical examination" (Sharp, 1987, p. 37).

Extraverted thinking types are guided by their own intellectual conclusions which are based on external facts, objective data and generally accepted ideas. As extraverts, they focus on the objective, as thinkers, their reflection considers outer circumstance and conditions. They are logical, positive, productive, progressive and creative.

Extraverted feeling types are orientated to the outer world, and use feeling to guide their lives. The key for this type is to acclimatize themselves to the conditions, situations and values of the world. They are good at evaluating the external situations and adjusting for them. They understand and value social mores.

Extraverted sensing types are drawn to things in life that engage their physical senses. Value is placed on objects, people, and facts that create a sensation. They live life.

Extraverted intuitive types focus on the outer world and, using their intuition, they can see in their mind's eye the possibilities for people and objects. They can perceive little-known aspects of the world that other functions can not. They are constantly seeking new possibilities.

Introversion

> Introversion finds its orientation in inner, personal factors. Always he has to prove that everything he does rests on his own decisions and convictions, and never because he is influenced by anyone, or desires to please or conciliate some person or opinion. (Sharp, 1987, p. 65)

Introverted thinking types focus on the inner world and use this focus to create their own ideas, theories and insights. Traditional ideas and ideas of others do not interest them much unless it supports their ideas. This type values clarity of thought and requires solitude.

Introverted feeling types seek and hold internal images which tend to become values. They are self-contained, rarely allowing the outside world a glimpse of their feelings. They do not choose to influence, change or affect others. Instead they lend a quiet neutrality to others.

"Introverted sensing types focus on the inner world by placing their personal meaning on outer world objects. Jung describes the French Impressionist painters as introverted sensors, they reproduce internal impressions stimulated in them by a scene or a person" (Sharp, 1987, p. 80).

Introverted intuitive types' focus is on the inner world and the contents of the unconscious. This type is compelled not by outer facts but to inner images. They tend

to have little awareness of their own physical needs (Cranton & Knoop, 1994).

Summary

This exploration of the literature helped the researcher become familiar with the existing theoretical framework relating to andragogy, self-directed learning, the competency model, learning style preference, and psychological type. This theoretical exploration is important in order to gain an understanding of the participants' perceptions of their involvement in the Adult Primary Prevention program.

Knowles (1984) defines andragogy as "the art and science of helping adults learn" (p. 6). The elements of design for placing the principles of andragogy in action have implications for program design for any adult education program. Aspects of andragogy led the researcher to further explore the concept of self-directed learning which was reviewed through the works of Grow, (1991) and Candy, (1990). Understanding that adult learners can be found at different stages of self-directed learning is important for understanding the participants' perceptions of their involvement in the Adult Primary Prevention Program. The theoretical framework for Learning Style preference and Psychological Type was reviewed as well to gain further understanding of how the participants prefer to learn.

Characteristics of each psychological type will have an impact on the participants' perceptions of what they learned in the program.

CHAPTER THREE: METHODOLOGY

This chapter describes the research design, sample, data collection procedures, and data analyses for the study.

Research Design

This study is a qualitative examination of participants in the Adult Primary Prevention Program implemented by Heart Niagara Inc., a regional nonprofit agency. A qualitative approach seeks to capture what people have to say in their own words and describe their experiences in depth (Patton, 1990).

The qualitative design is naturalistic in that the researcher does not attempt to manipulate the research setting which is naturally occurring (Patton, 1990). This research method created an opportunity for me to record and understand people on their own terms.

Characteristics of Qualitative Research

The most pertinent characteristic of qualitative research is that the natural setting is the source of data and the researcher is the instrument (Bogdan & Biklen, 1992).

"Qualitative methods consist of three kinds of data collection: (1) in-depth open ended interviews; (2) direct

observation; and (3) written documents" (Patton, 1990, p. 10).

The method used in this study is the open-ended interview. The data from interviews consist of direct quotations from people about their experiences, opinions, feelings and knowledge. Quotations are also a basic source of raw data in qualitative inquiry, revealing respondents' emotions, the ways they have organized their world, their thoughts about what is happening, their experiences, and their basic perceptions (Patton, 1990).

As a researcher, I come to this study using a phenomenology perspective, which stems from the discipline of philosophy. The main question of this perspective and of this study is; "what is the structure and essence of experience of this phenomenon for these people?" (Patton, 1990, p. 88). Explained another way, the phenomenologist is concerned with understanding human behaviour from an individual's own frame of reference. The intent of this method is to study how the world is experienced (Bogdan & Taylor, 1975, in Guba, 1978).

Research Questions

This perspective led me to ask research questions focusing on the participants' perspectives. I wanted to know how the participants experienced the Adult Primary Prevention program. The following research questions were

examined in this study:

1) What are the participants' perceptions of what they learned in the Adult Primary Prevention Program?

2) Do participants' perceive that they have taken action to reduce their modifiable risk factors?

3) What are the participants' perceptions of factors that facilitated or impeded their action to reduce their modifiable risk factors?

The heuristic process of phenomenological inquiry is a highly personal process. Moustakas (1990, cited in Patton, 1990) describes five basic phases in the heuristic process of phenomenological analysis: immersion, incubation, illumination, explication and creative synthesis. Immersion is the stage of steeping oneself in all that is; of contacting the texture, tone, mood, range and content of the experience. The inquirer becomes totally involved in the experience, questioning, meditating, dialoguing, daydreaming and indwelling.

Incubation is a time of quiet contemplation where the researcher waits, allowing time for awareness, intuitive or tacit insights and understanding. This stage leads the way toward a clear and profound awareness of the experience and its meanings.

Illumination, which is expanding awareness and deepening meaning, brings a new clarity of knowing. Themes and patterns emerge, forming clusters and parallels.

In the explication phase a full unfolding of the experience occurs. Through focusing, self-dialogue, and reflection, the experience is depicted and further delineated. What emerges is a depiction of the experience and a portrayal of the individuals who participated in the study (Moustakas, 1990, cited in Patton, 1990).

Data Collection

Data triangulation, the use of a variety of data sources, was implemented in this study to provide an in-depth profile of each participant. This triangulation included four main strategies:

1) Two separate sets of physiological measurements which provide a risk measurement score for cardiovascular disease. One set of data was collected preprogram and the second set of data was collected postprogram.

2) PET Type scores - these tests were received from the participants and I scored them.

3) Learning Style preference - these tests were received from the participants and I scored them.

4) A guided interview process with each participant - these interviews were conducted from February to August, 1995. Each participant attended one interview, which was tape recorded and transcribed word-for-word.

Limitations of the Study

A limitation related to this study is produced by participant selection. The participants that agreed to be interviewed were initially asked by the Lifestyle counsellor to attend an interview. Fifteen individuals were asked to schedule an interview with me, however, only 10 attended an interview, which can be viewed as self-selection. The 10 individuals that attended the interviews were considered compliant participants in the Adult Primary Prevention Program. I did not have access to participants during their sessions with the Lifestyle counsellor, the result was limited contact with the participants and could be seen as a weakness in the research process. The qualitative data collection occurred through one interview with each participant and the transcripts of the individual interviews were not given to the participants for verification.

The Primary Prevention Program

Those individuals who were involved in the Primary Prevention Program as participants were referred to the program by their family doctor. These patients were referred due to their numerous risk factors for cardiovascular disease. Once they were enrolled in the program they were sent for blood work and other physiological tests. A copy of the results of these tests were then sent to the Lifestyle counsellor prior to the

initial meeting with the participant. At the initial visit the Lifestyle counsellor would review the physiological tests with the participant, review his/her eating habits and inquire about the participant's exercise level, and smoking habits. This process gave the Lifestyle counsellor and the participant a complete picture of the risk factors for cardiovascular disease that the participant was dealing with. The Lifestyle counsellor also gave participants a package of information that they could take home with them. This package included information about food choices, cooking methods, label reading, recipes and menus. The Lifestyle counsellor also asked each participant to keep track of their daily food intake and exercise, using a daily diary sheet. The participant would decide on the most important behaviours that they would attempt to change before the next session.

Procedure

The Lifestyle counsellor and I met to discuss her involvement in the study. She agreed to assist with my research by asking her clientele if they wished to be involved in the study. If they agreed, she handed them the consent form to be signed. Once it was signed, a copy of the letter was given to the participant and the original was kept in their file. She then gave them a package of information that I had preassembled. This package

contained: A PET test, with instructions on how to complete it; and a Learning Style Inventory, with instructions on how to complete it.

The Lifestyle counsellor asked the participants to return this completed information when they attended their next session.

The Lifestyle counsellor also collected two sets of physiological data. The first set of data came from the physiological tests that were taken just prior to the participants' first visit. These data were used to identify the risk factors that the Lifestyle counsellor could discuss with the participant. These numbers gave the Lifestyle counsellor a starting place for suggested behaviour changes that the participant could initiate. The second set of data was taken anywhere from 3 to 6 months after the initial visit with the Lifestyle counsellor to keep track of the progress of each participant in the program. The collection of the physiological numbers would have occurred with or without my research, however, I was given access to this information for the purposes of my study. After the participants completed their visits with the Lifestyle counsellor they were called to schedule interviews with me. Fifteen packages of information which included the PET Test, LSI and physiological data were handed back to me, however, five of these did not have the follow-up physiological data completed and not surprisingly, those same five participants

refused to be interviewed as part of my study. The 10 remaining participants had all completed follow-up physiological tests and agreed to be interviewed.

Each interview was scheduled to accommodate the participant's schedule and was conducted in the Heart Niagara offices in Niagara Falls, which ensured privacy, confidentiality and environmental consistency. The interviews varied in length from 20 minutes to 60 minutes.

Upon the arrival of each interviewee, I introduced myself and asked permission to audio tape the interview. I had 100 percent compliance regarding permission to tape the interviews. At the beginning of each interview, I explained that I was interviewing them as the research component of the Master of Education program at Brock University and that I wanted their views and opinions about their involvement in the Adult Primary Prevention Program. During the interview I ensured that the following questions were answered by the participants:

1) Why did you register for the Adult Primary Prevention program?

2) What happened in the Adult Primary Prevention program?

3) What was your impression or feeling about the program?

4) Tell me what you learned.

5) Have you made any changes?

6) Are you more aware of other health information?

7) Anything else you want to add regarding the Adult Primary Prevention Program?

These were not the only questions that I asked during the interview. The intent was to guide the interview to ensure that the questions listed above were answered, but I did respond to the participants in a conversational mode. My goal was to make them feel at ease by responding to points they would raise, often asking for clarification or paraphrasing their responses. Often the majority of the seven questions I wanted answers to were answered during their response to the questions "what happened in the program?" and "what did you learn?" The conversation usually did not adhere strictly to comments about the Adult Primary Prevention program. The participants wanted to add issues that were important to them, which were often comments about their jobs, family, risk factors, other medical conditions, encounters with the medical system, barriers to adopting a healthy lifestyle, etc. The additional information produced by this conversational style added to the richness of the data and often underscored aspects of their experiences in the program. I ended each interview by giving them their results on the PET test and the Learning Style Inventory. I explained each result and also gave them explanatory notes that they could take away and read.

Organization of the Data

The first step for the inquirer is to figure out what things fit together. Guba terms this as convergence and explains: "somehow the naturalistic inquirer must derive a set of units or categories within which he will classify and interpret observed outputs" (Guba, 1978, p. 43).

Categories, once established, are checked against two criteria, internal homogeneity and external heterogeneity. Internal homogeneity concerns the extent to which data that belong in a particular category hold together in a meaningful way. In other words are the items in a category logically related? External heterogeneity refers to the differences among categories - are they bold and clear? (Guba, 1978).

Data Analysis

As mentioned previously, each interview was recorded with the permission of the interviewee. I then engaged in the heuristic process of phenomenological inquiry by listening to each tape on numerous occasions. To assist the process, each audio tape was transcribed. Each transcript was labelled with the participant's name, learning style, PET, date and time of interview. I then read these transcripts to become more familiar with the participants and their experiences in the Adult Primary Prevention Program. Only after immersing myself in the transcripts and

audio tapes, allowing a period of incubation, allowing time for patterns and themes to become illuminated, did the full experience of the participants come alive. To identify key themes I highlighted the transcripts, using different colours for each theme. When a common theme became evident in all of the transcripts, the participants' comments were copied from their computer transcript and pasted into a computer file titled with that particular theme. This created theme pages, which listed the participant and the interview excerpts that related to that particular theme. At the same time the original transcript for each participant remained intact. In this way I could view all of the comments that were made by all participants under one theme area and yet still be able to go back to the each participants' complete transcript.

Reliability and Validity of Test Instruments

Although the test instruments used in this study provided quantitative data, these data were used to provide a deeper understanding of the participants rather than being used for a quantitative research paradigm.

In the document Learning Style Inventory, 1985 the technical specifications were outlined for the Learning Style Inventory.

> The form of the inventory is determined by three design objectives. First, the test is brief and

> straightforward, so that in addition to research uses, it can be used in discussing the learning process with the individuals and providing feedback. Second, the test is constructed in such a way that individuals respond to it somewhat as they would respond to a learning situation: it requires them to resolve the tensions between the abstract-concrete and active-reflective orientations. For this reason, the LSI format requires respondents to rank-order their preferences. Third, and most obviously, it was hoped that the measures of learning styles would predict behaviour in a way consistent with the theory of experiential learning (McBer & Company, 1985, p. 3).

The reliability of the Learning Style Inventory, 1985 was stated in the technical manual (McBer & Company, 1985) as follows:

> The four basic scales and two combination scores all show very good internal reliability as measured by Cronbach's a (n=268). The combination scores show almost perfect additivity (1.0) as measured by Tukey's test (p. 4).

Internal validity refers to the extent of control over extraneous variables (Schumacher & McMillan, 1993). In the LSI technical manual (McBer & Company, 1985), it states

> "that standardized percentile scores were based on a sample of 1,446 adults between the ages of 18 and 60.

> The sample of 638 men and 801 women is ethnically diverse and represents a wide range of career fields. The average education of members of the samples is two years of college (p. 5).

External validity refers to the extent that the test results can be generalized to the general population and other settings (Schumacher & McMillan, 1993). External validity of the Learning Style Inventory has been demonstrated by the positive relationship between learning styles and career field of study. (McBer & Company, 1985, p. 8)

The PET Type Check instrument has three components: empirical, interpretive and critical. These components are further described as follows:

> The empirical component of the PET Type Check consists of 80 items, rated on a five-point scale, which are then categorized into 8 psychological types. The analysis of individual type profiles constitutes the interpretive portion of the procedure. A collaborative process of questioning the profile and of developing a strategy for growth and change between participant and facilitator forms the critical component. (Cranton & Knoop, 1995, p. i)

The first two components of the PET Type Check, empirical and interpretive, will be used for the purposes of this study. The Adult Primary Prevention Program will

incorporate discussion of the PET Type Check results with each participant and therefore will include the critical component.

The PET Type Check has been reported by the authors, Cranton and Knoop (1995) to have acceptable reliability and validity.

> The PET Type Check has been given to over 2000 individuals. Results indicated that the empirical portion of the procedure had acceptable reliability and validity. Based on feedback from participants, the interpretive component appeared to be satisfactory, dependable and trustworthy. The critical component also seemed to be valued and appreciated by individual participants. (p. i)

An audit trail is also available for review which consists of:

a) Raw data - tapes of interviews, transcripts of interview tapes, copies of category pages.

b) Test scores - copies of each participant's PET and LSI scores, copies of explanations of each PET and LSI which were given to the participants.

c) A copy of the correspondence with the ethics committee of Brock University

d) Physiological data for each participant.

Summary

Ten participants of the Adult Primary Prevention program were interviewed to determine their perceptions of what happened in the program, what they learned from the program, and behaviour changes they made. Each interview was taped, transcribed and reviewed. PET Type and Learning Style inventory tests were administered to each participant in order to identify the participant's learning style preference and psychological type. Preprogram and postprogram physiological tests were obtained to gain a better understanding of the individuals' risk factors and attempts at behaviour change.

CHAPTER FOUR: RESEARCH FINDINGS

This chapter describes the themes which emerged from the qualitative interview transcripts. In order to help the reader gain a better understanding of the participants, I have included a synthesis of each participant's interview. Fictitious names were given to each participant to ensure confidentiality. Each participant was referred to the Adult Primary Prevention Program by his/her family physician and each of them had one-on-one counselling sessions with the same Lifestyle counsellor.

Participant Profiles

Andrea

Andrea is a 30-year-old female who lives at home with her mother and father. Andrea has a job but did not mention whether it was full-time or part-time. Her only comment about her job was that she was on her feet all day. Her risk factors included elevated cholesterol, weight, low exercise level, family history and diet. Andrea's comments about her risk factors:

> My doctor discovered high cholesterol and recommended the program when I went for my physical. Everything was up and I was on the hormone pill and she thought that might have been it. I had to lose weight too and I just couldn't stick with it. I wasn't feeling good either and I knew it was my diet, fast foods and stuff. My

cholesterol went up to 28 when I was on the Accutain and they called and said stop everything. So, it's high but you don't stop to think about it. My doctor was concerned so I know I should be concerned. It was good to see my numbers written down.

Andrea has become an informed consumer and has become more aware of food, food preparation and food ingredients. She now reads labels and has made a conscious choice to cut down on her fast food intake. She stated, "I used to work next door to the KFC and I'd have Kentucky Fried Chicken three times a week, but now, I had it three months ago and it made me feel awful afterwards." Andrea explained the other changes she has tried to make in her diet: "I don't eat out as much, I'm eating more salads, more vegetables, I'm reading the labels."

Andrea has started exercising with a friend in her home using an exercise video. She stated: "I just hate the idea of doing it [exercise] by myself. It's done and over with and seems faster with a friend. We goof around and talk and stuff."

Andrea felt the lifestyle counsellor was a great help due to her constant encouragement, support and non-judgemental attitude. Andrea liked the repeat one-on-one sessions with the Lifestyle counsellor because she needed the suggestions for behaviour change. She stated:

Going back and seeing her once a month, I need that, you

> know, you're doing this good and that good. She has given me a lot of hints about what to do. She's very informative and doesn't say you're doing this wrong or that wrong. Personally, I like a person to talk to and get feedback from.

Andrea's previous belief was that she was either on a diet or off a diet, now she realizes the value of moderation. She stated, "Of course everyone wants to lose 50 pounds overnight, but I know that it is slow, as long as I'm doing something it is better than doing nothing." She had tried another program before but found it too regimented. As she stated

> I was on Weight Watchers a few times and it was measure, measure, measure. When it's too regimented like that it's not fun and you don't want to be like that all of the time. It's OK to have a chocolate bar once in awhile, but not every day.

Andrea's 3-month physiological tests showed a decrease in the following areas; blood pressure, cholesterol and fasting blood sugar. Andrea's weight and body mass index remained the same.

Bret

Bret is a 40-year-old male who is presently on a disability allowance, but has had past work as a store clerk, construction worker and truck driver. Bret's risk

factors include elevated cholesterol levels, low activity level, smoking, diet and a strong family history. Bret mentioned that he started smoking when he was 12 and that everyone in his family smokes except his mother. His father, brother and mother all have heart problems, including heart murmurs in both his father and brother. Bret does not feel ready to quit smoking: "If I want a cigarette, nothing in the world is going to stop me." Bret comments about his risk factors:

> Well first of all I went into the emergency dept. because I was experiencing chest pain. I went to my doctor for a complete physical about a week later, I had a lot of risk factors for heart disease and that's when he recommended me to Debra. I was disappointed when I had the cholesterol test that Debra wanted me to have. My cholesterol was even higher after I was on the diet. I was under the impression that if I changed my diet I'd get instant results. But Debra said no, it's a gradual change.

Bret had met with the Lifestyle counsellor to discuss strategies to improve his eating habits, increase his exercise and reduce or eliminate his smoking. Regarding the one-on-one sessions he stated, "I have a phobia about being around a lot of people, I only came to the program because it was one-on-one. If it was a group I wouldn't have gone." He also mentioned that he completed his Grade 12 through

home study, "there's no way you could get me in a school." Bret learned about food and the different types he should include in his diet. He felt that is what the Lifestyle counsellor focused on with him. About his diet, Bret reported,

> I eat about two meals a day now, but like I told Debra, I'm not a breakfast person. Like this morning, I had fruit juice and water. She told me to shy away from fruit juice and to eat oranges to get fibre. I'm used to eating chips and pop at night.

He learned which foods to substitute to give him better nutrition and was made aware that eating one meal a day was not healthy. He stated:

> Debra told me don't pig out, because I eat one meal a day and she told me to eat three meals a day, and get rid of snacks. She told me to substitute peaches for junk food. That's what I did last night.

Bret mentioned that he uses cookbooks and would like a video on a supermarket safari. His response to the issue of exercise was "I can't really, I'm not one of those smiling joggers out there."

Bret felt overwhelmed by all the changes he was asked to make. Bret has made attempts to exercise by going to the mall and walking around. He was informed about his eating habits, the food substitutions, exercise and smoking. "I felt there was too much information at once. The changes

were overwhelming." Bret was told by his doctors that he is his own worst enemy when it comes to smoking. Bret's parting comment was "For me it's just do it, I've got all the information". Bret admitted to being very worried about his health as he stated; "For the last year I've been worried about my heart, will the doctor operate on me, I was worried about surgery." After 6 months Bret had his physiological tests taken which showed that his weight remained the same, and his cholesterol level was elevated.

Kirt

Kirt is a 46-year-old male who lives alone, but has a girlfriend who visits on the weekends. Kirt is employed in a local factory, although his work has been changed to office work due to his health problems. Kirt smokes a pack of cigarettes a day and is too tired after his working day to do much exercise. He stated:

> I'm not on shift work yet, I have problems with my legs, it's not that easy. I'm in the office because of my legs. They don't want me to walk around to much in case something happens. You have to wear construction boots and for eight hours, geeze, I'm not 20 years old anymore.

His risk factors included: elevated blood pressure, elevated cholesterol, elevated weight, diet, smoking and lack of exercise. Kirt's comments about his risk factors,

"I can't remember about numbers- -oh yeah they told me my numbers- -I can't remember. My doctor told me to go and get tested every three months, but we don't know why the numbers have come down." Kirt's blood pressure, cholesterol level and triglycerides all came down in a 3-month period.

The Lifestyle counsellor reviewed Kirt's diet with him, giving him several suggestions for improving his diet. Kirt mentioned that there were some good ideas in the black binder he received as part of the program, like the menus. Kirt made a comment about the information, "Oh yes, you're not supposed to do this, you're not supposed to do that. It's easy to say, but not so easy to do. I can't eat breakfast, I don't care what she says." He also liked the one-on-one counselling, but stated, "it's always the same thing and it goes in one ear and out the other one." Kirt commented about his weekly meals, "I make a large meal and then eat it all week. I like chili and soups, but then I have to eat it for four days. Ahhh!" Kirt commented about having his girlfriend visit him on weekends: "it's a lot better with two people, you can decide what you are going to eat." He also commented that his girlfriend also learned about the food changes suggested by the Lifestyle counsellor.

Kirt really saw his health as a means to an end. He stated: "as long as I get to work every day that's the main thing. We have to work to eat." Kirt gave the impression

that he only half listened to all of the advice given by the Lifestyle counsellor and only put what he wanted into practice. He stated: "If it works, it works, if not, hey... at least I tried it." Kirt tried to make some changes, he indicated that he eats more chicken and now makes lower fat choices when shopping for milk products. Three months after Kirt's first session with the Lifestyle counsellor, he had physiological tests done, which indicated a reduction in blood pressure, cholesterol and triglycerides. However, his comments to the lower test results were: "we don't know why the numbers have come down."

Kora

Kora is a 26-year-old female who is married. Her risk factors included: elevated cholesterol, lack of exercise, weight and diet. Kora's comments about her risk factors:

> I had high cholesterol, not no more because it was down. Debra explained cholesterol and stuff like that in foods. Hidden fats and stuff. Then on the third appointment I had already had my blood work and my cholesterol was down.

Kora reported that she and the Lifestyle counsellor discussed her diet and she was given a lot of information. She stated; "She explained everything and she gave me a bunch of books to read about food and fat. The leaner cuts

of meat, what to buy and what to look for." The focus was on reducing the fat content in her diet and she learned to reduce this by reading labels, charting what she ate, and replacing high fat foods with lower fat choices. Kora stated:

> Yes the first time I was there I reviewed my diet with Debra, she laid out the diet, asked me questions and then gave me a record sheet to fill out on a weekly basis to chart what I was eating every day. When she looked at it I had definitely changed the way I was eating. I never paid attention to labels before, like in cookies, just to read the label and see how much fat there is.

Kora commented about the sessions: "She seemed like she really cared, she seemed genuine in what she was telling me, so I believed her." Kora also mentioned that without the initial repeat visits she would not have stuck with the program. She said, "you can fool yourself, but you can't fool someone else." Kora received conflicting feedback from her family. Her in-laws told her not to be concerned about her cholesterol, while her sister said she should be very concerned about it. Kora's comment on the issue was: "If my cholesterol is high now, goodness what will it be when I'm older? I might not even be here." Kora commented about the Lifestyle counsellor:

> I don't know if I would have taken it so seriously if

> someone just pushed numbers at me, she seemed like she was really genuine and like she really cared. If I had someone else who didn't have that quality I don't think I would have got the results that I did.

Kora also stated how her view of healthy eating has changed; "I would eat at work and say well I'm not supposed to have this. Now I say things to other people who are eating badly at work." Kora has also been reading health information on her own; "I read an article about ice cream, that stated eating so much was like eating a stick of butter. Thinking about it that way makes me sick to my stomach."

Kora's physiological tests indicated a reduction in cholesterol levels and slight reduction in body mass index and weight.

Marci

Marci is a 61-year-old female. Her risk factors included cholesterol, weight, diet and family history. Marci is presently single, but she has a grown daughter in her 20s. Marci comments about her risk factors:

> When I first started, my readings were pretty normal, but I think there was one that was a little high. The second time I went my triglycerides were very high and then this last time I went all of my readings were excellent.

Marci made a comment about a previous risk factor: "That's another thing, I smoked for 37 years, I quit in 1987. That was through a program where I worked, but again I was ready up here (points to her head)."

Marci discussed dietary and exercise strategies with the Lifestyle counsellor. She stated: "It was mostly diet, Debra and I discussed various types of exercises as well. Like walking, but it's mostly what I'm eating." Marci already knew a great deal about food, label reading and low fat cooking from reading and watching television on her own. As Marci put it: "I've got a lot of cookbooks and a lot of information, I've got a file drawer full." She did say that the Lifestyle counsellor helped her diet by monitoring what she needed to add to her diet. "She helps me if she thinks I need more calcium or more this and that she helps find it in my diet and include more of that." Marci liked the one-on-one counselling and stated that the Lifestyle counsellor was "inspiring." It helped Marci to come in for repeat visits because she knew she would be weighed and this helped her stick with the program.

The Lifestyle counsellor and Marci also discussed exercise strategies. She stated: "Right now I have aerobic videos that my daughter and I use. The one tape I have is a combination of weight training and aerobics." Marci discussed her weight training and how much she enjoyed it. She could see the results from this type of exercise. Marci

felt the program had taught her a lifestyle; she no longer considers herself on a diet- -"it's just the way I eat from now on." Marci also mentioned that she passes on the information from the Lifestyle counsellor to her daughter and by changing her cooking she has lost 20 pounds. Marci's final comment:

> You know it is a big problem, motivation. You just have to get it in up here, your brain and know that you just have to do it. People with two jobs it's difficult. The easier you can make it for people the better because people are busy. That's why I said about the recipes to make it easy for them. The walking too, you don't have to get into this big exercise program. It's the little things that make a difference.

Marci's 6-month physiological tests showed a reduction in weight, cholesterol and fasting blood sugar.

Olga

Olga is a 49-year-old female. Olga is married and has grown children. Her risk factors included: elevated blood pressure, elevated cholesterol, lack of exercise, family history and diet. Olga commented about her risk factors: Well, he (the doctor) suggested the Adult Primary Prevention program because of my high blood pressure and family history. You don't really want to know (about the numbers) as long as you are healthy, you don't really want to know.

If you read enough about it, it's enough to scare you. I got sick in 1994 with my gallbladder they found high blood pressure then. Other than that I'm healthy. It's down now (blood pressure).

Olga met with the Lifestyle counsellor and discussed strategies for improving her diet. She learned to cook differently. She no longer fries everything; however, she mentioned that she cooks differently for her husband. Olga's eating and cooking changes have helped her lose weight and keep it off. She liked the program because she needed a program to stick to. Olga stated: "I enjoyed it, because you know what you should or shouldn't be doing." When asked if she understood the cholesterol levels she stated: "You don't really want to know as long as you are healthy." When she mentioned her blood pressure she said: "If you read enough about it, it's enough to scare you." She watched what her brother went through with heart disease and it scares her. Even though Olga mentioned how fearful she was over the information about cardiovascular disease she also mentioned that she was much more aware of health information out in the community.

Olga indicated that she would enjoy exercise in a group such as a mall walking program, but because she lives in the country it is inconvenient to get to the mall. She stated:

> I read about the mall walkers in the paper. It's just when you drive all the way to the mall just to walk

around, driving makes me tired. The group would help me, I need a schedule, if I get off of the schedule, forget it.

Most of the information that Olga received focused on the diet, she does some walking, but has not yet put the exercise strategies into place. Olga preferred the one-on-one aspect of the program. Olga reads health information in the papers and stated; "I find so many of the papers have so much about health in them. Diet, healthy eating, breast cancer."

Olga's 3-month follow-up tests indicated lower blood pressure; however she is now on medication. She also had a slight reduction in her cholesterol level and weight.

Olivia

Olivia is a 55-year-old married female. She works as a medical secretary for an opthamologist. Her risk factors included: elevated blood pressure, elevated cholesterol, low activity level, family history and diet. Olivia's comment about her risk factors:

Ah yeh, I was there in January and everything was right down. My triglycerides were right down to 1-point-something down from 2.79. I went for my physical and my blood pressure was way up high and he put me on blood pressure pills. There's quite a bit of heart disease in my family. I was overweight as well. I didn't think I

would go down that fast. In the first three months when I went back to see Debra I had lost over 14 pounds and Debra thought that was really fast. It's usually 4 pounds a month. I feel really good too, my blood pressure has gone down. When I first started, the numbers were 156 over 110. Now it's 67 over 101. I had that explained (the blood pressure numbers), the doctor explained about the bottom number. Now I go to the drug store at lunch and I can do my own. Now it's at 142 to 146 over 84 to 80. The last time I was there my good cholesterol (HDL) was lower than what they wanted it to be. They did bring it up to what it had been previously, but it was still low. She wants me to bring it up a little bit by monitoring the diet. My cholesterol was OK but it was the triglycerides mostly that were high. That speared him to get me to come here (the program). I knew about cholesterol, high blood pressure etc., plus I had put on weight last year and I figured that was part of it. Plus I was getting a lot of headaches and I thought that it was contributing to it. It was my blood pressure. Once it has come down (blood pressure), I'm supposed to keep track of it. I usually keep it (blood pressure log) with me when I do it (blood pressure test) at the drug store. He (doctor) suggested that I keep track once I was on the medication. I take my blood pressure about the same

> time every day about 12:00 or 12:30. I usually have my lunch and then I go do my blood pressure after that. After I do errands it is usually a bit higher.

After talking with the Lifestyle counsellor, Olivia took measures to cut down on fats, like meat, cheese, and butter, and she reduced her milk fat by buying 1% milk products. Olivia also changed her cooking habits. She now tries to avoid frying food and instead bakes or microwaves her meals. Her choices of food have changed; she includes more fish and chicken, and buys lower fat foods by reading labels in the grocery store and making low fat choices. When asked if she cooks for her family she said: "yes, but my daughter doesn't care for it much. Sometimes I cook stuff their way and then I cook stuff for me." She was very pleased that she has lost 29 pounds and gone down two dress sizes. Olivia attributed her weight loss to the program. She stated:

> I liked the follow-up, it made me feel better. Like how my weight went down and my inches came off, she was very good about encouraging me. I really feel good and the program helped me get down to where I should be.

Olivia felt she accomplished this by increasing her walking exercise and by low fat food choices. However, she felt these were small changes to make for such a big payoff. Regarding the program, Olivia liked the one-on-one counselling and the follow-up appointments. She stated:

"If I had a question I could ask them, [sic] when I went back." Olivia feels she can maintain these positive changes and commented:

> I read a lot more, mostly about the diet. I think I can stick to this weight because I have changed the way I cook and I'm not eating as much. I use the cookbooks for heart health, I use the two of them.

Olivia said the program made her more aware of other health information.

Olivia's 6-month follow-up physiological tests showed a decrease in blood pressure readings, weight, body mass index and cholesterol.

Reba

Reba is a 58-year-old female. Her risk factors included: elevated cholesterol, low activity level, family history and diet. Reba commented about her risk factors:

> I went down (test results) in September, it was a very very good report! Debra must have it (the report) because we were both so happy - - I said "I want a hug!" It was cholesterol, my father died of a heart attack at 52. Why did it go down (cholesterol numbers) when I was lax and didn't go down in those first few months? It's so confusing to me. But it went down so much that the doctor couldn't believe it. He had never seen anyone do that before. Then I gave blood down in Florida and they

> sent a little note that said your cholesterol is high. So you see it's gone back up again. I don't understand it. They said it was 3, but they don't count the same way in the States, but someone told me that it's 7.5, now that is really high. How can it go from really good to really high in three months? I don't believe they plan on testing me because the results were so good (this time).

Reba kept all of her information from the program in the black binder that she received as a participant in the program. Referring to the binder, she said: "Everything is all here and it's an excellent part of the program. I've got cookbooks in here and if I run into articles, I've got all kinds of information in here." Reba described her first meeting with the Lifestyle Counsellor. She and the counsellor marked down all the things that she needed to change, came up with strategies for change and, over the next two months, worked on changing them. As she stated; "here they are (binder notes) so one by one in the next two months or however long it took me to come back, I gradually did all of this." Some of the changes that Reba made were: increasing her walking exercise, eating more fish, meatless meals, eating more fibre and drinking more water. Reba had the knowledge about a healthy lifestyle before coming into the program but as she stated, "I knew I had to come back, I knew I had to get tested. It made me feel - - be good."

Reba felt the counsellor's encouragement was very valuable: "She made me feel that even if the cholesterol went up I was still doing things right. She gave me hope to keep doing it." She also used the information that was given to her in the program: "That's another thing she gave me, this super little booklet. The shopping guide, it's very good. I keep it in my purse and read it, I read it quite a lot."

Reba's 3-month follow-up physiological tests showed a slight decrease in weight and cholesterol.

Sam

Sam is a 43-year-old male. His risk factors included: smoking, elevated cholesterol, diet and low activity level. Sam comments about his risk factors:

> Originally I had high cholesterol. I felt like I was losing energy and I was. I brought it down from 7-something to 5.6 or something, then the next time it was back up, so I asked to see the dietician. The dietician at the doctor's is overloaded so then he suggested here (the Heart Niagara program). Plus now I know more about the cholesterol, about the high and the lows. I didn't know anything about it (cholesterol) really. I knew it was bad."

Sam met with the Lifestyle counsellor and discussed dietary and exercise strategies. Although Sam found the

changes difficult: "It's hard to maintain a proper diet for a guy who's on his own and working three shifts." Sam did learn to read food labels and he stated: "Don't believe everything you read on the package. It says cholesterol free it doesn't mean cholesterol free, you need to look for the saturated fats too." Sam's efforts for behaviour change focused on reducing fat in his diet. Sam now eats less meat and the meat he chooses is lower in fat. "I used to consume a Scottish diet - - bacon, eggs and fry the bread in the remaining grease, but it is totally loaded in fat."

Regarding exercise he stated: "It's hard when you are coming off of three shifts. I don't want to spend a couple of hours exercising." Sam tries to keep in shape by doing home exercises. He bought a ski machine, and exercises to Susan Powter's exercise video at home. Sam attributes his risk factors to his recent marriage separation and lack of exercise on the job. His job changed from construction which was very active to an industrial plant which is less strenuous; as Sam puts it: "My activity has dropped by about 80 percent." Sam has been unable to quit smoking and attributed this to being bored at work and being able to smoke anytime he wants to. Sam stated: "I do find when all hell breaks loose at work and you're on the go all day that I don't smoke as much, probably less than half. So I should send someone into the plant to break things so I don't smoke."

Sam felt he benefited from the program. He liked the one-on-one counselling and all of the information that he received. Regarding the information he received, Sam stated: "the knowledge is beneficial because before I would just eat anything." Sam's 3-month follow-up physiological tests indicated that his weight was reduced slightly, and his cholesterol levels were brought down. His blood pressure, although up slightly, was still in the normal range.

Saul

Saul is a 68-year-old married male. His risk factors included: elevated cholesterol, elevated blood pressure, weight, family history and diet. Saul's comments about his risk factors:

> I was trying to lose weight. Number two, I'm on blood pressure pills, but I wanted to get off them. The doctor said if I lose weight I could get off of them. The doctor said it depends on me. If I lose weight he'd take another look at it. The reason I took it all so serious is that I went to my doctor for a checkup and he said "you're on the borderline for everything, there's no trouble yet, but you're heading for trouble." When I think of all of these people with nine containers of pills sitting there and one pill, let's face it doesn't agree with another, let's face it you're going downhill

> fast. Even, just one pill I know what it does to me. It makes me feel so drowsy at times. My father had high blood pressure. I think I can get off of it (the pills). My blood pressure this winter has been better than it's ever been, say in the last 5 years. I didn't know I had high blood pressure. You go to these free clinics and you see people 20 years older than me and I'd say "I wonder what his blood pressure was?" and I'd say, "God, his was perfect," and I'd line up and they look at me like "what are you doing here?" Then they take my pressure and say "are you seeing a doctor?" and I'd say "no" and they'd say "you better go see one." I came out of there devastated. I went to see my doctor and he put me on the not too strong pills. That one year it really went up.

Saul met with the Lifestyle counsellor and reviewed his eating habits. Saul stated: "What to eat, what not to eat, I still follow it. It's a big improvement. It's a 75 percent improvement. Before I wasn't paying attention at all. Now I do!" Saul liked the follow-up appointments because he would have his weight and blood pressure checked as well as review what he ate. Saul stated:

> I was putting down exactly what I was eating. That was important because if someone asks me what I ate yesterday for breakfast I couldn't remember. This way I could look back and see how I was doing. That was a

> good thing, writing down what I ate, checking weight, repeating appointments, coming back.

Saul discovered that when he started eating less fatty, lighter meals that his drinking before supper really affected him. As a result he went from two stiff drinks each day to eliminating his alcohol. He started eating more fish, chicken, more vegetables, pastas and soups. Saul has stopped buying liquor and finds he has extra money to buy fruit and vegetables. Saul has always considered himself physically active, working in his yard and garden. Saul's wife had encouraged him to change his dietary habits but he refused to listen. As he put it:

> Yeah, my wife is really on to this thing, but I wouldn't listen to her. I'd say well that's all right for you, but I'm working hard...you use all kinds of excuses. But when a dietician tells you, hey lay off the fat it's not good for your health...You listen to two people, you listen to the dietician and you listen to yourself, but someone else trying to tell you, it's like your husband trying to teach you to drive. You've got to get a teacher.

He judged the success of the program on how he feels and Saul stated: "I don't need to read about it, I feel better- - that's how I know." Saul was proud of his progress in the program. He stated; "First of all, you've got your food under control, now you've got to get the alcohol under

control. With both under control I can say geez, I've really done something here."

Saul also appreciated the Lifestyle counsellor's approach. He stated: "She was really good, she didn't embarrass you or bawl you out. She would say if I hadn't lost any weight, you'll do better next week. She was very understanding." Saul also admitted that he would not have known how to change without having a dietician go over everything with him. "I would have wanted to change, but I wouldn't have known how."

Saul's 3-month follow-up physiological tests indicated a reduction in weight, body mass index and fasting blood sugar. However, his cholesterol level proved to be higher.

Review of the Participants' Learning Styles

The most common learning style found among the participants was that of the Assimilator. Five of the 10 participants' scores on the Learning Style Inventory indicated this preference. Those participants showing a preference for this style were: Andrea, Bret, Marci, Olivia and Sam. Characteristics of this learning style are abstract conceptualization and reflective observation. Their greatest strength is in assimilating observations into an integrated explanation. Cranton (1992) suggested that assimilators prefer reading, listening, observing, and reflecting on the information given.

The next most common learning style found among the participants was that of the Diverger. Three (Kirt, Olga and Saul) of the 10 participants' scores on the Learning Style Inventory indicated this preference. Characteristics of this learning style are concrete experience and reflective observation. Individuals preferring this style are the idea generators, generally enjoy interacting with people and focus on feelings (Cranton, 1992).

The third most common learning style found among the participants was that of the Accommodator. According to their Learning Style Inventory scores Kora and Reba showed this preference. Accommodators show a tendency towards concrete experience and active experimentation. Individuals preferring this style are adaptable and would prefer to try something hands-on rather than read about it and reflect.

The Converger learning style was not found among this group of participants.

Psychological Type

The introverted personality attitude was the most common among this group of participants. "Introversion finds its orientation in inner, personal factors" (Sharp, 1978, p. 65).

According to their PET Type tests, Bret, Marci, Kora, Olga, Sam and Kirt had this orientation. Among the introverts, there were three thinking types (Bret, Marci,

Kirt); two feeling types (Olga, Sam); and one sensing type (Kora).

Introverted thinking types focus on their own ideas, theories and insights. Other people's opinions are not of great concern to them. Conversely, they do not try to influence others with their opinions. They value clarity of thought and require solitude and prefer reading or listening and quietly reflecting (Cranton, 1992).

Introverted feeling types seek and hold internal images which tend to become values. They are self-contained, rarely allowing the outside world a glimpse of their feelings. They do not choose to influence, change or affect others. They lend a quiet neutrality. "They prefer reading or listening and do not learn well in groups" (Cranton, 1992, p. 35).

Introverted sensing type, focus on the inner world by placing their personal meaning on outer world objects. Jung (1971) describes the French Impressionist painters as introverted sensors; they reproduce internal impressions stimulated in them by a scene or a person (Sharp, 1987, p. 80). Group work is difficult for this person. He or she learns best by listening, reading, and experiencing individually (Cranton, 1992, p. 35).

Four of the 10 participants had the extraverted personality attitude. They were: Andrea, Olivia, Reba and Saul. Of these, Andrea and Reba were feeling types, Olivia

was a sensing type and Saul was an intuitive type. "Extroversion in general trusts what is received from the outside world, and is similarly disinclined to submit personal motives to critical examination" (Sharp 1987, p. 37).

Extraverted feeling types use feeling to guide their lives and are oriented to the outer world. The key for this type is to acclimatize themselves to the conditions, situations and values of the world. They are good at evaluating the external situations and adjusting for them. They understand and value social mores. They learn best by interacting with others rather than reading (Cranton, 1992).

Extraverted sensing types are drawn to things in life that engage their physical senses. Value is placed on objects, people and facts that create a sensation. They live life to the fullest. Learning is accomplished by doing (Cranton, 1992).

Extraverted Intuitive types focus on the outer world and, using their intuition, they can see in their mind's eye, the possibilities for people and objects. They can perceive little-known aspects of the world that other types can not. They are constantly seeking new possibilities. They will not last long on tasks requiring repetition or routine.

Table 3 illustrates the participants' comments that relate to aspects of their learning. Andrea has an

assimilator learning style and extraverted feeling psychological type. Andrea contrasted the Adult Primary Prevention program with the Weight Watchers program. She did not like the regimented aspect of Weight Watchers and as she stated "it's not fun."

Andrea also commented during her interview that she liked to talk to someone, to receive feedback. These comments are indicative of her psychological type. The extraverted feeling type typically learns best by interacting with others. Andrea's comments did not illustrate her assimilator learning style.

Bret has an assimilator learning style and introverted thinking psychological type. Bret felt overwhelmed by all the information and many changes that needed to be made. As an introverted thinker, he would have been thinking about all of the information and making internal judgements about it, and this takes time and solitude. It makes sense that he would feel overwhelmed by too much information. Also Bret expressed a dislike for any group activity, which fits with both his learning style and psychological type.

Individuals with this style and type would prefer reading, thinking and quiet reflection.

Table 3

Participants' Comments Regarding the Way They Learn

Name, LSI, PET	Comments
Andrea LSI Assimilator PET Extroverted Feeler	I was on Weight Watchers a few times and it was measure, measure. When it's too regimented like that it's like, it's not fun and you don't want to be like that all of the time. She exercises with a friend. It's more fun with someone else.
Bret LSI Assimilator PET Introverted Thinker	I felt there was too much information at once. A video would be ideal for me. I have always read books.
Kirt LSI Diverger PET Introverted Thinker	I don't like going by cookbooks, I'm not going to measure things out. Some people can not do that.
Kora LSI Accommodator PET Introverted Senser	...then gave me a record sheet to fill out on a weekly basis to chart what I was eating every day. When she looked at it I had definitely changed the way I was eating.
Marci LSI Assimilator PET Introverted Thinker	I've never been the type to follow a very structured program. It's really hard for me to stay on it. When I'm doing it myself I have more control, I know I can do what I want to do.
Olga LSI Diverger PET Introverted Feeler	I'm trying to change my physical activity, but of course I'm the type of person who sits and worries instead of going out and walking it off. I enjoy solitude.

(table continues)

Table 3

Participants' Comments Regarding the Way They Learn

Name, LSI, PET	Comments
Olivia LSI Assimilator PET Extraverted Senser	I read a lot more, mostly about the diet. I take my blood pressure about the same time every day. I was glad for the follow-up because in between if I had a question I could ask them [sic] when I went back. I could get clarified.
Reba LSI Accommodator PET Extroverted Feeler	One-on-one is far more my style. You know what changed me? One day my boss came out when I was eating popcorn at my desk and he said I can't believe you are doing that with a cholesterol problem. A dietician has more authority.
Sam LSI Assimilator PET Introverted Feeler	I know more about the cholesterol, about the highs and lows. I found the aerobic workout very good. (exercise video). I look after my diet and exercise then I can stay away from that stuff (drugs). I was just reading an article in the newspaper that says modern people get too many prescription drugs.
Saul LSI Diverger PET Extraverted Intuitive	I was putting down exactly what I was eating. That was important because if someone asks me what I ate yesterday for breakfast I couldn't remember. This way I could look back and see how I was doing. That was a good thing, writing down what I ate, checking weight, repeating appointments.

Kirt has a diverger learning style and introverted thinking psychological type. Like Andrea, who had a different learning style and psychological type, Kirt did not like measuring things out. Kirt did not like the cookbook method of cooking, either. As a diverger, Kirt would like to generate his own ideas, and this may be some explanation for not using a regimented menu plan. Kirt's introverted thinking type comes through loud and clear. He does not care what the Lifestyle counsellor has to say about breakfast, he refuses to add this meal to his daily routine. Other comments about only "half-listening" are also reflective of his internal values overriding external values which further illustrates his introverted thinking type.

Kora has an accommodator learning style and introverted sensing psychological type. As an accommodator, concrete experience and active experimentation would be preferences for Kora. These preferences were illustrated by her food charting activity. She actively took stock of her eating and made a record of it. Kora's comment about the ice cream article making her "sick to her stomach" is an example of the introverted senser reproducing internal impressions stimulated in them through external information (Sharp, 1978).

Marci has an assimilator learning style and introverted thinking psychological type. Marci showed a keen preference for reading, listening and reflecting on information, which

are characteristics of both her psychological type and learning style. Marci had been collecting health articles long before she entered the program. By reflecting on the program and the information received, she has concluded that she is no longer on a diet, it is just the way she eats from now on.

Olga has a diverger learning style and introverted feeling psychological type. Olga's comments about sitting and worrying can be viewed as a reflection of her psychological type. She is oriented to inner, personal factors and would rather focus in quiet solitude on the internal than go out for a walk, which would focus her on the physical or external. Olga also focused on her feelings and mentioned twice how certain information made her fearful. She is afraid of what her family went through with heart disease. As a diverger, reflective observation and concrete experience would be dominant preferences. Olga stated that she enjoyed the one-on-one sessions which could be viewed as an illustration of the diverger learning style and introverted feeling psychological type.

Olivia has an assimilator learning style and extraverted sensing psychological type. Olivia mentioned that she is now taking her blood pressure on a daily basis to monitor it. Olivia's extraverted sensing psychological type would lend itself to this type of action. Learning by doing and seeking activity that produces sensation are characteristics

of this type. Olivia also mentioned she uses a variety of cookbooks. Preferring to read is a characteristic of an assimilator learning style.

Reba has an accommodator learning style and extraverted feeling psychological type. Reba shows an inclination towards the external world and the values in it, by the value she places on others' comments. Her boss made a significant contribution to Reba's attitude change by his comments about her diet. She also valued the Lifestyle counsellor's comments for the authority attached to them. These comments can be attributed to her extraverted feeling psychological type. Reba's learning style preference is also illustrated by her comments about the actual strategies she engaged in to reach her lifestyle change goals. She made reference to the various goals as benchmarks for her active change. Reba also made mention of the black binder that was given to her by the Lifestyle counsellor to keep all of her information in. She reads, and organizes the health information that she collects.

Sam is an assimilator learning style and introverted feeling psychological type. Sam was concerned about being placed on drugs to lower his cholesterol. He had an article which he read during the interview that stated modern people get too many prescription drugs. Sam's strong desire to stay off prescription drugs stems from an internal value which was reinforced by the newspaper article. This is

characteristic of an introverted feeling type. Sam made reference to his shift work on more than one occasion as being the dictator of his lifestyle. The shift work seems to be a major obstacle to positive lifestyle changes for Sam.

Saul has a diverger learning style and extraverted intuitive psychological type. The diverger characteristic of concrete experience is reflected in Saul's remarks about charting his dietary habits and making changes as required. He made changes based on how he felt. He also mentions looking back to see how he was doing, which can be interpreted as reflective observation- -the other half of the diverger learning style. Saul was very attuned to the changes in his body. He described the negative affects his alcohol consumption was having on him and he noticed physical changes after changing his diet. His benchmark of success in the program was that he felt better. Saul would explain his changes using a variety of analogies which illustrates an aptitude for putting a variety of ideas or possibilities together. Focusing on the external and coming up with ways of expressing a variety of possibilities, illustrate the extraverted intuitive psychological type.

Table 4 summarizes some of the comments regarding what the participants liked about the Adult Primary Prevention Program. These comments were unsolicited during the interview. My questions focused on what happened in the

program, what they learned and if they had made changes. I did not ask if they liked or disliked the Lifestyle counsellor. However, 6 out of the 10 participants felt this was so important they made a direct reference to the Lifestyle counsellor and some aspect of her counselling. Whether it was encouragement, understanding, support or her caring approach, 6 (Andrea, Kora, Marci, Olivia, Reba and Saul) of the 10 participants found this very beneficial. In fact, Kora gave the Lifestyle counsellor's attitude so much credence that she stated "if I had someone else who didn't have that quality I don't think I would have got the results that I did." These comments about how they were treated by the Lifestyle counsellor harks back to Knowles model of andragogy (Knowles, 1984). In the andragogical process design, Knowles makes reference to the climate setting, indicating that this should include the physical setting as well as the psychological setting. The psychological setting should include mutual respect, collaborativeness, mutual trust, supportiveness, openness, authenticity, pleasure and humanness. As 6 of the 10 participants have indicated, the psychological setting seems to be paramount. They were very aware of how they were treated by the

Table 4

Participants' Comments Regarding Program Elements They Liked

Name, LSI, PET	Comments
Andrea LSI Assimilator PET Extroverted Feeling	Debra was really great; she suggested things, she didn't tell you - - you can't do this and you can't do that, she suggested things. You know how you go to the doctor and they say you can't do this and that and you say yeah, yeah, yeah. You don't want to be yelled at. Debra was more helpful.
Bret LSI Assimilator PET Introverted Thinking	I only came to the program because it was one-on-one. If it was a group I wouldn't have gone.
Kirt LSI Diverger PET Introverted Thinking	One-on-one counselling is the best. You don't forget things.
Kora LSI Accommodator PET Introverted Sensing	She seemed like she really cared, so I better care. She seemed really genuine in what she was telling you, so I believed her. The doctor just says oh you better do this, but she seemed concerned. She was real personable, seemed like she cared, instead of, oh this is my job.
Marci LSI Assimilator PET Introverted Thinking	I think the difference was Debra herself, she's inspiring. Knowing I had to go in every week and get weighed, this made me think, I'm going to make that scale go down. I prefer the one-on-one counselling.

(table continues)

Table 4

Participants' Comments Regarding Program Elements They Liked

Name, LSI, PET	Comments
Olga LSI Diverger PET Introverted Feeling	I enjoyed it because you know what you should or shouldn't be doing. When asked what she preferred she stated; "one-on-one counselling."
Olivia LSI Assimilator PET Extraverted Sensing	Yes, I liked the follow-up; it made me feel better. Like how my weight went down and my inches came off. She was very good about encouraging me.
Reba LSI Accommodator PET Extraverted Feeling	The diet was the key thing. I knew what I had to do before, but I'd say, oh next week. When you have to come back for an appointment you start being good right away. She made me feel that even if the cholesterol went up I was still doing things right. She gave me hope to keep doing it.
Sam LSI Assimilator PET Introverted Feeling	I preferred one-on-one counselling. The knowledge is beneficial because before I'd just eat anything.
Saul LSI Diverger PET Extraverted Intuitive	The minute you don't have to report to anyone you fall off of it. So it's important to come back. You know you have to report. Debra was really good, she didn't embarrass you or bawl you out. She would say if I hadn't lost any weight - - you'll do better next week, it's understandable. She was very understanding.

Table 5

Participants' Comments Regarding Self Directed Learning

Name	Comments
Andrea	I don't read the paper that much, but at work we have books and magazines and stuff like that and now I read the health page and I never used to. I'm more conscious, I'm always looking at the labels now. It's my choice, it's what I'm doing and what fits me. With Weight Watchers you had so many rules I'd always feel - - oh I blew it.
Bret	I'm mostly self-taught. I've always read books. I got [sic] my Grade 12 now. I did it through the Independent Learning Centre, a home study program. A video would be ideal for me.
Kirt	I try to squeeze a little more in here and there, if it works it works if not hey....at least I tried it (referring to behaviour change).
Kora	I read an article about ice cream that stated that eating so much was like eating a stick of butter.
Marci	I've got a lot of cookbooks and a lot of information, like I've got a file drawer full.
Olga	There are so many books you can read about what you are supposed to do. I find so many of the papers have so much about health in them.
Olivia	Yes, I read a lot more of that now (health info.). I take my blood pressure about the same time every day. I use the cookbooks for heart health.

(table continues)

Table 5

Participants' Comments Regarding Self Directed Learning

Name	Comments
Reba	Everything is all here and it's an excellent part of the program. I've got cookbooks in here, if I run into articles, I've got all kinds of information in here (refers to binder). I didn't want to go on drugs.
Sam	I have an aerobic tape that I do in private. I bought one of those ski machines. Don't believe everything you read on the package. If it says cholesterol free it doesn't mean cholesterol free. You need to look for the saturated fats too.
Saul	I kept score of what I ate everyday. You've got your food under control, now you've got to get the alcohol under control, with both under control I can say geez, I've really done something here.

Saul described the fourth element in Knowles' andragogical process design when he outlined his learning objectives. He commented about charting his food intake every day and that his goal was getting his food and alcohol consumption under control. Saul was also very proud of his accomplishments, that he had got his alcohol and food "under control". This is an example of success breeding success which was described by Wlodkowski (1985) as the competency model. When adult learners start becoming competent regarding what they have learned, they gain confidence and continue with their learning. In Saul's case this would be his health behaviour changes.

Kirt describes his self-direction in the form of behaviour change. He would try to make changes and see if they worked.

Sam also described his self-direction in the form of behaviour change, but he also put some financial resources behind it by buying a ski machine for exercising. Sam also exhibited critical thinking when he commented that "you can't believe everything you read." Brookfield (1987) concluded that critical thinking is a step towards self-directed learning and by fostering critical thinking, a facilitator is fostering self-direction in the learner.

One of the highly self-directed comments came from Bret who described his effort in self-direction by getting his Grade 12 through correspondence courses. Learners with this

high level of self-direction were described by Grow (1991) as those that set their own goals and standards, with or without help from experts.

The participants were asked at the beginning of the interview why they registered for the Adult Primary Prevention program and all responded that they had been referred by their doctors. Initially this does not seem to illustrate self-direction on the part of the program participants. The reason that they enrolled in the program is basically because they were told to by their physicians. In addition to that, two of the participants, Reba and Saul, also referred to the authority of the dietician and that authority made them pay attention to the message. However, Grow (1991) suggests that all learners become dependent in the face of a new topic, or in this case a new program, which the participants may not have known existed. Their comments in Table 5 does show some effort to direct their learning and make decisions for themselves about the information they would read and gather or the behaviours they would experiment with. This has support in Candy's (1990) Learner-Control continuum which progresses from complete teacher-control to total learner control. The participants have made some statements that put each on the continuum progressing away from total teacher-control or, in this case, doctor-control.

Table 6 illustrates the participants' comments made regarding the reasons for not being able to make behaviour changes. Four out of the 10 participants made comments about why they could not change. Three of the four were male participants. As mentioned earlier in this chapter, this may relate to learning style and psychological type. Bret was disillusioned with the program, thinking that his cholesterol would go down immediately. He also felt there was too much information at once. Bret is an assimilator learning style and introverted thinking type. Bret would have been trying to think about all of the information and make internal value judgements about it and this takes time and solitude. It makes sense that he would feel overwhelmed by too much information.

Kirt stated he only half-listened to the information and he was not going to make certain behaviour changes and he did not care what the Lifestyle counsellor said. Kirt's Learning Style was that of diverger and his psychological type was introverted thinking. Introverted thinking types value their own opinions and are not concerned with others' opinions. This seems to be reflected in his statements about why he could not or would not change and his attitude towards the information.

Olga admitted that she worries instead of exercising. Olga's learning style was that of diverger and her psychological type was that of introverted feeling. As an

Table 6

Participants' Comments Regarding Reasons for Not Changing

Name	Comments
Andrea	N/A
Bret	Exercise, well, I can't really. Like I told Debra, I'm not one of those smiling joggers out there. I felt there was too much information. I was disappointed...my cholesterol was even higher after I was on the diet.
Kirt	I can't eat breakfast, I don't care what she says. I'm not that interested, sometimes I listen with half an ear. It's always the same things and it goes in one ear and out the other one (referring to follow-up appts.).
Kora	N/A
Marci	N/A
Olga	I'm trying to change my physical activity, but of course I'm the type of person who sits and worries instead of going out and walking it off.
Olivia	N/A
Reba	N/A
Sam	Smoking is still there. When I got separated, [sic] I started eating bad. Eggs for supper or whatever was easy. Cans of this cans of that. I've been trying to exercise, but it's hard when you are coming off 3 shifts. It's hard to eat for one.
Saul	N/A

N/A: these participants did not make comments regarding reasons for not changing.

introverted type, Olga focuses her energy on the internal. She admits to worrying, an internal process, rather than focusing on the external world and putting her energy into exercising.

Sam reported that he is still smoking, that he started eating poorly when his marriage dissolved and he has difficulty exercising when on shift work. Sam's learning style is that of assimilator and his psychological type is introverted feeling. Sam's comments regarding his inability to change his behaviour seem to stem primarily from lifestyle issues rather than on learning style and psychological type. However, another interpretation could be that Sam did not feel any pleasure eating alone, so he chose to make it fast and painless. He valued the internal feelings over the external need to eat properly.

It is interesting to note that of the four participants who admitted to not changing their behaviour, two learning styles and two psychological types were represented. Table 6 illustrates, that although in different combinations, the diverger and assimilator learning styles were represented, as well as the introverted feeling and introverted thinking psychological type. This is not to say that the other six participants did not have areas that they could not or would not change, it only illustrates that these four reported not being able or not wanting to change their behaviours in the interview.

Participants' Perceptions of What They Learned

One of the findings that I discovered from the interviews and subsequent analysis was the participants awareness of their risk factors. Each of the 10 participants made some comment about his/her risk factors, which usually occurred through some comment about his/her physiological numbers. The probable explanation for this is the way the program was set up. The Lifestyle counsellor received the physiological data to review before each initial visit. She did this in order to see where the problem areas were for each participant and she would review the numbers with each participant. The only individual who referred in passing to his "numbers" was Kirt, who stated he could not remember them. However, Kirt was aware that his numbers were high and that they had also come down. Kirt did not know why his numbers had changed, he only knew that they had changed.

The awareness of their risk factors and physiological numbers relates back to Knowles' andragogical model. One of the assumptions is that adults need to know why they need to learn something. Risk factor knowledge and awareness of elevated physiological numbers underscores the reasons for the education and the reasons behaviour change must occur.

Another area that stood out was the participants' awareness of their dietary habits. When asked what they had learned in the program, all 10 participants mentioned food

and their eating habits. There is a basis for this knowledge and awareness. The program's focus was on raising awareness about food choices, menus, cooking methods and label reading. Each participant had their diets reviewed and were given a package of information to take home and use as a resource.

Participants' Behaviour Change

The awareness of risk factors, physiological numbers and dietary habits, all seem to play a role in the behaviour change noted by the participants. Behaviour change was reported by all 10 participants and is illustrated in Table 7. In Table 7 most of the behaviour change focused on food. Exercise was also mentioned by 8 of the 10 participants. Kirt and Kora did not mention exercise as an area that they improved.

It would appear that the Adult Primary Prevention program accomplished its health education mandate. Health education, as mentioned in chapter 2, seeks to induce positive health behaviour changes and all 10 participants reported some behaviour change. However, those that reported being smokers at the beginning of the program, Bret, Kirt and Sam, were still smoking at the time of the interview.

Table 7

Participants' Comments Regarding Behaviour Change

Name	Comments
Andrea	I don't eat out as much, I'm eating more salads, more vegetables. I'm reading the labels (exercises to a video).
Bret	I eat about two meals a day now. She told me to substitute peaches for junk food. That's what I did last night. Exercise consists of mall walking.
Kirt	I eat more chicken. Oh yeah, I go to 1% milk.
Kora	I eat those Bran buds now. I just started eating better. I buy the leanest cuts now.
Marci	One of the most important things has been walking and doing whatever I can. I also got into weight training. I don't think I eat 10 to 15 grams of fat a day.
Olga	I used to fry everything. The diet has certainly kept my weight down. Mostly walking for exercise.
Olivia	Just more or less cut out eating between meals and watch what I eat. I don't fry anymore, I bake, and microwave instead. I eat more fish and chicken. I read labels now. I read a lot more, mostly about the diet. I switched from regular bacon to peameal bacon and I take off any excess fat. I walked every other night.

(table continues)

Table 7

Participants' Comments Regarding Behaviour Change

Name	Comments
Reba	I started to eat more fish than meat and more meatless meals, things like that. I put bran over my cereal. The shopping guide, it's very good. I keep it in my purse and read it, I read it quite a lot. We do a lot of dancing. Mentioned exercise video.
Sam	I eat sardines for calcium. Pretty well stick to chicken and lean steaks. Uses an exercise video and ski machine.
Saul	More fish, chicken, pastas, more vegetables, vegetable-type soups, a lot of chicken. My alcohol consumption I've cut down by 75 percent. Drinking more water too. I went to skim milk. I've always been active around the yard.

Summary

In order to capture the participants' perceptions of their involvement in the Adult Primary Prevention program, this chapter began with a synthesis of all 10 participants' interviews. Comments relating to the way the participants learned were reviewed using learning style and psychological types. Charts illustrating the participants' comments relating to elements of the program liked, reasons for not changing, self-directedness and behaviour change were reviewed using the related theories.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary

This phenomenological qualitative research was designed and implemented in an attempt to answer the following questions:

1) What are the participants' perceptions of what they learned in the Adult Primary Prevention Program?

2) Do participants perceive that they have taken positive action to reduce their modifiable risk factors?

3) What are the participants' perceptions of factors that facilitated or impeded their behaviour change to reduce their modifiable risk factors?

In order to answer the above questions, interviews were conducted with 10 participants of the Adult Primary Prevention Program. To gain further knowledge regarding question 3, the participants' learning style and psychological types were determined as well.

All 10 participants reported varying degrees of behaviour change. According to the definition of health education "that it brings about behavioural changes in individuals, groups and larger populations from behaviours that are presumed to be detrimental to health, to behaviours

that are conducive to present and future health" (Glanz, et al., 1990, p. 107), the program can be considered successful. It is difficult however, and was not the purpose of this study to ascertain the exact processes that led to behaviour change. "Learning is an internal process that varies from person to person, while instruction is external to the learner" (Dickinson, 1973, p. 3). As Dickinson points out in this definition of learning, we can understand the process of external instruction, but learning is an internal process. The purpose of this study was to understand the participants' perceptions of their involvement in the Adult Primary Prevention Program.

Understanding of the participants' perceptions came about through the interview process and analysis of these interviews. As described in Chapter 4, the participants' comments can be interpreted using various theories.

Elements of Knowles'(1984) theory of andragogy was supported by the participants' comments. Their knowledge of their risk factors supports the andragogical assumption that adults need to know the reasons for learning. The participants made reference to their risk factors and this knowledge gave them reasons for needing to learn and make lifestyle changes.

Knowles' (1984) andragogical process design was also supported by some of the comments that were illustrated in Table 4; (see Chapter 4) the elements of the program

participants liked. The majority of the participants made reference to the Lifestyle counsellor's ability to convey respect, caring, mutual trust, supportiveness and general humanness. A positive psychological setting was very important to these participants.

Learning style and psychological type were determined for each participant and examples of each can be found in the participants' comments. Although questions were not asked regarding how they learned, the participants seemed to be aware of what worked for them. As illustrated in Table 3, (see Chapter 4) learning style and psychological type for each participant can be interpreted from comments made during the interviews that conveyed how the participants learned. However, it is not possible to ascertain which elements of the program, learning style, or psychological type, can account for the behaviour change noted by the participants.

Self-directed learning was also noted by the participants. The participants described in Table 5 (see Chapter 4) various methods of directing their learning,- - whether it was through critical thinking, reading, collecting information or actively experimenting with their diets,- - they all made comments related to self-direction. Although it was not part of this study to determine the various stages of the participants' stages of self-direction, there did seem to be a variety of stages

represented by the comments in Table 5 (see Chapter 4).

Implications for Practice

There seems to be a strong link between the elements of Knowles' (1984) andragogical theory and the participants' comments about elements they liked about the program, their awareness of risk factors and their perceived behaviour change. It is important then that health professionals are given training in adult education theory so that these important elements are practiced on the front lines. As mentioned earlier in this paper, health care is leaning towards primary prevention, both on an individual basis and at the community level, which could result in the creation of many programs similar to the Adult Primary Prevention Program. Health educators should receive training in the andragogical process design so that programs can be designed with the adult participant in mind. Health educators also need to know how to recognize the various stages and facilitate self-directed learning. This would include fostering critical thinking processes, and learner control in the health education program. There are several strategies for developing critical thinking: Creating a supportive social climate, listening and watching attentively for verbal and nonverbal cues in order to pose critical questions; sensitively challenging old modes of thought and especially unqualified assertions; reflecting

back to learners their attitudes, rationalizations and habitual ways of thinking and acting so that they can see themselves from a different perspective; and providing an opportunity for reflective evaluation and stock-taking in the process of critical thinking (Brookfield, 1987). Developing critical thinking is quite involved and would require at least some training of health educators to assist their effective use of these strategies. Tools for determining the stage of self-direction could also be used with the participants to aid the educator with program design, and learning tools such as learning contracts.

Learning style and psychological type could also play a role in optimal health education program design. By making health educators aware that people have learning preferences and different psychological types and that tools are available to determine these, the best possible program design can be facilitated.

Implications for Theory

Further research needs to address the link between learning style and psychological type and its effect on behaviour change in health education programs. There may be more profound reasons for health behaviour change to occur from a health education program, such as the health belief model, efficacy expectations, value expectancy theory and theory of reasoned action (Glanz, et al., 1990).

Health education leading to health behaviour is a complex process and becoming aware of a participant's learning style and psychological type certainly would not impede the process. They can be used as tools in an effort to deal with such multifaceted medical conditions, as cardiovascular disease. The role of the facilitator or health educator needs further exploration in a theoretical framework. The participants brought the role of the Lifestyle counsellor to light in this study, through their comments which were illustrated in Table 4 (see Chapter 4). In this study the role of the Lifestyle counsellor was determined to be very important to a majority of the participants. Would this have been different in a group setting, where support may have been found from fellow participants?

This brings another area to the forefront that could be explored and that is the group setting versus the one-on-one setting. Group settings have been used as a way to reach many people, but is it as successful regarding behaviour change as one-on-one? Group setting versus one-on-one programs need to be explored further regarding psychological type as well. Client characteristics, which in this study included: learning style and psychological type, need to be considered in program design. Program design should incorporate best practice, however, best practice should be implemented because it is best practice, not just a money

saver. There has been some criticism of the one-on-one program design being expensive. Comparison's could be drawn between behaviour change for both types of program design. This would require a much larger study than what was explored in this paper.

Implications for Further Research

This study was designed to explore the perceptions of 10 participants involved in the Adult Primary Prevention Program for cardiovascular disease. The fact that the population was small and the focus was qualitative, focusing on the perceptions of the population does not allow the results to be generalized to a broader population. Further efforts could add to the body of research if a quantitative paradigm were used. Efforts could be made to control the physiological data, and add a control group to address such questions as;

1) Which psychological types make the most behaviour changes?

2) Which Learning style preferences make the most behaviour changes?

By determining the answers to these questions, it can be determined if health education programs need to be

changed to accommodate learning style and psychological types to gain the best results.

The group setting versus the one-on-one setting is another area that needs to be explored. As well, further research could be done to determine which program design elements need to be emphasized in a health education program.

The Ministry of Health is advocating more primary prevention, community education and health promotion, which will place medical personnel in the forefront of health education. Research such as this will help bridge the gap between health education, (which is primarily behaviourist), and adult education, in which the characteristics of individual learners are considered. This research underscores the need for educating the educators to ensure that the most effective and efficient programs are being offered to the public. In the future, more programs such as the one being explored by this research will be developed and it is important to first establish the best design and ensure that the needs of the adult patient will be met in a health education program. The ultimate goal in health education is to derive a positive health-enhancing behaviour change. I suspect that this will require a multifaceted educator who can draw from a menu of program designs and adult education theories to get the best results.

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INFORMATION LETTER AND CONSENT FORM

Dear Adult Primary Prevention Program participant:

The Adult Primary Prevention Program that you have been referred to is a new and innovative program. In an effort to determine the effectiveness of this education program, I am requesting your participation in a study. This study will not only aid future program design, it will also be used as the research component for my thesis in the Graduate Studies program in education, at Brock University.

As a participant of this research study, the only commitment you will have, is to fill out the forms that are found in this package and return it to the program co-ordinator upon your next appointment. The data that you provide on these forms will be kept strictly confidential and will be used to evaluate the educational merits of this adult education program. Your name will not be used or published in any documents that are produced from this study, only the data that you provide by filling out the forms will be used for purposes of this research study.

You are free to withdraw from this study, without penalty, at any time.

If you are willing to participate in this study please sign this letter and give it to the program co-ordinator. You will be given a copy of this letter and a copy will be kept in your file.

If you have any questions I can be reached at work (905)358-5552 or at home (905) 892-8321.

Thank you on behalf of all those who will benefit from the results of this research.

Sincerely,

Bonnie Polych, B.R.L.S.
Researcher

Yes, I have read the above and I agree to participate in this study by filling out the P.E.T. form, the Learning Style Inventory form and the Readiness for Change questionnaires. I understand I can withdraw from this study at any time without penalty or expulsion from the Adult Primary Prevention Program.

Signature of study participant_____

Date_____

Would you like the results of this research? yes____ no____

Appendix B

ADULT PRIMARY PREVENTION PROGRAM - RISK FACTOR PROFILE SHEET

NAME: Andrea DATE OF BIRTH: Nov 11, 1965 FEMALE: X

	Preadmission	Follow up
Date:	Oct. 18/94	Jan 19/95
Blood Pressure:	185/80	170/102
Resting Heart Rate:	80	82
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	96.16 kg	97.07 kg
Body Mass Index (Height 163.068/m^2 2.659) 96.16/2.659 = 36.16	36.16	36.5
Waist to Hip Ratio: normal: Male < 1.0; Female < 0.8)	1.2	1.2
Date: Total Cholesterol: (normal < 5.2 mmol/L) HDL:(normal: Male > 1.1 mmol/L Female > 1.4 mmol/L) LDL: (normal: < 3.4 mmol/L) Triglycerides: (normal: < 1.7 mmol/L)	Oct. 7/94 6.37 1.30 n/a 6.90	Jan. 7/95 5.66 .86 n/a 9.25
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	6.3	5.2
Smoking: Yes ___ No X Cigarettes/day:		
Present Activity Level (Comments) How often: Limitations:	Low	Moderate
RISK FACTOR SCORE	-4	-2

Appendix C

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Bret DATE OF BIRTH: March 7, 1948 MALE: X

	Preadmission	Follow up
Date:	June 6/94	
Blood Pressure:	125/80	
Resting Heart Rate:	72	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg: 73.9	73.9	
Body Mass Index (Height 170.18/m^2 2.89)	25.5	
Waist to Hip Ratio: normal: Male <1.0; Female <0.8)	1.0	
Date: Total Cholesterol: (normal <5.2 mmol/L) HDL:(normal: Male >1.1 mmol/L Female >1.4 mmol/L) LDL: (normal: <3.4 mmol/L) Triglycerides: (normal: <1.7 mmol/L)	Mar 17/94 6.51 .78 4.16 3.46	Sept 6/94 7.16 .67 4.54 4.29
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	5.6	
Smoking: Yes X No __ Cigarettes/day: pack a day		
Present Activity Level (Comments) How often: Limitations:		
RISK FACTOR SCORE	20	

Appendix D

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Kirt DATE OF BIRTH: Aug 15, 1946 MALE: X

	Preadmission	Follow up
Date:	Feb 9/94	May 25/94
Blood Pressure:	164/92	140/90
Resting Heart Rate:	90	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	120	121
Body Mass Index (Height 118.4/m^2 3.34)	35.9	36.2
Waist to Hip Ratio: normal: Male <1.0; Female <0.8)	1.04	1.03
Date: Total Cholesterol: (normal <5.2 mmol/L) HDL:(normal: Male >1.1 mmol/L Female >1.4 mmol/L) LDL: (normal: <3.4 mmol/L) Triglycerides: (normal: <1.7 mmol/L)	Feb 9/94 7.61 .78 12.6	May 24/94 5.12 .92 2.70 3.28
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	19.3	14.3
Smoking: Yes X No __ Cigarettes/day: pack a day	yes	yes
Present Activity Level (Comments) How often: Limitations:	poor	poor
RISK FACTOR SCORE	30	21

Appendix E

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Kora DATE OF BIRTH: Feb 19, 1969 FEMALE: X

	Preadmission	Follow up
Date:	Dec 5/94	April 21/95
Blood Pressure:	110/70	110/70
Resting Heart Rate:	70	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	58.5	56.7
Body Mass Index (Height 157.48/m^2 2.47)	23.6	22.8
Waist to Hip Ratio: normal: Male <1.0; Female <0.8)	.75	.75
Date: Total Cholesterol: (normal <5.2 mmol/L) HDL:(normal: Male >1.1 mmol/L Female >1.4 mmol/L) LDL: (normal: <3.4 mmol/L) Triglycerides: (normal: <1.7 mmol/L)	Dec 5/94 6.89 1.12 5.10 1.47	April 13/95 4.92 1.00 2.84 2.37
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	5.1	
Smoking: Yes _ No X__ Cigarettes/day: N/A	No	no
Present Activity Level (Comments) How often: Limitations:	low	moderate walks
RISK FACTOR SCORE	-9	-14

Appendix F

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Marci DATE OF BIRTH: Oct. 12, 1934 FEMALE: X

	Preadmission	Follow up
Date:	Sept 23/94	May 30/95
Blood Pressure:	150/80	150/80
Resting Heart Rate:	70	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	78	77.5
Body Mass Index (Height 157.48 /$m^{2\ 2.479}$)	31.4	31
Waist to Hip Ratio: normal: Male <1.0; Female <0.8)	.81	.81
Date: Total Cholesterol: (normal <5.2 mmol/L) HDL:(normal: Male >1.1 mmol/L Female >1.4 mmol/L) LDL: (normal: <3.4 mmol/L) Triglycerides: (normal: <1.7 mmol/L)	Sept/94 6.24 1.08 3.56 3.51	May/95 5.17 1.05 3.26 1.89
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	5.7	5.1
Smoking: Yes _ No X Cigarettes/day: N/A	No	no
Present Activity Level (Comments) How often: Limitations:	daily	daily walks
RISK FACTOR SCORE	17	15

Appendix G

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Olga DATE OF BIRTH: Nov 20, 1946 FEMALE: X

	Preadmission	Follow up
Date:	May 5/94	Sept 15/94
Blood Pressure:	145/110	108/78
Resting Heart Rate:		
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	57.8	57.1
Body Mass Index (Height 157.48/m^2 2.47)	23.6	23.1
Waist to Hip Ratio: normal: Male <1.0; Female <0.8)	.76	.76
Date: Total Cholesterol: (normal <5.2 mmol/L) HDL:(normal: Male >1.1 mmol/L Female >1.4 mmol/L) LDL: (normal: <3.4 mmol/L) Triglycerides: (normal: <1.7 mmol/L)	June 2/94 6.00 1.24 4.43 0.72	Sept 15/95 5.97 .92 4.41 1.40
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	4.8	5.2
Smoking: Yes _ No X Cigarettes/day: N/A	No	no
Present Activity Level (Comments) How often: Limitations:	low	low
RISK FACTOR SCORE	8	8

Appendix H

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Olivia DATE OF BIRTH: FEMALE: X

	Preadmission	Follow up
Date:	July 27/94	Oct 20/94
Blood Pressure:	150/90	148/86
Resting Heart Rate:	87	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	78.4	71.6
Body Mass Index (Height _/m^2_)	29.7	27.1
Waist to Hip Ratio: normal: Male < 1.0; Female < 0.8)	.81	.80
Date: Total Cholesterol: (normal < 5.2 mmol/L) HDL:(normal: Male > 1.1 mmol/L Female > 1.4 mmol/L) LDL: (normal: < 3.4 mmol/L) Triglycerides: (normal: < 1.7 mmol/L)	July 27/94 5.77 1.06 N/A 8.27	Oct 9/94 4.76 .70 2.79 2.79
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	4.8	n/a
Smoking: Yes _ No X Cigarettes/day: N/A	No	no
Present Activity Level (Comments) How often: +or- 4 days a week Limitations:none	low	moderate walks
RISK FACTOR SCORE		

Appendix I

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Reba DATE OF BIRTH: June 17, 1937 FEMALE: X

	Preadmission	Follow up
Date:	May 25/94	Sept 1/94
Blood Pressure:	107/65	101/58
Resting Heart Rate:	55	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	56	
Body Mass Index (Height 163/$m^{2\ 2.65}$)	21	20.7
Waist to Hip Ratio: normal: Male <1.0; Female <0.8)	.73	.73
Date: Total Cholesterol: (normal <5.2 mmol/L) HDL:(normal: Male >1.1 mmol/L Female >1.4 mmol/L) LDL: (normal: <3.4 mmol/L) Triglycerides: (normal: <1.7 mmol/L)	May 25/94 6.49 1.69 4.31 1.06	Aug 15/94 6.36 1.41 4.38 normal
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	3.8	
Smoking: Yes _ No X Cigarettes/day: N/A	No	no
Present Activity Level (Comments) How often: Limitations:	low	moderate walks
RISK FACTOR SCORE	7	7

Appendix J

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Sam DATE OF BIRTH: Aug 22, 1952 MALE: X

	Preadmission	Follow up
Date:	June 6/94	Sept 29/94
Blood Pressure:	105/76	110/70
Resting Heart Rate:	72	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	61.3	59.8
Body Mass Index (Height 172.72 /$m^{2\ 2.98}$)	20.5	20.0
Waist to Hip Ratio: normal: Male < 1.0; Female < 0.8)	.80	.78
Date: Total Cholesterol: (normal < 5.2 mmol/L) HDL:(normal: Male > 1.1 mmol/L Female > 1.4 mmol/L) LDL: (normal: < 3.4 mmol/L) Triglycerides: (normal: < 1.7 mmol/L)	May 24/94 6.45 1.22 4.73 1.11	Sept 13/94 5.19 1.21 3.67 .68
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	5.3	4.8
Smoking: Yes X No __ Cigarettes/day: 1 pack a day	yes	yes
Present Activity Level (Comments) How often: biking, irregular Limitations:	low	
RISK FACTOR SCORE	11	9

Appendix K

ADULT PRIMARY PREVENTION PROGRAM
RISK FACTOR PROFILE SHEET

NAME: Saul DATE OF BIRTH: March 10, 1927 MALE: X

	Preadmission	Follow up
Date:	July 7/94	Sept 28/94
Blood Pressure:	150/90	148/80
Resting Heart Rate:	66	
ECG:LVH PRESENT YES __ / NO X	No	No
Weight in kg:	98.9	94.5
Body Mass Index (Height 177.165/$m^{2\ 3.14}$)	32	30.1
Waist to Hip Ratio: normal: Male < 1.0; Female < 0.8)	1.04	.97
Date: Total Cholesterol: (normal < 5.2 mmol/L) HDL:(normal: Male > 1.1 mmol/L Female > 1.4 mmol/L) LDL: (normal: < 3.4 mmol/L) Triglycerides: (normal: < 1.7 mmol/L)	June 9/94 4.92 1.43 3.1 0.77	Sept 12/94 5.48 1.09 3.89 1.11
Fasting Blood Sugar: (normal: 3.9 - 6.1 mmol/L)	8.5	6.6
Smoking: Yes _ No X Cigarettes/day: N/A	No	no
Present Activity Level (Comments) How often: Limitations:	daily walk	moderate walks
RISK FACTOR SCORE	19	23