AN EXPLORATION INTO WOMEN'S UNDERSTANDINGS OF NUTRITIONAL HEALTH: TOWARDS A "COMMONSENSE" OF HEALTHY EATING

by

Wendy Dawn Hartford

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Abstract

The purpose of this research was to explore how women put into practice their understanding of healthful eating when purchasing food. The primary research question was: How do women think about health, health risk and food in their grocery store point-of-purchase food selections?

The food choice process is highly complex and understanding women's healthy food selections requires the consideration of the following: women's understandings of health in the context of the social environment, women's perceptions of personal health risk, women's perceptions of food, factors which influence everyday food decisions, such as cost and store location, and nutritional health education. According to the literature, research which considers how individuals make decisions about healthy food selection is limited.

Participants were 16 women between the ages of 20 and 49 who selected foods that would benefit their health, who exercised regularly, had access to nutritional health information and a variety of food produce markets, were responsible for their own food purchases, and for whom cost was not an overriding concern. Analysis of the transcripts revealed four broad themes; blueprints, planning, practical application, and reflections on nutritional health education. In the context of this study, blueprint describes a cognitive framework which enabled each woman to simplify the complex decision process through classifying and categorizing a range of values associated with healthy food choice. The blueprint provided a foundation for planning for and the practical application of healthy food selection and purchasing.

Collectively, the findings suggest nutritional health education policy and practice lacks information tools which take into account the high degree of variation that occurs in individuals' food choice processes. Furthermore, reaching individuals who do not know about healthful eating practices, in all probability, requires changes to the way that food is considered in the
existing social environment which is not, as these findings and previous research suggest, conducive to healthful eating practices. Finally, to assist individuals with their healthful food practices it is necessary to explore ways to promote critical thinking skills which enable individuals to make properly informed decisions about which tools are best suited for their personal food decisions.
Preface

Ethics approval for this research was received from the University of British Columbia Behavioural Ethics Board, certificate number: H10-01122.
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Finally, I am eternally grateful to Des; my partner in life, guide, friend, challenger, and nurturer. I could not have done this without you. Thank you for your insight, vision, belief in me, and insisting that "I can".
Dedication

This is dedicated to my grandchildren, Jack, Elizabeth, Emily, Taylor, Juliette, Olin, Imogen,
and ....

My inspiration for lifelong learning.
Chapter 1: Introduction

Rationale for the Study

Making healthy food selections is a complex process. In the last decade nutritional health education strategies have focused on making the "healthy choice the easy choice" (BC Healthy Living Alliance (BCHLA), 2005; Bouwman, te Molder, Koelen & van Woerkum, 2009; Secretariat for the Intersectoral Healthy Living Network (SIHLN), 2005; Select Standing Committee on Health (SSCH) 2004; World Health Organization (WHO), 2003, 2009). Despite these efforts to improve population health the eating practices adopted by many women living in Western societies pose a risk to their health and well being. For several decades, government sponsored health education programs have promoted lifestyle changes as a means to improve the health of the population. A vast amount of research in various fields of practice, such as Public Health, Health Promotion, Health Education, Epidemiology, Psychology and Sociology, supports health education programs which aim to provide people with the necessary tools to make lifestyle changes that will decrease their risk of chronic disease.

In addition to government nutritional health information, an abundance of health, diet, and exercise information is available from numerous sources, such as internet websites, news media, popular magazines, health professionals, friends, and families (Lupton, 1996; Ristovski-Slijepcevic, Chapman & Beagan, 2007; Whitney & Rady Rolfes, 2005). However, all this information does not appear to translate into healthy eating practices as evidenced by the continuing increase in the incidence of eating disorders and obesity for which women are at increased risk, and which contribute to increased health risks (Battle & Brownell, 1996; Irving & Neumark-Sztainer, 2002; Zachrisson, Vedul-Kjelsas, Gotestam & Mykletun, 2008; Zerbe, 1993, 2008). Decisions about health and food are highly complex situated as they are in the social dynamics of everyday life (Bouwman et al., 2009; Lupton, 1995, 1996; Wiggins, 2004). The
meanings that individuals ascribe to health, health risk, food and food choice are unique to the individual and dependant on the socioeconomic and cultural environment of that individual (Lupton, 1996). Women, in particular, may face increased pressure to live up to the concept of the thin ideal woman which has been identified as a potential influence on eating disorders (Battle & Brownell, 1996; Irving & Neumark-Sztainer, 2002; Lupton, 2003; Zerbe, 1993, 2008). Despite the complex nature of health and food decisions, many women make daily decisions about food and health without too much apparent difficulty. Individuals create for themselves personal food systems for managing food decisions; a means to cope with all the influences which affect food choice (Connors, Bisogni, Sobal & Devine, 2001; Falk, Sobal, Bisogni, Connors & Devine, 2001).

Individuals are frequently labelled as irrational when they do not act in accordance with the health advice of the experts (Zinn, 2008) and an individual's life experience and lay knowledge are often disregarded against expert knowledge. There is a need to bridge the gap between different knowledges so that optimal eating for health may be understood in everyday language as well as in the language of science (Ristovski-Slijepcevic et al., 2007). According to research in this area (Bouwman et al., 2009; Connors et al, 2001; Ristovski-Slijepcevic et al., 2007; Wiggins, 2004), increasing our understanding of how individuals, in this instance women, think about health and food in relation to food selection may provide greater insight into how individuals close the apparent gap between knowledge and action.

This increased knowledge, about the underlying factors which contribute to the ease and simplification of healthy food decisions at the point-of-purchase, may inform nutritional health education strategies which aim to enable making the "healthy choice the easy choice" a daily reality for many more women, thereby improving their health and decreasing the health risks associated with unhealthy eating practices.
The Researcher

My understanding of the importance of nutrition with respect to health has been influenced by a family history of type 1 diabetes and cancer, the need to meet the nutritional requirements of growing children, a personal interest in nutritional health, and providing nutritional advice in my professional capacity as a nutrition and fitness consultant. In my professional capacity the complexities of nutritional health are not easily explained to my clients.

Female clients, family members, and friends I know have diverse understandings and interpretations of health and nutrition related information. These understandings are often confounded by the poorly or partially reported health and nutrition messages in the media and by some health professionals. A young woman once said to me "I like to eat healthy, but my family doesn't"; a statement which gave rise to several questions: What did she mean by eating healthily? How did she understand health? How did she understand health in relation to nutrition and the food she ate? What needed to be done to enable women like her to engage in their healthy eating preferences?

As a nutrition and exercise health promoter I rely on the "tools of the trade" that have been developed from the research of many health fields and which have provided me with a means to pass on health related nutrition and exercise information to others. Among these tools are ideas for promoting healthy food choices at the grocery store. I use some of these tools and I also have my own strategies which guide my food purchases. I am curious to know how other women use tools provided by various information sources and to learn about their personal strategies for their healthy food selection.

The Research Question

By investigating and understanding how women experience shopping for healthy food I aim to add to nutritional health knowledge concerning how women determine the food selections
that are best for their health. The purpose of this research was to explore how women put into practice their understanding of healthful eating when purchasing food in order to better understand the complexities of making healthy food choices. The following research questions guided the investigation.

The primary research question was:

- How do women think about health, health risk and food in their grocery store point-of-purchase food selections?

The sub-questions were:

- How do women draw together health, nutrition and food information that is relevant to their health beliefs?
- How do women incorporate this information into their food selections in the grocery store?
- How do the study participants acquire their health and nutrition information?
- What other factors contribute to their point-of-purchase food selections?

**The Context**

To investigate how women between the ages of 20 and 49 years think about health, health risk, nutrition and food in relation to their grocery store food selections I recruited women who were actively engaged in purchasing healthy food on a regular basis. Because of established knowledge concerning social determinants of women's health, such as education, economics, and environment (WHO, 2009), I sought women who were well positioned educationally, economically, and environmentally with respect to daily food choice. I also sought women who consciously selected foods which would benefit their health and who exercised regularly because healthy eating and physical activity are frequently promoted together (BCHLA, 2005, 2007; SIHLN, 2005; SSCH, 2004), and previous research indicates that women
who practice healthful eating also consider being physically active an important lifestyle behaviour (Chapman, 1999; Chapman & Beagan, 2003).

**Significance of the Research**

This study was based on the premise that women who are actively selecting foods that are considered beneficial to health have developed personal strategies concerning the relationship between their health and the foods they select and consume. Over time, these women have developed healthy food selection strategies influenced by personal knowledge of health, health risk, food and nutrition, and their social environment. Women put their healthy food selection strategies into practice in the context of their daily lives. A growing body of research seeks to understand how health is viewed in relationship to food (Bouwman et al., 2009; Connors et al., 2001; Falk et al., 2001; Ristovski-Slijepcevic, 2009; Wiggins, 2004). While surveys, focus group, and individual interviews have provided some insight into the management of health and nutrition advice, the responses tend to be generalised rather than specific to the real experience of choosing food (Wiggins, 2004). Wiggins (2004) suggests placing the research where the experience of selecting food occurs in everyday life; for example, when purchasing food.

This exploration may provide insight into how women, between the ages of 20 and 49, draw from their knowledge of health, health risk, nutrition and food when considering their decisions about healthy food in their daily lives. That is, how these translate their health and nutrition knowledge into healthy food choices. The results of this study may also provide insight into differences between scientific and lay understandings of healthful food choice identified by Ristovski-Slijepcevic et al. (2007). In addition, the findings may support existing knowledge and reveal new information on which future research can be focused and which is discussed in
more detail below. Furthermore, the findings may assist nutritional health educators and policy makers in the development of health and nutrition programs.

**Overview of the Literature**

The first area of literature that has relevance to this study deals with the complexities of personal food decisions and food choices. A food-choice process model (Connors et al., 2001) reveals how ideals, personal and social factors, resources, and context contribute to a personal food system wherein value negotiations occur. Within this model the individual employs heuristics to manage value negotiations or trade-offs (Falk et al., 2001). From the perspective of this study the influences referred to by Connors et al.(2001) relate to the following: women's health in the context of the social environment, perception of personal health risk, perception of food, health and nutrition education, and everyday food decisions.

Accordingly, the second area of relevant literature considers women's health in the context of the social environment. The understandings or meanings of health are multidimensional and although broadly defined by the WHO (1986) this definition does not take into account the individualistic interpretations of health which are greatly influenced by the social environment in which that individual exists (Watson, Cunningham-Burley, Watson & Milburn, 1996). For women, in particular, the social environment has the potential to negatively influence their nutritional decisions which in turn negatively impact their health (Zerbe, 1993). Changes in eating and physical activity practices along with a social environment that appears to value thinness may influence women to take up nutritional practices which have the potential to harm their health (Battle & Brownell, 1996; Lupton, 1993, Zerbe, 1993).

The third area of literature addresses the perceptions or meanings of health risk. There is a close relationship between health and nutrition, and eating behaviours have the potential to positively or negatively affect health by decreasing or increasing the risk of several major serious
diseases and other less serious, but life limiting, health conditions (Laquatra, 2000). Women may also be at risk for a range of nutrition related reproductive issues (Schebendach & Reichert-Anderson, 2000). However, as with health, people have different perceptions of health risk some of which may not align with the health risk experts' perceptions of health risk, and individuals may be perceived as acting irrationally when they do not heed health risk advice (Zinn, 2008). Non-expert knowledge or "lay" knowledge is not without logic and rationality (Ristovski-Slijepcevic et al., 2007), and there is a need for risk experts' to better understand lay perceptions of health risk (Denscombe, 1993; Krimsky, 1992; Lupton, 1993).

A fourth area of literature concerns perceptions or meanings of food. Food, as with health and health risk, is multidimensional; food is much more than a provider of sustenance (Lupton, 1996). The social environment is highly influential in the development of the relationship between food and an individual (Lupton, 1996) and the meanings of food which an individual develops are closely related to health and health risk.

The fifth area of literature considers existing health education programs. For many years health and nutrition education programs have promoted lifestyle changes that will promote health and decrease health risk based on the principle of the "Four E's: education, environmental supports, economic levers, and enforcement" which aim to make the "healthy choice the easy choice" (BCHLA, 2005, 2007; SIHLN, 2005; SSCH, 2004 p. 23). However, this perspective has been criticised as being too narrow, individualistic, and lacks acknowledgement of the social dynamics of everyday life (Bouwman et al., 2009; Lupton, 1995, 1996; Wiggins, 2004), and the meanings people ascribe to health, health risk and food. This approach also assumes that individuals have an in-depth understanding of nutritional science (Lupton, 1996; Wiggins, 2004) and that increased information will bring about the desired changes (Bouwman et al., 2009;
Niva, 2006). In reality, the literature suggests that more information may increase the

The final area of literature on which I draw deals with everyday food decisions. There is
a plethora of nutritional health related information available from a variety of sources upon
which women can draw to support their health related food decisions. When information is
outside of an individual's experience the uncertainty of a decision can increase (Douglas &
Wildavsky, 1982). Confusion about what is healthy food and what is not may be increased by
commercial interests promoting food items and health claims which may not be supported by the
product (Martin, 2006). Although many women are aware of the interconnections between
nutrition and health (Lupton, 1996; Mckie, Wood & Gregory, 1993) and they consider the
nutritional content of food important (Bouwman et al., 2009; Canadian Council of Food and
Nutrition (CCFN), 2008a; Ristovski-Slijepcevic et al., 2007), this does not necessarily translate
into health benefiting food decisions.

Existing studies have surveyed people's knowledge of health and nutrition in relation to
food choice (CCFN, 2008b), how families talk about health and nutrition at the dinner table
(Wiggins, 2004), and different cultural views of healthy eating (Ristovski-Slijepcevic et al.,
2007), but my literature review did not reveal any studies which are specifically concerned with
how women, between the ages of 20-49, think about health, health risk, and food in relation to
their food purchases. Wiggins (2004) has previously indicated that research in this area would
add to the existing knowledge and understanding of how knowledge about health and nutrition
translates into practical choices of food.

**Research Design**

The qualitative research design I employed in this study was informed by previous
research discussions around food choice, health, health risk, nutrition and food. Through this
exploratory and inductive research I sought to gather information about the lay knowledge of a specific group of women concerning health, health risk, nutrition and food in the context of their social environment through a simulation of food selection at the grocery store.

Method

The method was intended to simulate buying groceries at the grocery store; that is, within the interview process I aimed to create a setting which would simulate the women's thought processes that occurred when selecting and purchasing food. The women were aged between 20 and 49 years of age, and considered themselves health conscious in that they had made a commitment to select food that would benefit their health, and to exercise regularly. In addition, the women also had access to a variety of health and nutrition information sources, were not economically limited in their food selection, and were the primary food selector and purchaser in their household. Invitations to participate in the study were placed in several fitness facilities and a fitness wear outlet in the area of White Rock and South Surrey, and as advertisements in a local community newspaper. Eighteen women responded, with 16 women consenting to and participating in the interview process.

The women consented to participating in one one-on-on interview and one focus group interview which were audio-taped. The interviews were held in coffee shops, participant's homes, my home, a community room, and a participant's office. The participants were asked to review the transcript of their one-on-one interview for accuracy. Eleven women participated in two focus groups, one with 6 participants and the second with 5 participants. I was unable to arrange a third focus groups due to the varied commitments of the five remaining women. The data from the interviews was coded and organised in terms of key words, phrases concepts, analysed against the literature, and the findings were discussed in relation to nutritional health
education, implications for policy and practice, implications for future research, limitations of
the study, and impact on the researcher.

Scope, Limitations and Delimitations

I recruited 16 women between the ages of 20 and 49 with the purpose of gaining insight
into how these women draw together information concerning health, health risk, nutrition and
food to inform their food selections. A further goal was to understand how the social
environment influenced their food choices. In addition, the findings from this study may provide
the nutritional health education community with a greater understanding of the meanings which
women ascribe to health, health risk, nutrition, and food choice in relation to point-of-purchase
decisions concerning food.

One obstacle in the way of directly achieving the purpose of the research was that the
one-on-one interviews were abstracted from the actual point-of-purchase of the food items. Thus
the discussions are a simulation of grocery shopping and may not represent the exact decision
processes which occur at the point-of-purchase. However, by conducting the interviews as close
to the completion of the grocery shopping events the participants' responses to my questions may
be a reasonable reflection of their food selection experiences.

Delimitations in the form of researcher and participant bias can be expected. To limit
investigator bias my questions were semi-structured and open-ended, and designed to encourage
the participants to lead the conversation. The responses of the participants may have been biased
to what they thought I would expect them to answer and may reflect general nutrition advice
rather than their own actions. Within the focus group interviews, there was the potential for
quieter participants to be overshadowed by more vocal participants. I ensured that all
participants had a chance to speak and generally found that the women encouraged other women
to participate and add to the conversation. Another disadvantage of focus group interviews is
that some of the participants may not wish to disclose their views if they are deemed very
different from views expressed by other participants (Palys & Atchison, 2008). To resolve this
issue the participants were able to express their personal views during the individual interviews.
The focus group interview questions were less personal and intended to invite collaborative
discussion.

Due to the purpose, approach and design of this research, it is not expected that the
findings can be generalised to the general population group. Instead it is expected that the
findings have the potential for transferability particularly with respect to informing future health
education projects specifically those oriented to women with similar life situations as the women
in the study group.

**Thesis Structure**

This thesis is structured as follows: Chapter 2 is a review of the literature relevant to this
study, a description of the research design is provided in Chapter 3, the findings are presented in
Chapters 4 and 5, and in Chapter 6 the findings are discussed with respect to existing nutrition
health education approaches, and with respect to the implications for policy and practice,
implications for future research, and limitations of the study. The impact on the researcher is
then discussed which is followed by the conclusion.
Chapter 2: Review of the Relevant Literature

Introduction

In this chapter I review literature relevant to how women make health related food selections. This review is comprehensive but not exhaustive. The literature revealed several different bodies of literature which are connected to the research questions. I first summarize literature concerning "choice" and food "choice". This is followed by a summary of literature pertaining to health, women, body shape and the social environment. Thirdly, I summarize literature concerning women and health risks. The fourth literature summary addresses the meanings of food. I then provide a summary of literature which considers everyday food decisions which is followed by a summary of literature associated with current health and nutrition education practices. I conclude with a summary of the literature review.

"Food Choice"

"Choice depends upon the alternatives, values, and beliefs that are considered" (Douglas & Wildavsky, 1982, p. 4) and is bounded by various social and cultural factors. Choice requires the use of a decision making process which entails selecting or choosing between alternate possibilities (Beck, 1992; Douglas, 1985; Zerbe, 1993), and invariably requires some degree of risk-benefit analysis; that is, an assessment of possible benefits or gains against possible costs or losses associated with the decision at hand (Douglas & Wildavsky, 1982; Wilson & Crouch, 2001). Individuals develop personal systems of rules of judgement, or heuristics, to cope with decisions involving uncertainty (Denscombe, 1993; Krimsky, 1992).

With respect to making food decisions and food choices there is a range of factors, such as individual knowledge about health, food preferences, personal meanings ascribed to health and food, beliefs and values, monetary costs, social status and lifestyle, environment and family commitments, which contributes to decisions concerning food (Bisogni, Connors, Devine &
Sobal, 2002; Bouwman et al., 2009; Falk et al., 2001; Lupton, 1995; Ristovski-Slijepcevic et al., 2007; Wiggins, 2004). Research around the values that individuals hold with respect to food choice indicates that a complex decision process underlies food selection. A food-choice process model (figure 1.), adapted by Connors et al. (2001) from previous models, reveals how influences such as ideals, personal factors, resources, social factors and context contribute to a personal food system wherein value negotiations occur.

Figure 1. The food-choice process model
(Connors, M., Bisogni, C.A. Sobal, J. & Devine, C.M. (2001). Adapted from Furst et al. (1996) and Falk, Bisogni & Sobal (1996)).
In theory, this personal food system manages the relationship between health, taste, cost, convenience and other unspecified factors which contribute to strategies which simplify the ultimate food choice (Connors et al., 2001; Falk et al., 2001). In this view, individuals employ various strategies (heuristics) such as "avoidance, limitation, substitution, routinization, modification and replacement" (Falk et al., 2001, p. 426) in their value negotiations and draw from health beliefs and values, derived from life experiences, to make decisions about their food selections. For any decision, the precise nature and resulting outcome for each possibility is seldom completely known at the time the decision is made (Douglas, 1985; Douglas & Wildavsky, 1982; Hayes, 192; Wilson & Crouch, 2001; Zinn, 2008). Therefore all decisions are made under conditions of uncertainty (Beck, 1999; Douglas, 1985; Douglas & Wildavsky, 1982; Hayes, 1992; Zinn, 2008), and "every choice we make is beset with uncertainty" (Douglas, 1985, p. 42) including everyday food decisions concerning food. The simplicity of the food-process model perhaps belies the highly complex food choice process.

**Health, Women's Body Shape, and the Social Environment**

This section reviews literature concerning the meaning of health in relation to the social environment. Health means different things to different people. While health may be simply defined and understood as the absence of disease, or “good” health (Lupton, 1995, p. 69; Ristovski-Slijepcevic et al., 2007), far broader definitions and understandings of health which take into account environmental and socioeconomic factors have been provided by various public health institutions and health promotion literature (Lalonde, 1974; Legowski & McjKay, 2000.; Lupton, 1996; Health Canada, 2008; WHO, 1986). Very few people will deny that health is important to them and most would prefer a "long life to a short one" (Lalonde, 1974, pp. 6-8), but achieving physiological health may not be the most important issue, or even a primary concern, in the daily lives of people (Bouwman et al., 2009; Lupton, 1995; Ristovski-Slijepcevic
et al., 2007; Watson et al., 1996). For some individuals health is something to strive for and which can be controlled (Lupton, 1995). Other individuals take a fatalistic view over health in that one is born healthy, illness is inevitable with aging, cancer is inevitable (Lupton, 1995), and why change a behaviour that is not making you sick (i.e. smoking) (Watson et al., 1996).

Health has physical, social, emotional dimensions (Lupton, 1995), and for women may be associated with feelings of vulnerability to disease and individual responsibility to control risks and manage uncertainty (Robertson, 2001). Women experience unique health concerns due to physiological and sociocultural roles and ideologies (BC Ministry of Health and Ministry for Seniors (BCMHMS), 2000; Health Canada, 2006; WHO, 2009; Institute of Medicine, 2004). However, the current sociocultural environment may not be conducive to achieving good health. Whatever concept of health an individual holds has evolved over time and has been influenced by cultural health ideals. Consequently, an individual's meaning of health will reflect the health ideals of the sociocultural environment in which that individual exists (Watson et al, 1996).

Where health related decisions are concerned, especially for women, the prevailing sociocultural environment has been described as "toxic" (Battle & Brownell, 1996; Heenan, 2008; Zerbe, 1993).

Such an environment has the potential to compromise a woman’s health as it may negatively influence women's decisions about nutrition (Battle & Brownell, 1996; Gaesser, 2003; Irving & Neumark-Sztainer, 2002; Zerbe, 1993). Subtle societal changes have occurred over the past four to five decades with respect to nutrition and physical activity patterns. Foods of all kinds have become increasingly available and accessible, especially energy dense and high fat foods, while at the same time physical activity levels have dramatically decreased (Battle & Brownell, 1996; Gaesser, 2003; Irving & Neumark-Sztainer, 2002; Zerbe, 1993). Regular home cooked meals eaten with family members or in other social contexts were once the normal eating
arrangement for many people, but skipping meals, solo eating, eating on-the-go, and a reliance on snack foods has become the new norm (CCFN, 2008b; Devine, 2005; Zerbe, 1993). Simultaneously, modern technology in its many forms, cars, household appliances, televisions, computers, and the internet, has contributed to decreased physical activity for many individuals (Battle & Brownell, 1996; Lupton, 1993). It is now recognised that this lifestyle is associated with the current obesity epidemic (WHO, 2009).

Paradoxically, the same society has created an environment which idolises, idealises, and normalises overly lean, sculptured bodies, and stigmatises obesity (Battle & Brownell, 1996; Irving & Neumark-Sztainer, 2002; Laquatra, 2000; Whitney & Rady Rolfes, 2005; Zerbe, 1993). Modern culture has created a social environment which favours aesthetics, and for many women body image and fitting in with the acceptable social aesthetic standard has become more important than who they are, and perhaps their health (Lupton 1995; Zerbe, 1993, 2008). Many television shows, movies and commercials are awash with images of ultra thin, young female models and "celebrities" (Burns & Gavey, 2008; Lupton, 1995), and quick weight loss diets and products (Burns & Gavey, 2008; Zerbe, 1993). The notion of the successful woman is aligned with that of the slender woman (Evans, 2003; Zerbe, 1993) which can be achieved through dieting and exercise. Dieting, commonly understood as restricted eating, has historically been a way for women to achieve the culturally acceptable shape and size (Gimlin, 2008, Lupton, 2003; Zerbe, 1993). In a culture of consumerism, the diet industry is more than willing to respond to women's quest for the thin ideal and thus provides supposedly improved, but not necessarily more successful diet products (Gimlin, 2008; Heenan, 2008; Lupton, 1996). However, the social discourse around dieting which emphasises fad diets or restrictive food intake appeared, some years ago, to be moving towards a new discourse on healthy eating for weight loss and weight maintenance (Chapman, 1999).
In order to combat these adverse influences, government sponsored, and increasingly industry sponsored, health messages concerning nutrition and physical activity are frequently presented in the mass media alongside commercials for weight loss programs and products (Battle & Brownell, 1996; Lupton, 1993). In recent years there has been an increase in the number of food products advertised as having some health benefit or which may reduce a particular health risk (Abbé, Dumais, Chao & Junkins, 2008). Together with slogans associated with state funded health interventions, such as "It is better to be slim than fat" (Lalonde, 1974, p. 58), and "healthy weights" and "normal body weight", (SIHLN, 2005, p. 19; SSCH, 2004; WHO, 2009) these messages may have led to health becoming synonymous, with weight loss and obtaining the ideal body shape (Burns & Gavey, 2008; Lupton, 1995; Markula, Burns & Riley, 2008). Tones of morality surround the notion of a healthy body and although being heavier than one's "ideal" weight may not be unhealthy, this has become psychologically unacceptable in an aesthetically focused society which regards overweight as unhealthy and a signifier of lack of individual personal control (Aphramor & Gingras, 2008; Burns & Gavey, 2008; Gaesser, 2003; Lupton, 1995, 2003; Malson, 2008; Markula, 2008; Markula et al., 2008; Watson et al, 1996; Zerbe, 1993).

The literature reviewed above suggests that the meanings of health are multidimensional. For women, meanings of health may have become associated with thinness and decisions about healthful eating may be determined by a perceived ideal body shape. While meanings of health can influence the type and quantity of food selected to eat, meanings ascribed to food itself add another dimension to food decisions and the food items eventually selected for consumption.

**Women and Health Risk**

Everyday eating behaviours associated with the consumption of commonly available foods may benefit or adversely affect health status by decreasing or increasing potential health
risks associated with several chronic diseases, for example, cardiovascular disease, some cancers, and type II diabetes (Falk et al., 2001; Lupton, 1996; Laquatra, 2000; Mckie et al., 1993; Ristovski- Slijepcevic et al., 2007; Wiggins, 2004; Whitney & Rady Rolfes, 2005).

Although not classified as a disease, obesity, which can be influenced by environmental, biological and genetic factors, is closely associated with eating behaviour. Obesity may increase the risk of the aforementioned chronic diseases as well as many other less documented, but debilitating conditions, such as sleep apnea (Laquatra, 2000; Whitney & Rady Rolfes, 2005), impaired response to certain vaccines (Laquatra, 2000), and mobility problems (SSCH, 2004).

Along with obesity, anorexia nervosa, bulimia nervosa, binge eating disorder, and a broad range of unhealthy eating practices form a spectrum of eating behaviours most often, but not always, associated with weight loss (Irving & Neumark-Sztainer, 2002; Zerbe, 1993). The extensive range of specific diagnostic criteria that cover eating disorders is not mutually exclusive or collectively exhaustive (Zerbe, 1993; Schebendach & Reighert-Anderson, 2000; Whitney & Rady Rolfes, 2005), and includes everyday eating and exercises practices adopted by seemingly healthy women (Burns & Gavey, 2008; Lupton, 1996; Zerbe, 1993, 2008). Zerbe, (1993, 2008) suggests that there are potentially millions of women with disordered eating behaviours who are at risk for a wide range of health risks and adverse health outcomes associated with eating disorders.

Anorexia nervosa, bulimia nervosa and binge eating disorder adversely affect all body functions associated with the cardiovascular, gastrointestinal, skeletal, dermatological, endocrine, hematologic, and neuropathic systems (Schebendach & Reighert-Anderson, 2000). Furthermore, drugs used to induce vomiting may result in damage to the muscular and neurological function of the heart leading to sudden death (Schebendach & Reighert-Anderson, 2000). Psychological health is affected by negative body image, and weight and body shape
preoccupation is common to all eating disorders (Irving & Neumark-Sztainer, 2002; Whitney & Rady Rolfes, 2005; Markula et al., 2008; Zerbe, 1993). These three eating disorders are classified as psychiatric illnesses and have the highest mortality rate among all mental illnesses (Hay & Mond, 2005; Schebendach & Reighert-Anderson, 2000; Zerbe, 2008). Unhealthy eating practices can negatively affect women's fertility, pregnancy and child birth outcomes (Schebendach & Reighert-Anderson, 2000), increase the risk of a range of pregnancy complications (Barr, 2007; Gratton, 2008), maternal mortality (Zerbe, 1993), low birth weight infant, (Barr, 2007; Whitney & Rady Rolfes, 2005; Zerbe, 2008), which is associated with an increase in neonatal health problems (Barr, 2007), and an increased risk of health problems for offspring over the lifespan (Grattan, 2008).

The prevailing sociocultural environment which relates health with weight loss and thinness, and endorses the concept of the thin ideal woman, has been cited as a major influence on eating behaviours associated with eating disorders (Battle & Brownell, 1996; Burns & Gavey, 200; Heenan, 2008; Irving & Neumark-Sztainer, 2002; Schebendach & Reighert-Anderson, 2000; Malson, 2008; Whitney & Rady Rolfes, 2005; Zerbe, 1993). Not all behaviours associated with weight loss and weight control, such as the use of diet pills and laxatives (Irving & Neumark-Sztainer, 2002; Whitney & Rady Rolfes, 2005) involve food selection. However, any diet whether it is based on particular beliefs "orthorexia" (MacEvilly, 2001; Mathieu, 2005), undertaken to lose weight, or for specific health reasons, requires food selection. With respect to weight loss, restrictive "fad" diets can be hazardous to health, fail to achieve permanent weight loss (Whitney & Rady Rolfes, 2005), may create a "diet mentality" resulting in a pattern of fluctuations of weight (Gaesser, 2003, p. 40), and may actually underpin eating disorders (Zerbe, 1993). There is increasing evidence to suggest that, for some individuals, binge eating disorder (Irving, & Neumark-Sztainer, 2002; Schebendach & Reighert-Anderson, 2000; Zachrisson et al.,
2008), and weight cycling, or "yoyo dieting", may be closely associated with obesity (Gaesser, 2003; Schebendach & Reighert-Anderson, 2000; Zerbe, 2008).

Whether or not women are conscious of the potential personal health risks associated with their everyday food selections, the process by which food choices are made becomes increasingly complex and a process that involves health risk decisions.

**The Meanings of Food**

Food is more than a provider of nutritional sustenance. Food identifies who we are (Bisogni et al., 2002; Devine, 2005; Falk et al., 2001; Fischler, 1988; Heenan, 2008; Lupton, 1996), is symbolic (Fischler, 1988; Lupton, 1996; Zerbe, 1993), and frequently foods consumed are determined more by cultural influences, self identification practices, and how individual's wish to be perceived by their social group, rather than for nutritional or taste value (Falk et al., 2001; Lupton, 1995, 1996; Ristovski-Slijepcevic, et al., 2007). In addition, food serves as a comforter for the management of feelings in times of crises, diffuses feelings of emptiness, and provides a means of self control (Lupton, 1996; Zerbe, 1993). Furthermore, the food habits individuals adopt act as signifiers of self care management, self discipline and self control (Aphramor & Gingras, 2008; Bisogni et al., 2002; Gimlin, 2008; Heenan, 2008; Lupton, 1994, 1996; Markula, et al., 2008; McKie et al., 1993; Rich & Evans, 2008; Zerbe, 1993). In particular, women over their life course may experience, due to gender related social roles, changes in the meaning of food influenced by concerns for health, weight and body shape (Devine, 2005; Lupton, 1994, 1996; Mckie, et al., 1993).

Food preferences and practices arise primarily from social interactions between families and social groups with differences occurring between, and among, groups of varying economic and ethnic descriptions which can be influenced by geographic location (Bisogni, et al., 2002; Fischler, 1988; Lupton, 1996; Niva, 2006). When physical appearance and health are rated
highly the body is sometimes represented as a project which can be worked on and improved throughout life, and food decisions may be made according to the accepted notions of the culturally accepted body and health status (Heenan, 2008; Lupton, 1996, 2003; Rich & Evans, 2008). Beliefs and values concerning food developed in any sociocultural environment also influence health understandings of food (Bisogni et al., 2002; Bouwman et al., 2009; Connors et al., 2001; Falk et al., 2001; Fischler, 1988; Ristovski-Slijepcevic et al., 2007). "Stuff a cold and starve a fever" and "eating for two" serve as examples, as do beliefs which associated red meat with virility (Lupton, 1996), chocolate with pleasure (Lupton, 1994, 1996), and "bad" food with weight gain (Oakes, 2005).

Sociocultural values and beliefs around food choices are more often depicted as impediments to health which need to be ameliorated (Douglas & Wildavsky, 1982; Lupton, 1996). Food, from a biological perspective, is something to be manipulated in order to achieve optimal and healthy functioning of the human body and entails micro-managing food to achieve the "perfect diet" through a prescription for "perfect health" (Lupton, 1996, p. 7). Foods are identified as healthy or unhealthy (Falk et al., 2001), or as "good" or "bad", and food practices which are not viewed as conducive to optimal health are unwelcome (Fischler, 1988, p. 276; Lupton, 1996, p.6; Niva, 2006, p. 385; Rich. & Evans, 2008). In this view, health is a matter of choosing the right foods and an individual responsibility to assume control over one's health destiny (Aphramor & Gingras, 2008; Lupton, 1995, 1996; Ristovski-Slijepcevic et al., 2007).

The meanings ascribed to food, like the meanings ascribed to health, are multidimensional; therefore food selection made with health in mind must be considered a multi dimensional phenomenon (Bisogni, 2002; Connors et al., 2001; Fischler, 1988; Lupton, 1994; Falk et al., 2001; Wiggins, 2004). Everyday food decisions become increasingly complex.
Everyday Food Decisions

With respect to health risk and food selection there is a plethora of available information about food and health related benefits upon which to draw to aid in decision making. The internet, television, news media, and popular magazines are sources of health risk and nutrition information (Lupton, 1996; Ristovski- Slijepcevic et al., 2007; Whitney & Rady Rolfes, 2005), along with information provided by non-government sponsored information (Canadian Cancer Society of BC and Yukon, 2009; Diabetes Association of Canada, 2009; Heart and Stroke Foundation Canada, BC and Yukon, 2009), and information given by family and friends (Beyerstein, 1997; Ristovski-Slijepcevic et al., 2007; Whitney & Rady Rolfes, 2005). In Canada, educational tools, such as Health Canada's (2007, 2008) *Eating Well with Canada's Food Guide* and an interactive internet site, provide information about health risks and generalised recommendations for nutrient intake for optimal health.

Nutrition labels, another educational tool, which include nutrient facts, ingredient lists and health claims and which are now a Federally regulated requirement on a broad array of foods, are intended to assist individuals with their point-of-purchase food selections (Cowburn & Stockley, 2005; Health Canada, 2008; Williams, 2005). Despite the volume of health risk and nutrition information available, uncertainty about food decisions has not decreased. Instead, decisions have become more uncertain (Lupton, 1996; Niva, 2006) and individuals are increasingly anxious about the food they eat either over concerns about pathogenic contamination of food (Lupton, 1996; Whitney & Rady Rolfes, 2005), the nutrient values of food, or the "best" foods to eat. An individual's response to risk and uncertainty, according to knowledge theory, depends on their knowledge and available information (Krimsy, 1992), but the way in which health risk information is frequently presented, as mathematical probabilities such as 1 in 1000, may not be sufficient or an appropriate method by which to inform a lay
person’s health risk decisions (Douglas & Wildavsky, 1982; Lupton, 1995). More information and new knowledge, rather than aiding a decision, may result in increased uncertainty (Beck, 1999; Lupton, 1995, 1996), and decisions made outside the boundaries of an individual's experience and skill further increase that uncertainty (Douglas & Wildavsky, 1982). Under these circumstances every day food decisions may become dominated by uncertainty and mired in confusion.

People can be easily confused about what to eat despite the information and educational tools available and this is not helped by the integrity and relevance of the knowledge sources. Nutrition labels can be misinterpreted (Cowburn & Stackley, 2005; Williams, 2005) and be misleading. The food industry makes use of health claims on food products to improve the product's appeal to consumers (Lupton, 1996; Whitney & Rady Rolfes, 2005), but despite health claims and nutrition label regulations, a health claim on a particular product does not necessarily indicate that all constituents of the product support the health claim (Martin, 2006), nor is the truth of some nutritional health claims easily identified by consumers (Whitney & Rady Rolfes, 2005). The internet remains a source of unregulated claims about anything and everything and although much of the information available to individuals stems from well supported health related scientific research, misleading and at times fraudulent information is equally prevalent (Beyerstein, 1997; Drazen, 2003; Whitney & Rady Rolfes, 2005).

Furthermore, media reports may inadvertently cloud health messages in attempts to enhance their entertainment value (Lupton, 1993, 1995), and while people may have heard of particular food constituents, such as probiotics and trans fats (CCFN, 2008b), they may not know what they are or what their biological function is in relation to health. In addition, although people report that healthy eating is important to them (Bouwman et al., 2009; CCFN, 2008b; Ristovski-Slijepcevic et al., 2007), confusion, as well as scepticism towards authoritative sources
of health and nutrition information (Ristovski-Slijepcevic et al., 2007), may contribute to uncertainty in decision making and individuals may elect to follow the adage "if in doubt, don't" and stick to what they are familiar with. Sticking with the familiar may appear that lay people are reluctant to follow nutritional advice concerning health risks, especially that of experts who, at times, change their messages and have been wrong.

Notwithstanding all of the above and even when provided with "good" information, uncertainty can contribute to a reluctance to act. Studies indicate women, in particular, consider the nutritional content of food important to food selection and health (Bouwman et al., 2009; CCFN, 2008a; Ristovski-Slijepcevic et al., 2007). Many women are aware of the interconnections between nutrition, health, and the potential consequences of their food choices (Lupton, 1996; Mckie et al., 1993). However, everyday food decisions may not translate knowledge into health benefiting food choices (Bouwman et al., 2009; CCFN, 2008a; Ristovski-Slijepcevic, et al., 2007; Wiggins, 2004). Health and nutrition information provided by state funded health education programs aims to simplify health benefiting food choices.

**Health and Nutrition Education**

Women are statistically at increased risk for obesity (Scharff, Homan, Kreuter, & Brennan, 1999; Markula et al., 2008) and other eating disorders (Hay & Mond, 2005; Irving, & Neumark-Sztainer, 2002; Markula et al., 2008; Zerbe, 1993), but existing obesity focused nutritional health messages may promote disordered eating behaviours (BCHLA, 2005; Burns & Gavey, 2008; Irving & Neumark-Sztainer, 2002). In addition, women have different nutritional health requirements to men (BCMHMS, 2000); therefore, current health and nutrition education in the form of general messages targeted at the general population may not be a suitable vehicle for providing women with information about their nutritional needs. In Canada, current Federal and Provincial intervention programs are based on the principle of the "Four E's": education,
environmental supports, economic levers, and enforcement" (BCHLA, 2005, 2007; SIHLN, 2005; SSCH, 2004 p. 23) and aim to make the "healthy choice the easy choice" (Bouwman et al., 2009, p. 390; SSCH, 2004, p. 2; SIHLN, 2005: WHO, 2009).

Focusing on health risks and health risk communication has been central to health education programs for several decades (BCHLA, 2005; Lalonde, 1974; Legowski & McKay, 2000; SIHLN, 2005; SSCH 2004; WHO, 1986, 2003, 2009). The objective of health risk communication is to encourage and or persuade large numbers of the population to change their behaviour regardless of their health risk (Lupton, 1995; Mckie et al., 1993). There is an assumption that health risk information will prompt the receiver to take positive action to ameliorate health risks by avoiding behaviours which have the potential to increase their health risk (Hayes, 1992; Lupton, 1993).

Integral to the concept of risk communication is the notion of individualism, wherein society becomes increasingly dependent on an individual's ability to work hard, act rationally and depend on self (Krimsky, 1992; Lupton, 2003; Zinn, 2008). Individuals, once correctly informed, with a little bit of help from experts will be morally obliged to take on the responsibility of avoiding health risks (Beck-Gernshein, 2000; Hayes, 1992; Lupton, 1995, 2003; Ristovski-Slijepcevic et al., 2007). Health becomes an autonomous task and a duty to be managed by the responsible citizen (Beck-Gernshein, 2000; Lupton, 1995, 2003; Rich & Evans, 2008; Watson et al., 1996; Robertson, 2001). Individuals are expected to voluntarily accept health and nutrition information, but this assumes that individuals have "total autonomy, full information, and free choice" (Slovic, 1992, p. 118). This approach to managing health and health risk through nutrition practices is problematic (Lupton, 1996; Ristovski-Slijepcevic et al., 2007) since the individual act of making everyday decisions about food cannot be abstracted from the sociocultural experiences of that individual. Furthermore, the narrow biological
perspective of contemporary health and nutrition education, which focuses on the biological aspects of food in relation to individual health, has been criticised for a lack of acknowledgement of the social dynamics of everyday life (Bouwman et al., 2009; Lupton, 1995, 1996; Wiggins, 2004).

Regardless of the problems with an individual approach and an assumption that individuals are equipped with an in-depth understanding of nutritional science (Lupton, 1996; Wiggins, 2004), information dissemination concerning nutrition in relation to health is a priority from the biological perspective (Bouwman et al., 2009; Niva, 2006). However, as the literature review suggests, increased information whatever its relevance to health, health risks, and everyday decisions concerning food choice may only increase uncertainty. Therefore, more information is unlikely to make the "healthy choice the easy choice".

No single approach to nutritional health education, such as information dissemination, facilitating behaviour change, or facilitating environment change is likely to bring about the changes in eating behaviours required to significantly improve the health of the population (Contento, 2007). With this in mind, nutrition educators are developing nutrition education programs which put research supported theories, from a variety of domains of knowledge, into practice (Contento, 2007). These interventions endeavour to meet the needs of specific population groups by providing information, facilitating behaviour change and facilitating and environments that will enable positive healthy eating practices (Contento, 2007). For example, in British Columbia, Canada, the BCHLA considers interventions which are community-based, school-based, and workplace-based (BCHLA, 2006). One particular program was promoting healthy foods in schools which included limiting access to unhealthy foods from vending machines and school cafeterias (BCHLA, 2006). However, no matter how successful the interventions are with the specific population groups within their specific environments there
may be many people who do not "belong" to any specific population group. Thus the need for interventions that reach beyond the specific group contexts, whatever these may be, remains.

Notwithstanding the theoretical considerations outlined above and decades of health and nutrition education research enquiring into knowledge acquisition and translation into action, a significant gap remains (Bisogni et al., 2002; Bouwman et al., 2009; Ristovski-Slijepcevic et al., 2007; Wiggins, 2004). Understanding why people do not act in accordance with health advice has not yet been fully investigated and a considerable gap remains in the existing knowledge base (Bisogni et al., 2002; Bouwman et al., 2009; Ristovski-Slijepcevic et al., 2007; Wiggins, 2004). Expert knowledge has been assumed to be objective and has been privileged over subjective and biased lay knowledge (Zinn, 2008). From this perspective of the expert, failure to act in accordance with expert advice on health risks may be construed as irrational behaviour (Zinn, 2008, emphasis added), or that despite their best intentions lay people appear to be "without a clue" (Beck, 1992, p. 58, Robertson, 2001). However, this perspective is incorrect (Beck, 1992) not only because experts are not infallible and may not recognize the changing status of knowledge (Otway, 1992), but also because risk, like health, means different things to different people (Douglas & Wildavsky, 1982; Hayes, 1992; Slovic, 1986).

The apparent non acceptance of expert scientific advice is not due to lack of knowledge or irrationality, but the outcome of subjective rationale based on knowledge derived from personal everyday experiences which are influenced by the socio-cultural environment in which an individual lives (Adam, Beck, & Van Loon, 2000; Beck, 1992; Denscombe, 1993; Douglas, 1985; Douglas & Wildavsky, 1982; Frankel, Davison & Smith, 1991; Hayes, 1992; Krimsky, 1992; Lupton, 1995; Otway, 1992; Williams & Calnan, 1996; Zinn, 2008). This lay knowledge is not without logic and rationality (Ristovski-Slijepcevic et al., 2007); however, many experts
fail to understand the subjective nature of lay knowledge (Beck, 1992, Otway, 1992) and are reluctant to acknowledge lay knowledge as legitimate (Robertson, 2001).

For health educators to fully understand the nature of lay knowledge about food choice, it is essential to understand how it is constructed within the sociocultural environment (Ristovski-Slijepcevic et al., 2007). There is a need to bridge the gap between different knowledges so that optimal eating for health may be understood in everyday language as well as in the language of science (Ristovski-Slijepcevic et al., 2007). It is unlikely that there is a single simple solution to addressing the apparent gap between knowledge and action with respect to decisions about food and health. Despite recurring criticism of current health education strategies regarding the lack of acknowledgement of the complex social dynamics of everyday life (Bouwman et al., 2009; Lupton, 1995; 1996; Wiggins, 2004), current government-sponsored population directed nutrition education programs (Health Canada, 2010) continue to focus primarily on increasing knowledge to simplify decisions concerning health, health risk and nutrition.

**Summary of the Literature Review**

The literature review drew from several research areas pertaining to health and food selection: Food choice; health, women, body shape and the social environment; women and health risk; the meanings of food; everyday food decisions; and health and nutrition education. Food choice is a complex process encompassing a range of factors interconnected with the social environment. People utilize heuristics to negotiate this process of decision making, which like any decision, has a degree of uncertainty. With respect to health risk, there is the potential for women to increase or decrease their health risk for a number of serious health issues through their eating behaviour. Making changes to eating behaviours, which have the potential to reduce health risk, maybe challenging in the current sociocultural environment of Western societies where a variety of factors have the potential to contribute to poor nutritional choices.
The meanings that women ascribe to food also have the potential to interfere with healthy eating practices and may not align with scientific notions of food. In the light of the preceding literature reviews, everyday food decisions are further complicated by the plethora of health and nutrition information that is available to many women making each decision about food more uncertain and complex. Finally, current health and nutrition education programs may not be successful in addressing the apparent gap that appears to exist between knowledge about health and nutrition and the selection of healthy food. This may be due to the lack of recognition, by health and nutrition educators, given to lay knowledge and the influence of the social environment on health and nutrition related to decision.
Chapter 3: Research Design

Researcher Role

My role as researcher in this research project was to design the research project, recruit participants, gather data through one-on-one interviews and focus group interviews, transcribe and interpret the data, and discuss the findings against existing knowledge concerning women's health and food choice. At the outset I was acutely aware that as a health conscious woman my personal knowledge regarding my own food purchases had the potential to influence and bias the way I undertook my role as researcher. The design of the research project was underpinned by several assumptions that I had made. I assumed that women who exercised would also be interested in making healthy food choices and locations where women exercised would provide a source of participants. In addition, I assumed that health conscious women would be quite specific about their personal health risks and how the foods they selected benefited their health. Thirdly, I assumed that like myself, the desire to eat healthily had been motivated by some definable event or events. Since it would be impossible for me to divorce myself from my own life experiences around health and food choice I endeavoured to design the interview process such that my influence would be minimised and my role was intended to be one of listening and observation.

My strategy was to design questions that were broad, semi-structured and open ended (Appendices A and B), and that invited a response of more than a few words. I then probed according to what each participant revealed as important and confirm answers with closed ended questions. I hoped that, other than my initial questions, each participant would direct a pathway of inquiry around their way of understanding their meanings of health, health risk, nutrition, and food choice. At each interview I followed the interview protocols I had designed (Appendices A and B). During the focus group interviews, other than asking initial questions to engage the
women in a conversation, I only intervened to ensure that all of the women had an opportunity to add to the conversation, to qualify responses, or to pose a new question. As with the one-on-one interviews, I hoped that the participants would direct the conversation, once initiated.

I initially reviewed the data transcriptions by coding for themes which presented themselves, rather than looking for themes which aligned with the literature and with my initial questions as to the meanings of health, health risk, and nutrition and food choice. I then analysed and interpreted the coded and themed data transcriptions alongside my research questions, and existing and relevant literature. Finally, I discussed the findings against the existing and relevant literature from the perspective of nutritional health education.

**Research Methodology**

A human centered qualitative, exploratory and inductive approach was taken to gather information from a specific group of women through one-on-one and focus group interviews. The intent of this research was to understand the "how, what and why" of women's grocery store food selections and a human centered qualitative methodology was followed. A human centered approach, based on phenomenological philosophy, allows the researcher to explore the meanings which people ascribe to phenomena and which determine their behaviour in real life situations (Palys & Atchison, 2008). This approach requires the researcher to "appreciate a person's behaviour in terms of the interpretative (i.e. phenomenological) meaning he or she ascribes to it" (Palys & Atchison, 2008, p. 430). Qualitative methods have been used successfully in other studies concerning the social context of food choice (Milburn, 1995). An exploratory approach to the research was selected because this approach has the potential to reveal important processes, concepts, themes and variables, which may add to existing knowledge about the subject of inquiry as well as identifying future research questions and possible sites of investigation (Palys & Atchison, 2008).
Because the intent of this research was to investigate the actual experience of food selection, an inductive approach was also selected as this "bottom-up" research approach allows for the observation of reality (Palys & Atchison, 2008). In addition, an inductive approach allows the researcher a broader perspective since it is not confined to a single theory or hypothesis (Palys & Atchison, 2008). Currently there is no dominant theory in nutrition education (Achterberg & Miller, 2004). Nutrition education and intervention programs often rely on various theories of health behaviour, but none of these theories, on their own, fully describe all the dimensions of food and nutrition related behaviour (Achterberg & Miller, 2004).

In qualitative approaches, valid data should arise from close contact with the study participants (Palys & Atchison, 2008). Accordingly, one-on-one interviewing, an interactive research method which allows for close and in-depth conversations with the study participants, was utilised. Semi-structured and open ended questions were used to generate broad responses while structured questions were used sparingly to qualify responses (Palys & Atchison, 2008). Qualitative research also suggests extended contact with the study participants (Palys & Atchison, 2008). This was achieved through post interview contact and the focus group interviews.

The focus group interview was a relevant data collection method for my study for several reasons. Firstly, focus group interviews have become popular in exploratory health research which seeks to explore how individuals understand and apply meanings to health (Wilkinson, 1998). The interactive nature of focus group interviews has the potential to generate different opinions and perspectives held by the interviewees on a particular topic and allows for the expression of beliefs and values (Palys & Atchison, 2008; Wilkinson, 1998). This can lead to in-depth discussions that enable the respondents to develop their own concepts about the topic under discussion (Palys & Atchison, 2008; Wilkinson, 1998). Secondly, focus group interviews
are also an excellent research method for a researcher who is interested in understanding the thinking and talking patterns of a specific population group in a particular social context (Wilkinson, 1998). As in the one-on-one interviews, the questions were semi-structured and open ended, and the responses were validated with structured questions.

**Recruiting Participants**

Prior to recruitment ethics approval was sought from and provided by the University of British Columbia Behavioural Ethics Board (UBC BREB). The participants were self selected through a non-probabilistic purposive sampling process (Palys & Atchison, 2008) initially at two women's only fitness facilities, a small personal training facility and two local running attire stores. All businesses were located in a suburban area of White Rock and South Surrey, British Columbia, Canada, and were expected to provide a source of participants which met the inclusion criteria. Demographic indicators revealed that the population in this area is one of the most affluent in the Lower Mainland of British Columbia with high levels of education, income and life quality (Statistics Canada, 2006). The population of women in the required age group was over 10,000 and the area provided a variety of easily accessible grocery stores, both large and small, and ample opportunities for physical activity, both commercial and municipal.

I contacted the owners or managers of the businesses either in person or my mail depending on their availability. The owners were asked to participate in the project by providing their permission for me to advertise the study in their facility. Each owner received a letter (Appendix C) and a consent form (Appendix D) which summarised the proposed project with the request to place one poster (Appendix E) and several brochures (Appendix F) in their premises. The research study was also advertised in a local area newspaper (Appendix G). One women's only fitness facility and one running attire store declined the invitation to participate. Ethics approval was sought and provided by UBC BREB to extend the recruitment to three other fitness
facilities. Only one of these three fitness facilities positively responded to my request to advertise the study. Due to interest from several women between the ages of 40 and 49 the study group inclusion criteria were changed to include women up to the age of 49. Ethics approval was sought and provided by UBC BREB for the change in the inclusion criteria, for a second newspaper advertisement and modified consent forms which indicated the change in age limit.

A total of five area businesses consented to my request to recruit participants and recruitment started on May 24th, 2010. The respondents made contact with me either by phone or by e-mail. After confirming that the respondent met the inclusion criteria (Appendix H) I e-mailed the consent form (Appendix I) to the respondent. I arranged to contact the respondent by phone or e-mail in 3-4 days to answer any questions about the research project and confirm her consent to participate. Once the respondent had confirmed her consent to participate, I scheduled her one-on-one interview at a time and location convenient to her, but as close to a recent grocery store food purchase as possible. All of the participants consented to both the one-on-one interview and attendance at one focus group interview. When I had interviewed eight women I scheduled a focus group interview which was attended by six of the women. When I had interviewed five more women I scheduled a second focus group interview which was attended by five women. I was unable to arrange a third focus group interview due to the varied commitments of the remaining participants.

Each participant received a nutritional health related gift to the value of $25 and a nutritional information session valued at $50. In most cases the gift was a nutritional health related book, but two women received gift cards to a preferred grocery store and one woman requested I make a donation to the local food bank on her behalf. The invitation to participate also drew the interest of three older women who contacted me to learn more about the project, a
nutrition consultant for a nutritional supplement and a representative from an international beverage company who indicated interest in the findings from the study.

**Participant Criteria**

The inclusion criteria for participation (Appendix H) was developed specifically to provide a unique group of women which was as homogeneous as possible and in which influencing variables such as age, education, and economic and exercise status were reduced.

- Women between the ages of 20 and 49 years
- Health conscious in that they exercised and selected foods that benefited their health
- Had access to a variety of health and nutrition information sources
- The cost of food was not a dominant factor in their food selection
- The women were primarily responsible for their actual food selection.

Women in this age group are potentially independent, have autonomy over their own decisions about food, and may have been exposed to health, health risk, and nutrition information through various media and educational outlets for several years (Rich & Evans, 2008). The literature suggests that women in this age group use health education information (Cowburn & Stockley, 2005), may be influenced by the thin ideal endorsed by society (Battle & Brownell, 1996; Irving & Neumark-Sztainer, 2002; Lupton, 2003; Zachrisson et al., 2008; Zerbe, 1993), may be dissatisfied with their body shape (Zerbe, 2008), hold strong beliefs about health such as being in shape, controlling body weight, and slowing the aging process, (Lupton, 2003), and use food to control their body shape and their identify (Heenan, 2008). In addition, women in this age group are likely to have experienced significant life stages and life events such as forming relationships, partnerships, employment, pregnancy, child rearing, and caring for others which may affect their beliefs and values towards their own health and decisions about food (Zerbe, 2008). While women in this age group may have developed clear health and nutrition
objectives on which they base their point-of-purchase food selections, they may be responsive to
new health and food related information and may be able to elucidate how they incorporate new
health and nutrition information into their existing knowledge.

State sponsored health initiatives generally promote healthy eating and exercise together
as part of healthy lifestyle choice which decreased health risks (BCHLA, 2005, 2007; SIHLN,
2005, SSCH, 2004). Previous research suggests that women who make healthy food selections
also include physical activity as a positive lifestyle behaviour (Chapman, 1999; Chapman &
Beagan, 2003). The women in this study were required to be health conscious in that they
engaged in health related activities, such as being committed to planned exercise several times a
week and made food selections to benefit their health. The women were also required to have
access to a variety of health and nutrition information sources as increased access to educational
and economic resources is thought to increase an individual's to power to choose (Beck, 1992;
Devine, 2005; Lupton, 2003, Zerbe, 1993). Increased access to information also has the
potential to increase uncertainty in decision making due to the confusing nature of health and
nutrition information available. This group of women may be able to indicate how they manage
information and uncertainty around food decisions with respect to their point-of-purchase food
selections.

It is well documented that socioeconomic and environmental factors have the potential to
restrict food choice (WHO, 2009). Therefore, to minimise the constraints of these factors the
study participation criteria included the condition that cost should not be a primary or overriding
concern when selecting their groceries and the study participants should have access to a variety
of food markets and increased options for food selection. Thus this group of women may have
greater access to a variety of foods and their food “choices” may be less bounded. Finally, the
women should be primarily responsible for their food selection, preferably for both planning and
purchasing the foods they consumed or at the very least responsible for the foods that were selected. This condition was included to avoid eating healthily by default because someone else was selecting and purchasing the food that was consumed.

**Sample Size**

I had intended to recruit a total of 20 women, but only 18 women, who met the inclusion criteria, responded to the invitation to participate in one-on-one interviews and focus group interviews. Two of the women declined to participate prior to the one-on-one interview. Two of the participants endeavoured to gain the interest of several of their friends to no avail. Because obtaining more respondents through snowballing was not likely to be fruitful and extending the recruitment area had the potential to reduce the homogeneity of the study group, the recruitment process was closed with the acknowledgement of the principal investigator. A total of 16 women participated in the study with all 16 completing one-on-one interviews. Two focus group interviews were organised with six women participating in the first focus group interview and another five participating in the second focus group interview. Although the remaining five women were willing to participate in a focus group interview it was not possible to arrange a time and location that suited a sufficient number of women to facilitate a third focus group interview.

**Permission**

Ethics approval for the research study was sought and received from UBC BREB. All the business owners who consented to my request to advertise the research project completed a consent form (Appendix D) and retained a copy for their records. All of the prospective participants were provided with the opportunity to ask questions about the consent form (Appendix I) and the interview process prior to the scheduling of the one-on-one interview. A minimum of 48 hours was provided between receipt of the consent form and the follow up phone
call or e-mail to arrange the one-on-one interview. All participants consented to both a one-on-one interview and to participation in one focus group interview, but there was a clear understanding they could withdraw from the study at any time without loss of remuneration. Each woman provided me with a signed consent form indicating they consented to the audio-taping of their one-on-one interview and the focus group interview and each woman was provided with a copy of her consent form for her records.

**Data Collection**

The method selected was a simulation of how women go about their grocery store food purchases. Specifically, the processes and procedures the women have in place to facilitate purchasing food at the grocery store, the attributes that they apply when making their food selections, their actual food selections and how they reconcile their actual food selections with their intended food selections.

The data collection took place between May and October 2010. The women ranged from 20 years of age to 49 years of age. The participants' ages, physical activities, household set up and grocery store preferences are documented in Table 1 where pseudonyms have been used to maintain confidentiality. All of the women selected food that would benefit their health and had access to a wide range of health and nutrition information. Eleven of the women were the primary food decision makers and selectors in the household and the remaining five shared the responsibility for food purchasing and meal planning at least equally with their partner or other family member. Only one woman did not live in the South Surrey/White Rock area and had picked up the brochure from one of the women's only fitness facilities when visiting family in South Surrey. The inclusion criteria did not require that participants live in the South Surrey/White Rock area and this participant was agreeable to travelling to South Surrey for the focus group interview.
Table 1. Profile of the study group

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Physical Activity</th>
<th>Family unit</th>
<th>Stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jodi</td>
<td>32</td>
<td>Walking, weights</td>
<td>2 adults (self and spouse) 1 child</td>
<td>Safeway, Wal-Mart, Thrifty's Buy-Low, Price Smart, Superstore, Other</td>
</tr>
<tr>
<td>Erica</td>
<td>35</td>
<td>4 hours week walking low intensity</td>
<td>2 adults (self spouse) 2 children</td>
<td>Buy-Low, Choices, Price Smart, Costco, WR Farmer's Market Hazelmere Farm</td>
</tr>
<tr>
<td>Vicky</td>
<td>20</td>
<td>2 hours/day running, gym.</td>
<td>4 adults (self, parents, brother)</td>
<td>Save-On, Costco, Kin's Market</td>
</tr>
<tr>
<td>Lillian</td>
<td>49</td>
<td>Walking, swimming</td>
<td>2 adults (self and spouse) 1 child</td>
<td>Safeway, Wal-Mart, Thrifty's. Save-On, Price Smart, T&amp;T</td>
</tr>
<tr>
<td>Katie</td>
<td>28</td>
<td>5-6 hours week Gym, golf</td>
<td>2 adults (self and fiancée)</td>
<td>Safeway Wal-Mart, Save-On</td>
</tr>
<tr>
<td>Caitlin</td>
<td>40</td>
<td>Personal trainer 20 hours week</td>
<td>2 adults (self and spouse)</td>
<td>Choices Save-On, Price Smart, Costco, The Bread Box</td>
</tr>
<tr>
<td>Coleen</td>
<td>34</td>
<td>Running, cycling, Marathons</td>
<td>2 adults (self and spouse) 1 child</td>
<td>Wal-Mart, Thrifty's, The Bread Box</td>
</tr>
<tr>
<td>Taylor</td>
<td>40</td>
<td>5-6 x week Running, gym</td>
<td>1 adult</td>
<td>Thrifty's, Choices, Save-On Kin's Market</td>
</tr>
<tr>
<td>Bernice</td>
<td>20</td>
<td>Walking the dog</td>
<td>3 adults (self, mother and grandmother)</td>
<td>Safeway, Save-On</td>
</tr>
<tr>
<td>Julie</td>
<td>42</td>
<td>Walking, Tai Chi</td>
<td>2 adults (self and mother)</td>
<td>Price Smart, Other</td>
</tr>
<tr>
<td>Cassie</td>
<td>38</td>
<td>Gym several x week, soccer</td>
<td>1 adult</td>
<td>Buy-Low, Choices, Hazelmere Farm, Other</td>
</tr>
<tr>
<td>Stephanie</td>
<td>35</td>
<td>Marathons, rock climbing, cycling</td>
<td>1 adult</td>
<td>Safeway, Granville Island</td>
</tr>
<tr>
<td>Natalie</td>
<td>23</td>
<td>Gym 3 x week work</td>
<td>1 adult</td>
<td>Choices, Price Smart, Kin's Market</td>
</tr>
<tr>
<td>Maggie</td>
<td>49</td>
<td>Walking, Yoga 2 x week</td>
<td>2 adults (self and spouse) 2 children</td>
<td>Wal-Mart, Save-On, T&amp;T, Kin's Market, Penguin Meats</td>
</tr>
<tr>
<td>Emily</td>
<td>38</td>
<td>Walking, Yoga, Pilates 2-3 x week</td>
<td>2 adults (self and spouse) 2 children</td>
<td>Choices, Price Smart, The Bread Box</td>
</tr>
<tr>
<td>Danielle</td>
<td>32</td>
<td>Walking and work</td>
<td>2 adults, (self and spouse) 4 children + home stay student</td>
<td>Wal-Mart, Superstore, Costco The Bread Box</td>
</tr>
</tbody>
</table>
The one-on-one interviews were arranged as close as possible to a recent grocery store purchase and the participants were asked to provide the receipts from this last visit to help initiate the discussion about their food selections. Each participant chose the location for her interview. Six of the women came to my home, two women requested I go to their homes, another to her office, two women selected a coffee shop in a South Surrey shopping mall, three women selected a coffee shop in White Rock, one woman came to the location of the focus group interview, a community room, and another selected a coffee shop in Kitsilano. The length of the interviews ranged from 20 minutes to 1 hour and 20 minutes. Each one-on-one interview was audio-taped (with the consent of each participant). I followed the protocol and questions for the one-on-one interview as approved by UBC BREB (Appendix A). Each participant received a follow-up phone call or an e-mail according to their preference to obtain feedback about the interview. All participants were provided with the opportunity to receive a transcript of their own one-on-one interview for review to determine whether the transcript was an accurate representation of their responses. One participant declined the offer.

Two focus group interviews were arranged and conducted in a community space in South Surrey, British Columbia. The first focus group interview was held at the end of August, 2010 and the second focus group interview in mid September, 2010. I followed the protocol for the focus group interview as approved by UBC BREB (Appendix B). All the women who had participated in the focus group interviews were contacted by e-mail after the interview to receive feedback. The participants received their remuneration as outlined in the consent form.

**Confidentiality**

All participants were required to sign an informed consent agreement which laid out participation expectations, expected costs, gratuities, and benefits or risks associated with the interview process (Palys & Atchison, 2008). This provided an opportunity to confirm that
participants were willing to enter into conversations of a somewhat personal nature.
Confidentiality was discussed with all participants, although only limited confidentiality was
guaranteed for the focus group participants. The identities of the interviewees and the
information that emerged from the interviews remains confidential and will only be used for the
purposes of my research and thesis. I have provided the participants with pseudonyms (Palys &
Atchison, 2008) for the purpose of this thesis and assigned code numbers to other written
documents that resulted from my research. Any material which linked the pseudonyms with the
interviewees is safeguarded by storing indentifying material separately from the data in a locked
filing cabinet. The data are stored in a secure computer file.

The participants were asked to maintain confidentiality with respect to other participants
and the interview content. This was stated on the consent form. The focus group participants
used their own names when attending the focus group interview. Because the interview process
had the potential to be somewhat personal in content, any questions which had the potential to
illicit responses about personal life experiences, which the participants may not want to share
directly with other participants, were posed during the one-on-one interviews and the questions
posed at the focus group interviews were less personal.

Transcription and Data Analysis

I transcribed the audio-taped interviews myself as a hands-on approach allows me to stay
as close to the data, and therefore the participants as I can, which is one of the benefits of
qualitative research (Palys & Atchison, 2008). I transcribed the audio taped interviews as
individual Word documents as soon after each interview as possible, usually within three days,
so that the content of the interview and the manner in which the responses were given were more
easily recalled. The transcriptions were word for word except for pauses and “hms”, and
emphasis was indicated by italics, bolding or inverted commas. The participants were initially
identified in my written documentation by an initial and a number which was later changed to a pseudonym for greater confidentiality and a more human perspective. The completed transcript of each one-on-one interview was sent to the participant for review to ensure that I had accurately recorded her responses. Where my transcription was at fault the participants were invited to clarify their response which I then corrected on my original transcription.

I made hard copies of each interview and began by colour coding the first interview transcript by identifying themes and concepts. I repeated this process with all the transcripts of the one-on-one interviews. The themes and concepts were identified by words and phrases which the women used to describe their thoughts, actions and feelings. I then set up a Word table document which brought together the various themes and concepts which had emerged from my initial questions. Health, health risk, food and food choice were four themes which have been identified by the literature and formed the framework for my analysis of the data. I began with the questions I had posed, based on the identified themes, which I then developed according to the patterns, clusters of sub themes, and concepts related to food choice which had been identified by the participants. I made use of the "find" action on Word to search for words and phrases in the transcribed documents. As I brought the themes and concepts together I continually returned to the transcripts and searched each document for additional data that corresponded with the growing number of themes and variables.

To assist in my transcription of the focus group interviews I made field notes to identify who was speaking. However, the women’s voices were quite distinctive and I was able to identify them without the use of my notes. I followed the same procedure for data analysis with the focus group interviews, setting up a separate document and identifying themes and concepts, colour coding the transcript and reviewing the transcripts for additional data. There was some overlap with the one-on-one interview analysis. Finally, I put together the analyses of the one-
on-one interviews and the focus group interviews under the main headings from the questions and the subthemes and concepts which had evolved from the interview process.

**Trustworthiness**

In qualitative research trustworthiness refers to the reliability of the observations and validity of the interpretations, and reflects the quality of the research (Marshall & Rossman, 2006; Stiles, 1993). Trustworthiness concerns how well the researcher's account represents what the researcher observed (Stiles, 1993) and identifies whether the findings of an inquiry are worthy of attention. Lincoln and Guba identified four criteria, credibility, transferability, dependability, and confirmability (Marshall & Rossman, 2006) by which trustworthiness of qualitative research can be determined.

**Credibility**

To ensure the study has credibility or believability, the researcher must provide evidence which demonstrates that the way in which the inquiry was conducted provides for adequate identification and description of the participants (Marshall & Rossman, 2006). In addition, because only the participants are in position to judge the credibility of the results of qualitative research, it is necessary for the researcher to verify that, from the perspective of the participants, the results of the research are believable (Marshall & Rossman, 2006). In this study, my approach to establishing credibility included an interview follow-up procedure wherein I confirmed statements and verified the transcripts of the one-on-one interviews with the participants. I have described the participants within the limits of the inclusion criteria and I also included many quotes from each participant in the reporting of the data findings. As Marshall and Rossman suggest (2006) I have described the boundaries around and the limitations of the research method.
Transferability

Transferability refers to the degree to which qualitative research results can be generalized to other similar contexts or settings (Marshall & Rossman, 2006). As discussed by Marshall and Rossman (2006), transferring or generalizing the findings from a qualitative study to different populations may be problematic. From the perspective of qualitative research, it is the responsibility of the "user" of the results of a study to assess the applicability of the results to the new context or setting. Transferability can be enhanced when the qualitative researcher provides a detailed description of the context of the research and any assumptions central to the research (Marshall & Rossman, 2006).

In this study, I have endeavoured to show how the underlying concepts and model guided the data collection and analysis. The data analysis also brought together data collected from one-on-one interviews and focus group interviews which was provided by multiple informants. The data from the focus group interviews corroborated and elaborated on the data from the one-on-one interviews. In this way, as suggested by Marshall and Rossman (2006), the findings of this study may not only be transferable to women between the ages of 20 and 49 with similar educational, economic, and social backgrounds as the women who participated in this study, but may also be useful for other settings.

Dependability

The context of a qualitative research study is ever-changing and dependability refers to the need for the researcher to account for the changes that occur during the study period (Marshall & Rossman, 2006). The researcher is responsible for describing various changes that occur in the setting and in her own understandings of the subject, and how these changes affected the way the researcher approached the study.
I was able to observe any changes over the duration of the study through the interview follow up process. I also had the opportunity of observing 11 of the 16 participants for a second time at the focus group interviews. There was some overlap between the questions posed at the one-on-one interviews and focus group interviews and I was able to observe any contradictions or changes in what had previously been said. With respect to my personal experience during the study period, I was challenged to re-examine my own beliefs concerning the topics discussed. Throughout the investigation I strived to critically review my interpretations of my observations by continually returning to the audio-tapes and transcripts to ensure that I was not misinterpreting the observations or making assumptions about those observations.

**Confirmability**

Confirmability concerns the extent to which the study results can be confirmed and substantiated by someone else (Marshall & Rossman, 2006). Because each qualitative researcher considers the study from a unique perspective there are several tactics, discussed by Marshall and Rossman (2006), which the researcher can employ to strengthen confirmability. The researcher can describe and record the process used to check and recheck the data throughout the study. The researcher can also test the strength of the argument by employing another researcher to critically question the researcher's analysis. Another tactic requires the researcher to consciously search for and describe any contradictions to prior observations. The researcher may also provide sets of notes taken throughout the research study and which provide description of the study and of the personal reactions of the researcher. Confirmability may also be enhanced by referring to the literature concerning subjectivity, bias, and data quality. Finally, once the study is completed, the researcher can audit the data collection and analysis process with respect to the potential for bias and misinterpretation.
In this study, I endeavoured to achieve confirmability by documenting the process I used to check and recheck the data. I have revisited the data and analysis procedures with the purpose of identifying any potential for bias and misinterpretation and to ensure that I had adhered to my interview method developed to minimize my control of the conversations.

Summary

I interviewed a total of 16 women between the ages of 20 and 49 who were health conscious in that they selected foods that would benefit their health and they were committed to regular physical exercise. The women had access to a variety of sources of information about health, nutrition and food, were the primary selector and purchaser of food at the grocery store, and cost of food was not an overriding concern for them. This group was unique and relatively homogenous. I also organised two focus group interviews with eleven of the participants. Participants were recruited through fitness related businesses and adverts in the local community newspaper. The data was gathered through one-on-one interviews and focus group interviews using semi-structured open ended questions and closed ended questions to qualify responses. The women received a $25 health and nutrition related gift and a nutritional information session valued at $50. Each participant was asked to review the transcription of her own interview, and each participant was contacted by e-mail after the interviews for feedback on the interview. The data was coded and the analysis and interpretation revealed a number of themes.
Chapter 4: Findings; Blueprints for Food Selection

Introduction

Four broad themes emerged from the analysis of the data collected through semi-structured open ended interview questions: "blueprints", planning, "the grocery baskets", and reflections on nutritional health education. Chapter 4 provides the analysis of the blueprints and Chapter 5 provides the analysis of the women's planning process for food selection at the grocery store, the practical application of their plans, and their reflections on nutritional health education.

The analysis of the women's "blueprints" considers unique interpretations of health, personal understandings of health risk and the multiple meanings of food. Connors et al. (2001) provide the concept of "schemata," a cognitive framework which enables people to simplify complex decisions through classifying and categorizing a range of values associated with food choice (p. 198). I use the term "blueprints" to describe the schemata that the women in the study have developed to simplify their food selections. The food-process model (figure 1) put forward by Connors et al. (2001) provides details of the complex process of food choice and the many factors which contribute to food selection. How people value health is in itself a complex process and is intricately associated with food choice (Connors et al., 2001). This study was particularly concerned with how the women's meanings of health, health risk, and food affected their food selection at the grocery store and the questions posed to the women were intended to explore how the women applied their health values to food selection. Chapter 4 concludes with the findings from the questions concerning influences on healthy eating.

Unique Interpretations of Health

Health means different things to different people (Lalonde, 1974; Legowski & McKay, 2000; Lupton, 1995, 1996; Health Canada, 2008; WHO, 1986), but a concept of health that appears to be accepted by various individuals includes a healthy body and eating nutritious food
Notions of health are also holistic, incorporating spiritual, mental, and autonomous aspects, as well as a physical image of a fit body that is lean, well shaped, no visible fat, and strong (Lupton, 1995; Markula et al., 2008). How clothes fit, how an individual stands, and whether an individual is ill are also included in concepts of health (Lupton, 1995) and health, or attaining good health is often associated with identity (Lupton, 2003).

Health and Feeling Good

The women's responses to my question; "what does health mean to you?" provide support for the understandings of health noted above. Although all of the women alluded to health being "a whole bunch of things...a healthy physical body and a healthy mind and then add healthy nutrition to that to make a whole package" such as Katie did, different "things" were variously included in each woman's meaning of health and no two women shared exactly the same meanings of health. Several of the women referred to the concept of holistic health which emphasised a connection between the various components they attributed to health.

*Erica:* All aspects for me personally, my health it means my diet, my level of physical activity, level of stress, my relationships all the aspects of my life, how things are running...smoothly.

*Julie:* Looking at harmony of the body, harmony of the mind and harmony of the spirit.

*Cassie:* it's not just physical health...my physical shape, my mental health, my emotional health I see that as an umbrella...a balance of all of those and if one of those... or a couple of things are off then everything seems off.

In addition to being holistic, health for this group of women was frequently described as "feeling good" which was the outcome of a balance between nutrition, level of physical activity, and physical and mental wellness. While these findings indicated a common understanding of health in a general sense, at an individual level meanings of health became diverse. Terms such
as feeling good, feeling energetic, and feeling healthy permeated many of the conversations and alluded to a variety of physical and mental attributes. Five women cited having energy or being energetic as feeling good, while being vibrant was cited by two women and getting adequate sleep by two women. Two women included not being tired and two included feelings of wellness and mental well being in their meanings of health. Health included being happy for three women and for two women the prospect of longevity was important. For two women, the concept of health included a feeling of balance, and individual women also cited having a positive attitude, feeling strong enough to take on the day's activities, being at an optimal weight "feeling wise", and feeling good on the inside as meanings of health.

Being disease free contributed to feeling good and was cited by ten of the women as part of the meaning of health with two women specifying certain diseases such as diabetes and arthritis, and another woman speaking more generally about aches and pains.

*Lillian: Health is when you don’t have to go see your doctor too often.*

*Maggie: No sickness no worry about sick.*

*Julie: I see disease as unease.*

Feeling good was also associated with eating well or healthy nutrition.

*Danielle: You just feel better when you eat better...I feel good about feeding my kids good food.*

Good nutrition was an important component of the meaning of health for all the women in this study who responded in a variety of ways.

*Jodi: A balanced diet...vegetables, fruits, grains, proteins and some treats here and there.*

*Lillian: You eat nutritious food not junk food.*

*Bernice: Making healthy food choices.*
Like Bernice, seven of the women generalised healthy nutrition, while Cassie, like Jodi, gave a more explicit description of healthy foods. Six of the women identified good nutrition as supportive of their daily activities and this made them feel good. Jodi associated healthful eating with her identity and autonomy,

*I integrate into the person who I am it's a strong value for me...because I think that it is good for me, my health, my family's health to have the balanced diet that is going to make you healthy and productive on the inside and not as susceptible to as many diseases ...'cause I think there are so many things out there that could happen to us... add our own involvement in that.*

Five women considered healthy eating as a way to be proactive with their long term health and another woman noted a connection between eating healthily (or not) and other aspects of her life.

**Health and Fitness**

Regular exercise and fitness, considered essential components of a healthy lifestyle (Health Canada, 2010), were also important components of health for the women in the study group as noted by Natalie and Cassie.

*Natalie: Fitness is "100%" a part of health.*

*Cassie: I don't feel healthy if I'm not working towards my fitness....fitness is a big part of it.*

All the women recognised the physiological and psychological attributes associated with regular exercise although their preferred activities, and frequency and intensity of exercise varied considerably. For eight of the women, every day activities, such as walking to the stores, walking children to school or to the park, work and walking the dog provided regular exercise. Four women practiced yoga or tai chi several times a week, while four women preferred gym work outs and three women were involved in intensive athletic training.
Health, Body Weight and Body Image

Body weight was also featured in the meaning of health for several of the women, but had various interpretations such as Vicky's.

*Vicky: "I think a healthy weight is the factors which go to being that weight."

Vicky's notion of a healthy body weight not only reflected her physiological attributes such as her actual body weight, how much body fat or muscle she had, and her physical appearance, but also how those physiological attributes were achieved; that is, the type of diet and amount of physical activity undertaken which should be balanced. Actual body weight was not always a factor.

*Taylor: It's not about a number.*

Four of the women reported that the number on the scale was not a factor, while four other women reported it was a factor. Two women thought that the Body Mass Index (BMI), although not always reliable, could be used as an indicator of a healthy body weight, and three women observed that a healthy body weight would be different for every woman. Being realistic about their own body weight and recognising the limitations of their own physique was an important factor of a healthy body weight for two women, while maintaining a "comfortable" weight or being in a "comfort zone" determined health for two women. Three women could determine their healthy body weight by clothes that fit, three by feeling good, trim and healthy, and two by their energy level. The ability to move and do the activities one wanted were determinants of a healthily body weight for four women, and two women cited regular menstruation as indicative of a healthy body weight. As Stephanie indicated, notions of the meaning of a healthy weight can change.

*Stephanie: When I first started losing weight I wanted to weigh 120 lbs. I settled at 125 my lowest weight and then finally settled at 133. I knew at 125...my trainer did a body*
..."your body fat is too low...it's unhealthy"...I stopped getting my period...because my body fat was too low. So I talked to my doctor about it and it took quite a while to get around to the idea that I needed to weigh a little bit more to be healthy...it was a very foreign place to be... a bit of a hard transition to make and then to put on weight in a healthy way.

Physical appearance or body image was, for some of the women in the study, a component of their meanings of health. This finding supports previous research concerning women and healthy eating practices (Chapman, 1999).

*Bernice:* It's different for every person, for me you don't want to see a lot of extra weight, skin or fat around the hips or stomach.

*Emily:* There's nothing worse than sitting down and having a muffin top spilling over your jeans...it's a self esteem thing.

Four women referred to muscle tone, two women to a flat stomach, and four women cited no excess fat as important factors in their meanings of health, while two women included looking athletic and/or strong in their meanings of health. Two women considered that looking good increased their self esteem. Despite their personal conceptions of a healthy weight, three of the women did not consider that a person was healthy or not because of the way they appeared.

*Emily:* I wouldn't judge somebody as being healthy just because they're thin...I wouldn't look at being overweight as being particularly unhealthy.

This supports the literature which challenges the notion that being overweight or obese necessarily increases health risks and that being thin is an indicator of good health (Aphramor & Gingras, 2008; Gæssar, 2003).
Individual women commented on their own body shape using phrases such as, "weight in butt", "short waist", and being "from a family of heavy women", and observing, like Lillian, that there were things you cannot change so it is best to accept and work with what you have.

*Lillian: I'm not crazy to keep a body figure...I'm not a slim person... I have tried a couple of times to eat less exercise more...to lose some weight, but usually it bounce back. Then I thought that I would go with the body my mom gave me. I don't need to be slim [or] be attractive to men. I am married. I have a child.*

In general the women's responses about body image did not personally support the literature understanding that women are influenced by the "thin ideal woman" (Battle & Brownell, 1996; Irving & Neumark-Sztainer, 2002; Schebendach & Reighert-Anderson, 2000; Whitney & Rady Rolfes, 2005; Zerbe, 1993). None of the women looked to any media personality as a role model for body shape or health, although two of the women indicated that they knew women who did feel the pressure to be thin. Vicky observed that young women were more likely to consider female friends as role models and may try to lose weight to be like them. Coleen observed she was more likely to be influenced by images of athletic women and also reported that eating and exercise problems were not uncommon among women she knew of her age. Julie felt that, as a young woman, she had been influenced by the fashionable slim models to some extent.

In summary, the meanings of health expressed by the women in the study support the multidimensional concepts of health arising from the literature. In addition, the diversity in meanings of health among the women also supports the notion that there is no single meaning of health (Watson et al., 1996) and contrary to the literature (Battle & Brownell, 1996; Zerbe, 1993), the women in this study did not appear to be discontented with their physical appearance.
Personal Understandings of Health Risk

How women understood health risk was also an area of interest for this study. Nutritional health education programs frequently communicate health risks associated with particular eating practices with the objective of persuading individuals to decrease their risk by changing their eating behaviours (Lupton, 1995; Mckie et al., 1993). However, these programs have limited success due to people's diverse perceptions of and actions to reduce disease related health risks (Denscombe, 1993; Douglas & Wildavsky, 1982; Hansen, Holm, Frewer, Robinson & Sandøe, 2003; Joffe, 2003; Lee, Lemyre, Mercier, Bouchard, & Krewski, 2005; Lupton, 1993; Slovic, 1986; Slovic, Finucane, Peters & MacGregor, 2004).

Various reasons why the lay public does or does not act according to expert health risk advice have been put forward and include the following: the degree of familiarity with health risk (Slovic, 1992); dread factor (Denscombe, 1993; Lee et al., 2005; Slovic et al., 2004); vividness of risk, frequency of risk, sense of invulnerability, degree of anxiety (Denscombe, 1993); mental attitude and/or world view (Lee et al., 2005); level of trust in the information provider (Lee et al., 2005); whether the risk is externally or internally imposed (Lee et al., 2005); environmental beliefs (Lee et al., 2005); personal agency and level of control (Lee et al., 2005); immediate or future end result (Denscombe, 1993); fate (Denscombe, 1993; Lupton, 1995); and optimistic bias wherein one's own risk is not perceived as great as the risk to others (Hansen et al., 2003; Joffe, 2003), or thought it would not happen to them. The women in the study identified with some of these perceptions of health risk.

While some of the women shared similar meanings of health risk each woman expressed a unique understanding of health risk. Erica's perspective of health risk was general and perhaps fatalistic, but eight women were more specific, like Caitlin, and considered health risk to be any activity that had the potential to cause harm to the individual.
Erica: I think we are all at risk in some way or another.

Caitlin: Health risk would mean anything that could potentially cause disease...or even activity based that I would weigh as risky...Bungee jumping.

Potential health risk activities for four women included eating certain foods which may lead to high cholesterol levels, high blood pressure, and weight gain which may lead to heart disease or diabetes. Three women considered physical activities which may cause injuries, while three women included being sedentary or not exercising, and two women included inappropriate weight loss practices in their meanings of health risk. Four women responded in a similar way to Taylor,

Anything like smoking, eating horribly or generally not looking after yourself is going to put your health at a risk.

Two women, like Coleen, referred to mental attitude in their meanings of health risk.

Coleen: Subtle surreptitious things that play in your subconscious and come back and bite you. The little things that you do, that you're not always aware of, but sabotaging your health.

Other women put forward other health risk concerns. Emily considered environmental issues which may affect what goes into food in her understanding of health risk. Health risk also meant being at risk for a particular disease, such as diabetes, and this was often determined by a family history of a specific disease and/or the degree of familiarity with a particular health risk.

Lillian: Diabetes...my father was diagnosed with that problem... heart problem we don't have that family tradition, high blood pressure we don't need to bother about...breast cancer I don't think I'll get that... I have heard or learnt you have some family gene you get cancer. I have a few friends die from cancer...because their parents died from the same cancer.
In addition to Lillian, lifestyle related diabetes type 2 was also a concern for three other women, while heart disease was a concern for four women. Coleen saw cancer as a potential health risk and like Taylor had some minor concerns about osteoporosis. Knowledge of their fathers' high cholesterol levels and high blood pressure, despite being health conscious, was a cause of concern and uncertainty for two women's future health.

*Bernice: Down the road...my dad, he has both... he does triathlons...so I think it's more of a genetics issue. I could be wrong though.*

*Emily: My dad has blood pressure issues and cholesterol which is really strange as he's been a vegetarian since he was about 30...he's a manual labourer ... there are these factors that we need to be concerned about as we get older.*

Despite these women's potential health concerns they were not specifically selecting foods that have been reported to reduce the risk of various diseases such as cancer, osteoporosis, diabetes and heart disease. Previous research indicates that similarly situated women adopt healthy eating practices which tend to be holistic, that is of general health benefit, rather than specific to a particular disease (Hammond, Chapman & Barr, 2011).

Optimistic bias, a way of responding to health risk as noted above, may have supported one woman's response to the question.

*Natalie: I choose to...not know about my family history...I'm a firm believer of mind over body. So I feel if I don't think about it, it might not happen.*

The dread factor, another response to health risk, contributed to two women's positive actions for health. One woman tried to avoid the "fear factor" and used health risk information as a guideline, while another took care not to get "phobically" [sic] scared about the high incidence of melanoma, breast cancer, and heart disease in her family.
Whether the health risk was perceived as imminent or far off influenced the four younger women's perceptions of health risk. The women, who were aged between 20 and 30 years of age, even when there was a family history of disease, did not consider there was any immediate health risk although there was an expectation of health problems later on if they did not take preventative action through nutrition and exercise. As Vicky responded,

*Maybe not at my age because I'm only twenty.*

Stephanie and Maggie both had vivid recollections of their brushes with disease, at a young age, which have made them more aware of eating healthily to decrease health risks.

*Stephanie: To have high blood pressure and to be relatively young was scary...but there's so much information... eggs were good for you... were bad for you... were good for you again...sodium, trans fats and processed foods... I avoid them because of the risk of diabetes and heart disease.*

*Maggie: I had a thyroid problem before...I don't want it to come back.*

Eating healthily and being active were perceived as ways in which the women in the study could decrease their risk of particular diseases, although Caitlin observed that leading a healthy lifestyle did not reduce the potential health risk of being hit by a bus or drinking contaminated water. The responses of the women to the questions concerning health risk did not indicate a unified meaning of health. Although the meanings of health risk incorporated general understandings about particular health risks the degree to which each woman was concerned about her own health risk was dependent on her personal, familial and environmental circumstances, which influenced her actions to reduce those health risks. A similar finding has been recorded by Hammond and Chapman (2008) concerning women's healthy eating practices around bone health.
The Multiple Meanings of Food

As with the meanings of health and health risk the responses of the women to my questions related to their meanings of food identified many different understandings of food which supported the literature (Connors et al, 2001; Devine, 2005; Hansen et al, 2003; Lupton, 1994, 1996, 2003; Mckie et al., 1993; Zerbe, 1993). The meanings ascribed to food are intricately connected and, for the purpose of this analysis, have been gathered under the following headings; food meaning physical and emotional nourishment, where emotional nourishment refers to pleasure, anxiety, guilt and control; food meaning health; and food meaning natural.

Food Meaning Physical and Emotional Nourishment

Food as a necessary fuel for physical nourishment and food as emotional nourishment (Aphramor & Gingras, 2008; Bisogni et al., 2002; Gimlin, 2008; Heenan, 2008; Lupton, 1994; 1996; Markula, et al., 2008; McKie et al., 1993; Rich & Evans, 2008; Zerbe, 1993) were the two dominant responses provided by the women. Fifty percent of the women cited food as fuel as a primary meaning of food and enjoyment subsidiary.

Katie: If I didn't have to eat, I probably wouldn't eat.

Cassie: Food means really a very simple fuel...so that I can function, no more, no less for me.

Nine of the women identified food as nourishment for the body necessary to support the activities of daily living. Food was considered by one woman as a provider of energy and by two others as a means to satiate hunger. Fifty percent of the women identified enjoyment of food as paramount with food as fuel a secondary, albeit necessary, consideration and only two of the women were able to completely dissociate food as a fuel from food as pleasure.

Emily: Pleasure...it has to be.
Pleasure or enjoyment was the dominant emotional factor associated with food, but in accordance with the literature food evoked other emotions which contributed to their meaning of food (Lupton, 1996; Ristovski-Slijepcevic, et al., 2007; Zerbe, 1993). Three women's initial response was "I love food", two women viewed food as nourishment for the mind, and two women considered food to be intricately connected to their emotions.

Taste also contributes to meanings of food (Connors et al., 2001; Falk et al., 2001; Lupton, 1996). Seventy percent of the women found pleasure in the taste of food and thirty percent in the act of eating.

*Stephanie:* I like the taste... I like lentils in my salad.

*Julie:* I've always enjoyed eating. I find it very satisfying and actually fun.

Two women also enjoyed the entire experience of meal preparation; planning, grocery shopping, cooking, and eating. Family and cultural traditions influence food selection (Bisogni, et al., 2002; Fischler, 1988; Lupton, 1996; Niva, 2006). For five women, food was associated with memories of traditional home cooking which for two of the women included memories of their mothers' or grandmothers' cooking.

*Erica:* I'm Ukrainian, it's all about food, my Baba always preparing food so lovingly, taught my mother, taught me different recipes carrying on family traditions.

Food as pleasure can also mean reward, comfort and indulgence (Lupton, 1996; Zerbe, 1993). Fifteen of the women alluded to using food as a reward or "treat" which according to Coleen was,

*A treat...you know inside isn't the type of thing you should have every day.*

Treats, as defined by the focus groups, were foods that while they gave pleasure and/or satisfied some kind of craving, have the potential to negatively affect the body if consumed too frequently and had shared and individual descriptions as "add-ons", "weakness", "indulgence",

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fun food and comfort food, something "special", "eaten once in a while", a "splurge", and for a "quiet time", or "when I'm on my own". Treats provided a "feel-good experience", "de-stressed", "relaxed" and were a part of these women's healthy eating plans; a reward. Generally, treats were food items that did not fit within the women's concept of healthy nutrition and were not considered to be highly nutritious apart from the energy value. For example, foods high in sugar, fat, salt, or a combination of the three found in foods such as cheese-cake, ice cream, chocolate, fast food hamburgers, cookies, some cereals, pizza, processed meals, muffins, cake, salted peanut butter, and beverages such as pop and alcohol were categorised as treats.

The overriding factor was that treats tasted good and were enjoyed. While the majority of foods described as treats were highly processed foods, some foods generally accepted as healthy such as fruit, and lean meat were considered treats for three women who suffered from gastrointestinal complications. Four women considered bread and cheese a treat as they had difficulty in controlling the amount they consumed. Treats appeared to be an important part of the women's healthful eating practices, consumed in moderation and at time when each woman was able to indulge in a treat. One woman explained why treats were important for her and her children.

*Emily: If health is the whole thing ... I don't think we should be denying ourselves food to the point of it being... constantly on our minds ....I think if you're eating everything in moderation you are allowed to have yourself the odd treat now and again. Yeah I think it's very important not to be denied things.*

**The Social Meanings of Food**

The women in the study gained personal pleasure from eating food and in accordance with the literature (Bisogni, et al., 2002; Fischler, 1988; Lupton, 1996; Niva, 2006) also gained
pleasure from social interactions connected with food. Nine of the women spoke about the enjoyment and pleasure gained from the social interactions when sharing food with family and friends.

_Maggie: Yes we enjoy it...over the weekend we try to eat together, supper, breakfast we try and get together._

Eating together was identified by two women as a restaurant meal with friends, and as preparing foods for family and friends by six women. Four women referred to the social learning experience while preparing foods, alone or with family and friends

_Jodi: [Eating together] brings family together... entertaining friends and family... interest side cooking and learning._

However, while food provided a focus for social enjoyment some situations had the potential to create anxiety particularly when foods considered as treats were the predominant foods available.

**Food Meaning Anxiety and Guilt**

Food, in certain situations, can bring about feelings of anxiety and guilt (Aphramor & Gingras, 2008; Burns & Gavey, 2008; Heenan, 2008; Lupton, 1995, 1996). Preserving social relationships often comes before personal food preferences (Connors et al., 2001), and three women in the study spoke about social situations when refusal of an offered food item could be perceived as rude and ungrateful especially when the food item had been made for their benefit.

_Vicky: I made these cupcakes for you... have one._

Two women found it awkward to refuse foods which they may consume as an indulgence once in a while, but which did not fit with their day to day food preferences and one woman thought she may be considered obsessive if she refused. Three of the women observed that to refuse often led to continued persuasive attempts to "try it". One woman felt that she needed to have an
acceptable excuse, such as fitting into her bridesmaid's dress next year, accompanying any refusal of food. Stephanie observed,

*I was switching over to healthier choices... I've had a few friends who seemed to see it as a personal mission to get me to eat more or to get me to eat what they were eating.*

Anxiety extended to concerns over the prevalence of treats and "special occasion" food as "the norm" for snacks at pre-school, summer camps, and weekly school hot lunch days for three of the women with children. One woman worried that her children may become binge eaters when they were older if she denied her children too many treats or what other children accept as normal everyday food. Jodi referred to "hang ups" over certain foods which did not make her feel good. Coleen, although less anxious about the fat content of food and can now say, "cheese is lovely," referred to a "mindset" which tells her "it's alright, but don't overdo it". Two women both reported decreased self control over their food selections in social settings where their friends and peers freely indulged in foods that they considered less healthy and were trying to avoid or limit.

*Danielle: At work it's terrible... people bring food in all the time. One of the doctors always brings bags of chips and bags of pop corn... somebody[brings] some baking...I struggle...today I'm going to eat my good stuff, but if there's food I see it and I really, really want it.*

Loss of self control in adhering to healthy eating plans may lead to feelings of guilt (Aphramor & Gingras, 2008; Burns & Gavey, 2008; Chapman, 1999; Heenan, 2008; Lupton, 1995, 1996) when not being "good" (Chapman, 1999), and food may be referred to as "bad" or "unhealthy" (Fischler, 1988, p. 276; Lupton, 1996, p.6; Niva, 2006, p. 385; Rich. & Evans, 2008). Such was the case for some of the women in the study. Four of the women, like Taylor,
referred to feeling guilty about their loss of control when over indulging foods that were treats or foods which they considered less healthy.

\[\text{Taylor: Oh I shouldn't have done that.}\]

Three of the women referred to feeling guilty about eating foods labelled as "bad" or not the "healthiest". Taylor explained that she tried not to get into the "food is evil sort of thing" and observed that women are "terrible" for getting into the "guilt thing" over food. Vicky recounted that she had "disciplined" herself by increasing her exercise and observed that some women may adopt stringent exercise practices because they felt guilty about their eating practices.

**Food Meaning Control**

Vicky's disciplinary action for over indulging is not unusual and as reported in the literature women also use food as a means to be in control of life situations which cause emotional distress (Aphramor & Gingras, 2008; Gimlin, 2008; Heenan, 2008; Lupton, 1994, 1996; Markula, et al., 2008; McKie et al., 1993; Rich & Evans, 2008; Zerbe, 1993).

\[\text{Coleen: I felt this incredible power to be able to will myself not to eat... I could see myself getting leaner and leaner... I loved how it felt... I loved the recognition that came... I wasn't being teased anymore}\]

Acceptance through body image underpinned Coleen's disordered eating patterns. As a young girl she was teased relentlessly about her unusual body type. She discovered accidently that by exercising like a "maniac" and severely restricting her food intake she could improve her body shape and gain acceptance from her peers and teachers.

Rigorous self control over the food they ate had provided Coleen, Caitlin and Julie a means to cope with aspects of their life they seemingly had no control over. Caitlin and Julie both recounted traumatic adolescence years. As a young model Caitlin became adept at controlling her food intake and to cope with her emotions, concerning her parents' separation and
her subsequent move to foster care, would either completely abstain from food or binge and
purge. Julie used food to comfort her emotions concerning sexual abuse and her parents' separations. Initially "food became like my friend" causing Julie to gain weight. At university, to overcome feeling out of control, over eating was replaced subconsciously by food restriction and Julie became almost anorexic revelling in her successful weight loss and new waist measurement. Coleen and Vicky both referred to the experience of "downward spirals" to describe loss of control over healthy eating patterns which resulted in loss of emotional well being for both women and at times resulted in physical ill health for Coleen.

In addition, Coleen observed that many of her women friends had, like her, experienced disordered eating behaviours. This adds emphasis to concerns expressed in the literature (Burns & Gavey, 2008; Lupton, 1996; Zerbe 1993; 2008) that the eating practices of many apparently healthy women are unhealthy and may increase their risk for a variety of adverse health outcomes generally associated with eating disorders. Furthermore, Vicky observed that several of her friends and the women she met at the gym were not interested in eating healthily, which may indicate that some women, as observed by Burns & Gavey (2008) are not interested in, or do not understand the value of eating.

**Identifying Healthy Food**

As discussed above, health for many of the women in the study meant "feeling good" both physically and emotionally and food, particularly food considered to be healthy, contributed to that sense of "feeling good". For Taylor, eating food that was not healthy or good did not "feel good". The simulated "grocery baskets" that the women brought to the interview were direct representations of what they considered healthy food. The discussions around their selected food items led to broader discussions about healthy and "not so" healthy food, why they avoided particular foods, and who and what influenced their food selection.
When asked why they had purchased a particular food item their initial responses included the following reasons. Fifteen of the women referred to nutritional value when discussing their food selections, four women identified taste, and six women considered the enjoyment in their food selections. Other reasons included for two women versatility of preparation, five women had purchased food items for someone else and one woman selected goat's milk because she believed it to be healthier than cow's milk. Convenience was also a factor in food selection.

Bernice: Muffins…The convenience factor. I can eat it on my way to work. I can eat it at work. Whereas a lot of other breakfast foods they take time to prepare

Like Bernice, two other women selected food for its convenience and cost was a primary response for four women, although all the women took cost into consideration to some degree. The source of the product and buying from habit were responses of two women. Each woman's purchases were different and purchased for a variety of reasons. For some women, the food selections represented the participant's usual purchases, but for others, such as Caitlin, some factor had influenced the purchases and thus the selections were not necessarily reflective of a normal food selection.

Caitlin: My niece…is down for the month [and] didn't want plain chicken …[I bought] got this cream of mushroom sauce for the chicken and it was a huge hit.

Everybody loved it...it's fat laden … stuff I would not eat on a regular basis.

Despite the differences in the food selections the women revealed common beliefs and perceptions concerning food and its relationship to health. This is not uncommon in any sociocultural environment (Bisogni et al., 2002; Bouwman et al., 2009; Connors et al., 2001; Falk et al., 2001; Fischler, 1988; Oakes, 2005; Ristovski-Slijepcevic et al., 2007) and the women in the study expressed understandings about healthy or good food, unhealthy or bad food, and
junk food which supported this previous research. For all of the women in the study, the nutritional content of food was an important factor underlying their food selections and, although not always explicitly stated, selecting from a variety of foods was considered an essential component of a healthy diet. Erica's response reflected the findings of recent research which suggests that women consider healthy eating from a holistic perspective by consuming a range of healthy foods (Hammond et al., 2011).

*Erica: I try to make sure they are nutritious...we are eating a wide variety of nutritious ingredients in our overall diet.*

Fruits and vegetables topped the list of healthy foods for all of the women, followed by sufficient protein, carbohydrate and fat. All of the women used the term "good" in their descriptions of healthy food. Other words used to describe the healthfulness of food included for eight women, "healthy", four women used the word "healthier", three the term "unhealthy", while "not so" or "less healthy" were used by five women, and "bad" by sixty five percent of the women, although the term was not used very often. Five women referred to "junk food" and Lillian also used the terms "somewhat healthy" and "moderately healthy". Some of these words were used to describe the health value of a particular nutritional component. For example, six of the women referred to "good fats" and/or "bad fats" when describing items in their food basket. For example, avocado, nuts, and salmon were considered sources of good fats whereas butter was identified as a "not so" good fat.

**Healthy, unhealthy, and junk food.**

To gain a clearer understanding of what these terms meant in relation to the women's food selections, the women who attended the focus group interviews were asked to collaborate on definitions for healthy/good, unhealthy/bad and junk food. Healthy food was defined in the following ways,
Jodi: There's value in it for your body as opposed to kind of empty calories...it tastes good.

Bernice: Not too many ingredients in it...not very processed more natural I suppose.

Coleen: You don't feel any guilt after eating it in any way you don't even think about it you feel good psychologically when you eat it.

Foods considered healthy or good were nutritious, contained vitamins and minerals, were less processed, contained few ingredients, and tended to be more natural. In addition, when they ate foods considered healthy and good the women felt mentally and physically good. Healthy foods included the following: fruits and vegetables, whole grains, such as whole wheat bread and pasta, whole grain rice, oatmeal, and quinoa, lean meat, chicken, fish, especially salmon, beans, lentils, chick peas, plant oils, eggs, dairy products, and soy products.

Unhealthy or "bad" food was defined as food which contained additives, added sugar excessive amounts of salt, non-natural (hydrogenated) fat, and unpronounceable ingredients. Unhealthy or less healthy foods included the following; highly processed/refined (white) grain products, processed foods, desserts, fast food, and high fat and/or sugar foods. Several of the women had developed various rules of thumb by which they quickly identified less healthy food options.

Katie: Something you can always get 3 for $4.

Erica: [Contains] anything you can't pronounce.

Caitlin: If it doesn't rot don't eat it.

Julie: [Contains] nothing that's going to help your bones or tissue to be healing and healthy.

Junk food was defined as generally very processed food which provided only "empty" calories; that is, no nutritional value other than energy, was high in carbohydrates, sugar, and fat,
and full of chemicals, or various combinations of these constituents. Foods labelled as junk food included some processed foods, crackers, cookies, fast food, deep fried food, sweets, chips, salted nuts, anything with preservatives, pot noodles, anything refined, white flour, cakes, and anything with food colouring or artificial sweeteners. Being labelled as unhealthy or junk food did not necessarily imply that these foods were never purchased or consumed.

**Healthy food identifiers.**

The healthiness of foods was also determined by its association with weight gain, as reported in the literature by Oakes (2005). Three women thought that too much fat of any type in the diet was unhealthy, while Erica observed,

*To me nuts are a good fat. We talk about fat and things high in fat, but that shouldn't be the criteria.***

Katie considered fruits and vegetables were healthy because "you can snack on them without gaining a lot of calories in your diet" and Vicky indicated that overeating whole wheat crackers and other healthy carbohydrates may lead to weight gain. Where food was positioned in the store may indicate its healthfulness.

*Taylor: The closer to the walls the healthier the food is.*

Vicky had learned the "trick" of keeping to the perimeter of the store and three other women endorsed this idea of "perimeter shopping" to assist healthy food selections. They reasoned that in most grocery stores the fresh produce, vegetables, meat, fish, chicken, and milk and bakery products are situated close to the structural walls of the building. The centre isles are stacked with processed foods packed with preservatives, although some processed foods such as dried pasta, and rice were not unhealthy. Vicky added that perimeter shopping also avoided "deals" on tempting processed foods. Processed foods were not the only foods that the women in the study avoided.
Stephanie observed that determining whether a food was "good for you" ultimately depended on how the individual defined the term. All the women spoke about foods they avoided. Food avoidance is a common strategy used in healthful food decisions (Connors et al., 2001; Falk et al., 2001). Foods containing preservatives were often avoided by the women in the study.

*Lillian: Salt and sugar and the minor stuff not listed as main ingredients, preservative that kind of thing.*

Deli meats with preservatives such as sulphates, nitrites, and nitrates were avoided by four women, foods high in salt by four women, and fifty percent of the women avoided foods containing refined sugar. Cheese was avoided by two women and bread by five women, while two women avoided food containing food colours and additives, five women avoided dairy products and one woman avoided foods high in fat, carbohydrate and calories. Many of these food items were those identified as unhealthy, or junk food, but some women, for various reasons, avoided foods that were identified as healthy, but which for them were "not so" healthy for various reasons.

*Cassie: I'm allergic to all saturated fats so that includes butters, margarines, all dairy, anything deep fried, can't have any traditional red meats ... any processed foods at all.*

Reasons for avoiding specific foods included health concerns such as diabetes type 2 for two women, hyperactivity for another, and gastrointestinal sensitivities and allergies for fifty percent of the women. Occasionally women avoid apparently healthy or "good" foods because of "unhealthy" implications (Hammond & Chapman, 2008). Healthy foods avoided by the women in this study with gastrointestinal sensitivities or allergies included dairy products, tomatoes, fruits, and almond skins. Caitlin avoided hard margarine as it was not good for the
body, Emily avoided white flour because it was too processed, and Natalie avoided all sugars as she had been told that sugar feeds cancer cells. Three women avoided specific foods if they could not control the amount they ate.

Danielle: avoided bread because I can't just have one slice of toast. I have to have two or maybe three.

Katie avoided fries and hash browns because of a negative childhood experience and Maggie avoided fast food because it takes time to prepare food and therefore, fast food could not be good. Two women avoided foods they disliked and two women avoided meat, poultry and fish.

Emily: Well for me the whole idea of eating meat is quite repulsive.

Cassie: I almost eat completely vegan and that diet is increasing my performance ability.

Five of the women avoided full fat milk and substituted low fat milk. Substitution is also a strategy commonly used in healthful food selections (Connors et al., 2001; Falk et al., 2001). However, two of these women selected higher fat milk for their children who required more fat in their diet and Maggie bought skim milk for her husband who had diabetes type 2, but selected homogenous milk for herself and children as they need the fat in their generally lower fat diet. Previous studies concerning women's consumption of dairy products has identified similar food selection behaviour which is also affected by cost and taste (Hammond et al., 2011; Hammond & Chapman, 2008). Several other foods were identified where the healthfulness of the food depended on who was consuming it. Five women preferred butter, often considered a not so healthy fat, for its taste and naturalness. Eggs were identified as healthy, but Jodi and Coleen observed that their high cholesterol content may render them unhealthy for some people with heart disease. Healthy carbohydrates were very important for Coleen and her family's health, for enjoyment, and for their energy and nutrient value; however, four of the women limited their
intake of carbohydrates, including the healthier products, for a variety of reasons which included energy value. Two of the women purchased foods that they considered less healthy, but preferred by their children; for example, white bread or pot noodles as the foods did provide some nutrient value and would not be wasted. Vicky considered fruit juice unhealthy whereas it was a healthy food for Lillian. Katie viewed protein as a significant component of her diet, whereas Vicky and Emily both thought that protein was not required in large amounts. Caitlin suggested that certain foods may be considered bad because they were considered too high in a nutrient and Coleen remarked,

*Bad foods are sometimes how you are psychologically interpreting it ...Oh I can't eat that because it will make me fat or ...what other connotations that carries with it.*

This psychological interpretation of healthy food has been noted in the literature (Lupton, 1995, 1996; Oakes, 2005; Zerbe, 1993).

**Moderation and balance.**

The literature concerning food practices also indicates that people refer to "moderation and balance" to achieve an overall healthy diet (Bouwman et al., 2009; Chapman, 1999; Chapman & Beagan, 2003; Connors et al., 2001; Falk et al., 2001; Hammond & Chapman, 2008; Hammond et al., 2011; Lupton, 1996). The concepts of moderation and balance were apparent among the women in the study group and the findings support existing research.

*Taylor: Everything in moderation and as long as you don't overdo anything then you should be able to... eat what you want when you want as long as you keep everything in perspective*

*Julie: I think that you need more of a balance of all nutrients, a balance of exercise and a balance of mental health to have a healthy life.*
The idea of not eating too much of one food or too little of another food, along with achieving a balanced nutrient intake through eating a variety of foods combined with balanced exercise, was inherent to all of women's meanings of health. For example, Bernice felt that over the course of the day her higher fat foods or meals would be balanced out by the lower fat foods or meals she ate. With respect to foods identified as treats or less healthy or less nutritious eating "in moderation" meant for one woman one a year, for two women once a week, once a day for another women and not every single day by another. Two women thought being excessive over one thing could cause an imbalance elsewhere and Natalie explained what happened when going to the gym became her top priority,

*I would miss going out with friends...I would miss going to family things ...I was just so big on staying at the gym, but then I stopped it... enough is enough... just eat healthy less gym let's try that...you want to do it for health ... you're stressing yourself out it kind of defeats the purpose.*

Natalie now considers a balance of 90% diet and 10% exercise as a healthy compromise for her lifestyle. As noted previously women who select foods which will benefit their health also perceive exercise as part of their healthy lifestyle (Chapman, 1999; Chapman & Beagan, 2003). Danielle also referred to a balance between diet and exercise, but for her this was 80/20, diet/exercise. Two other women referred to the 80/20 rule when considering dietary balance with slightly different variations.

*Erica: 80% of the time I try and be good.*

*Coleen: 80% of the time constitutes Monday to Friday when we're on the ball... things that you might otherwise ... worry about happen at the weekend... that's the 20%.*
While none of the women explicitly stated they were following a particular diet to lose or maintain weight, for several women healthy eating was a means for them to maintain or achieve a "healthy" weight in a healthy way. Taylor and Stephanie referred to being overweight at one time, Danielle wanted to lose the last few pounds of her pregnancy weight gain, and Vicky wanted to lose some weight for her role of bridesmaid the following year. Chapman (1999), from a study with similarly situated women who dieted, found that the women overtime progressed from a discourse concerning "fad" or "restrictive" diets to one of "healthy eating" to attain and maintain what they considered to be a healthy weight. The findings from my study support Chapman's (1999) suggestion that "healthy eating" may be new the discourse for weight loss and weigh maintenance.

**Changing meanings of food.**

The meaning of food, particularly for women, may change over their life course (Devine, 2005; Lupton, 1994, 1996; Mckie, et al., 1993). Within the study group five of the women explicitly referred to how their meanings of food had changed over the years.

*Coleen: It was so loaded before so negative and horrible ...It's gone through such a change... tonight I made macaroni and cheese from scratch... 10 years ago I would have been scared of all the[fat] ...now I think I'm proud that I can eat two bowls of it if I want ...[there's] more pleasure in it[eating].*

At once time the meaning of food for Cassie was enjoyment, but dealing with food allergies and associated digestive complications she now focuses on food as a fuel necessary for her to function.

*Cassie: Food shouldn't be a constant worry ...a constant topic of conversation ... I can't eat this... this big deal around it and now I've just let go of all[that] ...come to
the place of knowing what works for me ... once I had detached it from any emotion it has just become a simple fuel.

Eating for health had changed Stephanie's social meaning of food. Although food remained a social focus she now used social events to prepare healthy alternative dishes whereas prior to her change in eating practices she would have used any social event to eat whatever she wanted or whatever everyone else was eating. Vicky spoke about food meaning emotion and food meaning health which was not necessarily the same thing even when she was focused on eating for health. Julie observed that food was more likely to mean health when she was focused on losing weight, but at other times food meaning emotion may dominate what she eats which like Vicky, may not mean healthy.

**Food Meaning Natural**

The conversations that developed around the food the women had purchased highlighted beliefs and preferences which influenced their food selection. Preparing from scratch, non-processed, preservative free, spray free and organic indicated a preference for more natural foods. As is indicated in the literature, healthful eating practices are frequently associated with the notion of naturalness, homemade, and free from chemicals (Falk et al., 2001; Connors et al., 2001; Lupton, 1996). Foods that were purchased often depended on how the women prepared their meals. "Preparing from scratch" although expressed in various ways was referred to by ten of the women and perceived as being healthier.

*Bernice: I think it's more healthy [sic] you know what you're putting into it.*

*Natalie: I definitely look for foods I can cook so I know what goes into them.*

Four of the women would not buy processed cookies, but were happy to bake cookies because they were healthier as they knew what was in them. Knowing what went into the food they ate
was important to the women as was keeping food as "pure" as possible with the least amount of additives or preservatives.

*Jodi: I get nervous when I buy processed foods, so much is put in to make the food taste good so that people will buy it again.*

The majority of the women, 94%, were concerned about the quality of processed food, the quantity of additives present in many processed foods, and the potential health effects of those additives. These findings support previous research which suggests that women who practice healthy eating attempt to minimise the amount of processed food in their diet (Chapman & Beagan, 2003). When the women did purchase processed foods it was mainly for convenience. For two of the women the processed foods they purchased, such as a can of spaghetti sauce or a can of noodle soup, were supplemented with either fresh vegetables or protein, or both, to improve the nutritional value. When processed foods were purchased on a regular basis, five of the women looked for products with the shortest list of ingredients or least additives preferring certain brands over others. For Cassie, just the fact that a food product was processed and not fresh was enough to label it as "unhealthy". Excess of a specific nutrient was also a concern.

*Stephanie: Sodium's a big trigger for me I'm always looking at sodium levels in foods and anything processed has a much higher sodium content than I need.*

Like Stephanie, seven other women selected products with the least amount of sodium which they considered to be healthier, although three women were not overly concerned about the sodium content in their food and a little extra salt now and again was not problematic. Lillian generally selected low sodium products, but she used soy sauce in moderation to provide the "look" of salt in her traditional Chinese cooking.
Added sugar was also a concern for eight of the women not only because of the added calories, but because a diet high in sugar was thought by two of the women to affect behaviour and cause spikes in energy, and by another woman thought to feed cancer cells. Food with no added sugar, no sugar or the least sugar was preferred. Coleen was not concerned about the amount of sugar in her selection of processed foods because the few sugary items she purchased were balanced by her level of exercise. Concerns were also expressed by two women about the potential health effects of artificial sweeteners and the real thing was preferred to an unknown chemical. Five women were selective about where they purchased their meat due to concerns about the addition of colour dyes and/or antibiotics.

*Maggie: I don't think they put too much colour on it[meat], add colour so it looks fresh, but I don't think they do...I hope.*

Fifty percent of the women avoided foods containing preservatives naming nitrites, sodium, and MSG (monosodium glutamate), as well as referring to unknown chemicals which often appeared on ingredient lists. Several of the women were cautious about unknown ingredients in foods.

*Caitlin: It really freaked me out that I couldn't understand what any of the ingredients were so yeah that was my last time eating margarine.*

Like Caitlin, five other women said that not knowing what the ingredients were was a primary concern for them and if they couldn't say the name of the chemicals, or didn't know what it was for then they would avoid that product. The discussions around processed foods and preservatives in foods were frequently associated with the topic of spray free or organic produce.

The women expressed various concerns about where fresh produce was sourced. As with the findings from a recent study (Beagan, Ristovski-Slijepcevic & Chapman (2010), these findings indicate that several of the women considered environmental and ethical values in their
healthy food selections. About 50% of the women in the study preferred to select organic fruits and vegetables over industrially grown produce.

*Julie: We go for spray free and organic...ideally organic.*

The remainder of the women, like Julie, generally selected spray free produce or traditionally grown produce, but would consider buying organic produce if there was no variance in price. Two women selected local produce over produce that had been transported lengthy distances, but it was noted that locally grown produce, not organic, could be as expensive as organic produce. Price was a determining factor for six women when selecting between, organic, spray free and industrially grown produce. Caitlin who did buy organic produce thought the cost was prohibitive for many people. Reasons for selecting organic vegetables and fruits were perceptions that organic products were fresher, tastier, and were free from pesticides and therefore healthier. Organically raised or free range poultry, eggs and meat were preferred by five women because they were antibiotic free and less constrained animals were potentially healthier animals.

*Julie: The animals are feeding on their own will or in their own space and they're not just locked up in an eating lot and given this food so that they can fatten...healthier animals in a less stressful environment.*

Buying organic, spray free or free range produce was thought to benefit the environment and the five women felt better about their choices. Three women expressed concerns about mass produced chickens and tried to avoid them, five women expressed concerns about the use of antibiotics and steroids in the production of animal products for consumption and five women expressed concerns about the mass production of meat, while two women were concerned about the manufacturing and retailing practices of US food outlets. Not all of the women felt organic produce was healthier than traditionally grown produce.
**Bernice:** I know there's not a lot of information out there on organic it's a relatively new trend. I've never heard there's a big health factor.

Coleen also observed that whether organic produce was healthier or more nutritious than traditionally produced produce had yet to be demonstrated. Three women did not "buy in" to the organic "thing" and Taylor considered "organic" to be a trend that producers and retailers cashed in on, while Jodi observed that natural things in excess can be harmful and that people may buy "organic" assuming it was healthier than the non-organic varieties. The women who regularly purchased organic products sourced them from shops and farms that they felt they could trust.

**Erica:** A lot of the bigger stores are calling products organic which come from places which don't have the same organic standards as they do in Canada or the US so I am cautious when I buy organic.

With respect to processed organic foods it was generally considered by four of the women that processing reduced the health benefits, although the women did purchase some processed organic food products which they considered healthier than the non-organic varieties. Despite their preference for naturalness nine of the women used nutritional supplements such as vitamins, minerals, omega fatty acids and glucosamine to ensure they were getting an adequate intake of nutrients.

The meanings that the women in the study ascribed to food support understandings described in the literature and while the women shared many of those meanings each woman had a unique interpretation of healthy food. The final section of Chapter 4 concerns how the social environment influenced the women's blueprints for healthy eating.

**Influences on Healthy Eating**

The women were asked what had motivated them to learn about healthy nutrition, where they sourced their health and nutrition information, how they had formed their opinions about
the foods they purchased and about healthy eating in general. Their responses gave support to
the literature concerning the importance of recognising the substantial influence the social
environment can exert on women's understandings of healthful eating practices (Battle &
Brownell, 1996; Beagan et al., 2010; Chapman & Beagan, 2003; Hammond et al., 2011;
Gaesser, 2003; Heenan, 2008; Irving & Neumark-Sztainer, 2002; Zerbe, 1993). This section
considers motivation to eat healthily, sources of relevant information, reliability of health and
nutritional information, conflicting health and nutritional advice, and marketing of food
products.

Motivation to Eat Healthily

Several of the women identified events which had either initiated or provided incentive
for their interest in healthy nutrition.

Natalie: I needed another hobby so I started going to the gym.

Seven women identified healthy nutrition support for active lifestyles as initial motivators, while
weight loss and feeling good mentally and physically had been the incentive for three women.
Pregnancy, the responsibility of child rearing, and concern for their own health had influenced
healthful eating practices for three other women, whereas discussions with children about
healthy food choices motivated one woman, and three women cited working in the field of health
as being influential. Medical conditions and gastrointestinal issues had motivated six women to
learn about and practice healthy nutrition.

Sources of Relevant Information

As noted in the literature (Lupton, 1996; Ristovski-Slijepcevic et al., 2007; Whitney &
Rady Rolfes, 2005), nutritional health information is available from a multitude of sources such
as magazines and the internet.
Erica: *If I was wondering about the health benefits of something then I would Google it.*

Fifty percent of the women sourced information from media sources such as articles in women's health, sports, natural health, and popular women's magazines, and newspapers. Not all information was sought and the television provided unsought information for one woman. The internet was a source of both intentionally researched information and unsought information for 75% of the women. Nutrition related books were also considered helpful sources of information by 14 women. Of these 14 women, six women referred to university course books or work related text books, two women referred to natural health books, and three women referred to cook books. *Canada's Food Guide to Healthy Eating* was also a useful resource for four of the women and in two instances had been provided by children's schools while two women used the guide to inform their clients. The women in the study, like Jodi, also referred to other sources of information.

Jodi: *Talking to someone who is knowledgeable in the area.*

Other sources of health and nutrition information included people who were considered knowledgeable in nutritional health related matters. For example, six women consulted with health practitioners such as naturopaths, two with personal trainers, one with a Traditional Chinese medicine practitioner, another with a massage therapist, and two with midwives. Katie obtained information from her mother who worked in health, two women consulted their medical doctors, and five women had consulted a nutritionist or dietician. Various diets such as "Suzanne Somer", "The Zone", "the South Beach Diet", and "Over Eaters Anonymous", were also sources of information.

Cassie: *I recently brought a really good book called the "Thrive Diet" which is the vegan diet done by a tri-athlete.*
Stephanie also referred to the "Thrive Diet" as well as "Weight Watchers" as sources of information. Six of the women cited five other diets as sources of nutritional information which influenced their food selections. Erica followed advice from one diet to use humus as an alternative to butter on bread and Vicky followed the advice given in another diet to eat two tablespoons of peanut butter each day. Much of the women's knowledge about health and nutrition came from every day conversations in various social contexts.

*Bernice: A lot of it socially.*

*Taylor: People I work with tend to be very health conscious, and my friends, at the gym, the people I hang out with would tend to be quite health conscious anyway so I get a lot of it from them as well.*

Social talk for six women included the sharing of information, recipes and nutrition tips with friends and family and, for one woman, interactions with women at the gym and friends who were into health. One woman gained information from friends concerned about health in middle age and four women referred to their mothers.

*Emily: I think my ideas pretty much came back from being at home with my mum.*

Two women obtained information from shops; especially organic grocers or farmers and five women referred to their life experiences as sources of health and nutrition information.

*Lillian: Most of my information comes from tradition.*

Information was also obtained incidentally from unidentified sources and variously reported in the conversations as "something I heard", "info out there ", "random tips"; "from what I read", "heard stories", "you hear", "I'm aware of what is out there", "I've seen written up", and "I hear that". Individual women specified the actual food and its expected health benefit in the following way; "they're saying [tomatoes]...things in the media"; "heard over the years [cholesterol and health risks] "; "someone saying [turkey is better than beef]"; "I have heard [
fibre is good for you]; "that's what I hear [that oats help reduce cholesterol]"; "from what I hear [regarding soy and potential adverse health effect]"; and "I heard that [milk consumption and increased risk of cancer]."

**Reliability of Nutritional Health Information**

Current research concerning women and healthy eating practices around bone health suggests that much of the nutritional health information that is available is confusing, conflicting and not necessarily reliable (Hammond et al., 2011). The findings from this study support this view. The women in the study were asked how they determined the reliability of the array of health and nutrition information that was freely available.

*Caitlin: I think I take it and look at it...the whole gamut.*

Ten women perceived nutritional health information to be constantly changing which led three of the women to respond "with a grain of salt" to new health and nutrition information. Like Caitlin, eight of the women looked at new information within the big picture of their established health and nutrition beliefs and expressed the need for balance and moderation.

*Bernice: I don't suppose it's all true, but you see the same things come up again like the articles on power foods...I guess I tend to believe the things that come up more often.*

When considering health and nutrition information the women tended to more easily accept information that compared to life experience, supported what they already knew, was reported in several different sources, and had the support of published studies. Kasperson (1992) has suggested that when individuals receive new information it may support existing beliefs, may change beliefs, and may create new understandings. While individuals will accept information more readily if it aligns with existing knowledge (Krimsky, 1992) individuals do not automatically accept information as true (Zinn, 2008), are likely to resist unwelcome information
(Denscombe, 1993; Oakes, 2005) and are sceptical of new information including information from authoritative sources (Hansen et al., 2003; Ristovski-Slijepcevic et al., 2007). One woman was "leery" of small sample studies and looked for articles written by an authoritative source which appear "reasonable" when compared to Canada's Food Guide, and which did not push too much of any one nutrient. Another woman looked for gold standard academic studies supported by many years of research; such as studies on vitamin C and D. Certain magazines for one woman were considered more reliable than others and for many of the women certain sources were more trustworthy.

**Stephanie: There's a strong trust relationship [with her personal trainer]**

In common with the literature (Aphramor & Gingras, 2008; Hansen et al., 2003; Lee et al., 2005; Williams & Calnan, 1996), the women were more likely to accept health and nutrition information coming from a highly trusted source of health related nutrition information. Naturopaths and midwives were trusted sources for five women and two women respectively. One woman considered her "unique" medical doctor and another woman considered a particular specialist as trustworthy sources of nutritional health information. A nutritionist was considered a trusted source of nutritional health information by one woman and two women trusted information from personal trainers, although they were not acknowledged as nutrition experts. In general, the women were less likely to trust, and in some instances distrusted, the information coming from companies selling food, pesticide producers, anyone with a financial interest in the product, and information that did not have an independent source.

**Bernice: I know the milk commercials are always funded by Milk Canada.**

Intrinsic to all the conversations concerning reliability and trust of nutritional health information was the reliance on "common sense", "trusting one's instinct", "going into my knowledge from growing up, or "intuition". Jodi defined "common sense" as,
Drawing on all of the info that I have gathered over the years and weighing the new information in light of that. Being sceptical and considering the source and how that source would benefit from the publishing of the information.

Coleen referred to trusting her own judgements based on past mistakes and two women trusted in their knowledge of their body and how their body "feels". Erica thought she needed to be more critical of new information.

*Erica:* I need to be more critical of the internet ... I'll repeat something to my husband and he'll say where did you hear ... get that, and I don't really know who said it.

The literature suggests that some people respond to new information by doing nothing (Falk et al., 2001; Hammond et al., 2011; Watson et al., 1996). Emily's comment provided insight as to why "doing nothing" may be a response to new information.

*Emily:* I'm so busy I just figure it's working...leave it the way it is.

**Conflicting Nutritional Health Advice**

The literature has indicated that frequently nutritional health information and advice are confusing and at times contradictory (Beck, 1998; Cowburn & Stockley, 2005; Hammond et al., 2011; Lupton, 1993; Ristovski-Slijepcevic et al., 2007; Williams, 2005). Interpretation of nutritional recommendations for two of the women in the study led to avoidance of a not so healthy food which became detrimental to their health.

*Jodi:* I tried to eat as ‘healthy’ as possible during a period in my life... I assumed that I could do better than the low-fat hype... Low fat soon became ‘no fat’ and I thought it was a good thing... I got carried away... eventually had to go to the hospital to have my glycogen stores replenished. Some of the habits that I had created by trying to eat extremely ‘healthy’ or low fat and exercise for lengthy
amounts of time (as is generally promoted in the media)...were hard to break and took over a year to overcome.

Jodi explained that it was a combination of misinformation and misinterpretation of nutritional recommendations around fat reduction and healthy eating which led to malnutrition and her hospitalization. Coleen and her mother had been affected by the low/no fat "craze" of the 1990s which triggered a food restricting cycle for Coleen and which left her mother with severe weight loss and depression. The "(un)healthful" eating habits that Jodi and Coleen adopted may appear extreme, but the literature suggests they are not uncommon especially among women (Aphramor & Gingras, 2008; Bisogni et al., 2002; Gimlin, 2008; Heenan, 2008; Lupton, 1994, 1996; Markula, et al., 2008; McKie et al., 1993; Rich & Evans, 2008; Zerbe, 1993).

Other women in the study referred to instances when information was not clear. Three women suggested that the health recommendations for salt for very active women were not clear, and another three women considered information about the health benefits of milk unclear. Other women variously referred to confusion over the health properties of butter, honey, popular high protein and low carbohydrate diets, serving sizes and calories.

Natalie: One day blueberries are awesome for you the next day they're not.

Six of the women referred to contradictory information about the healthfulness of certain foods, such as soy products and eggs. With respect to soy products, which are commonly considered good alternatives to dairy products, more recent information suggested a potentially negative effect on oestrogen levels in women. Three responded in different ways to the contradictory information concerning soy products.

Cassie: The research kept coming back to hormone issues for women... the research I found had a link to ovarian cysts. I'd had a large ovarian cyst removed back in ...

2000.
Erica: I have done some research ... we're eating way too much of it [soy]...so rather than eliminating soy completely from my diet I've reduced how much ... we eat. I think there are some benefits to eating soy.

Natalie: I started drinking soy milk, but then I heard about the high oestrogen levels in it and how it's not really that good for you...I keep hearing it over and over again...I go back to 2% milk on my cereal

A fourth woman remained confused about the benefits or harms of soy. The two women who were concerned about eggs had examined relevant information and continued to eat eggs in moderation. Some of the women considered that confusion resulted from trends in marketing which Taylor referred to as "the bandwagon thing".

As noted previously, scepticism is often an integral part of the decision process. Eight of the women, like Taylor, were sceptical about trends and fads in health and nutrition information and for the most part disregarded anything that appeared "trendy" or appeared to be a marketing ploy. Three of the women observed that while they may add fruits which were thought to prevent cancer to their diets, they would not eat them in excessive amounts or to the exclusion of other nutrients. Three other women observed that some of the trendy vitamin drinks may have benefits, but as Danielle said "not quite as many as they are reported to have". The women also expressed concern about marketing practices concerning "healthy" foods.

Marketing of Food Products

Health claims on foods may not accurately describe the healthfulness of a food product (Martin, 2006) and are used to improve the marketability of food products (Lupton, 1996; Whitney & Rady Rolfes, 2005). Health claims can also be misleading (Beyerstein, 1997; Drazen, 2003; Whitney & Rady Rolfes, 2005). At the time of the study, several international food companies were marketing "probiotic" yogurts; yogurts with the addition of specific
bacterial cultures which were advertised as contributing to intestinal health. I wanted to learn how women respond to a particular advertisement which featured a young slim woman consuming a probiotic yogurt.

_Caitlin: The woman's shape means it's gotta be good for you._

When asked about their reaction to the marketing of probiotic yogurts for health, six of the women provided various responses which included "it's a "trend", a "buzz word", "band wagon thing", a "joke", or "ridiculous [as all yogurts contain bacterial culture]". These women had ignored the advertising campaigns. However, like Stephanie, four women responded positively to the adverts because of the potential digestive health benefits.

_Stephanie: I learnt about then when having a yeast infection ... the doctor had told me to look for active cultures in yogurt ... very difficult to find yogurts with active cultures in them._

While four women did not like the taste of probiotic yogurts, three of the women alluded to the association to weight loss made by one particular advertisement which they felt was misleading. One woman "knew" the yogurts didn't contain sufficient bacteria to be beneficial which, as Coleen remarked, was another "health" pitfall.

_Coleen: You go along with it thinking you're doing something right then find out it's useless because your stomach acid kills the bacteria... frustrating._

Like Coleen, seven of the women were frustrated with the way "healthy" food was marketed, particularly when that food item may not be so healthy. Three women gave the example of the cereal "Fruit Loops" which was marketed as "healthy" because of one gram of fibre per serving, despite its high sugar content and lack of other healthy nutrients. Julie observed that certain products were marketed with the implication that "to be a good mom you need to buy this product ". That people generally did not realise how food manufacturers
manipulated health and nutrition information to promote their products, was a concern expressed by three of the women. The women were critical of how manufacturers marketed "healthy-for-you" products in an environment where the consumer did not have access to sufficient knowledge and information to make a fully informed choice. Caitlin considered the "healthy" title a ploy for generating profit and Coleen suggested that food manufacturers take advantage of people who don't have time to read the available information, who have different educational backgrounds or "different levels of common sense", or are not aware of healthy nutrition.

This last section of Chapter 4 analysed the data with respect to influences on healthy eating, motivation to eat healthily, sources of relevant information, reliability of nutritional health information, marketing of food products, and conflicting nutritional health advice. As with the meanings of health, health risk, and food, while the women in the study revealed some common influences on their healthy eating practices and expressed many similar views and concerns about available nutritional health information, each woman was influenced by a unique range of factors which supported her healthy food selections at the grocery store.

**Summary**

The findings reported in Chapter 4 concern how the women brought together their understandings and meanings of health, health risk, and food, and how these meanings are affected by the sociocultural environment in which they live to create personal blueprints which support their healthy food selections. Chapter 5 considers the practical application of the women's understandings of healthy eating in relation to preparing for and making healthy food selections at the grocery store. The women's perceptions of nutritional health education are also considered.
Chapter 5: Findings; Planning, the Grocery Basket, and Reflections

Introduction

Chapter 5 provides the analysis of the interview data which considers how the women plan and put into practice their food selection goals along with their reflections on nutritional health education. This section includes the following subsections: planning for food selection, the grocery shopping baskets, and reflections on nutritional health education.

Planning for Food Selection

This section of the analysis considers the practical application of the women's blueprints when planning a grocery shopping event. The literature suggests that people adopt various strategies and develop heuristics, or rules of thumb, to simplify complex food decisions (Bouwman et al., 2009; Connors et al., 2001; Falk et al., 2001). As noted in Chapter 4, some strategies the women in the study group employed included avoidance, limitation, and substitution referred to by Falk et al. (2001) who also suggest that routinization, modification, and replacement as additional strategies which assist food choice. The literature also suggests that value negotiations around health, cost, and convenience occur during the food choice process (Connors et al., 2001; Falk et al., 2001). The women in the study followed personal routines which enabled them to take into consideration not only their own nutritional requirements, but also those of other household members. In addition, the findings indicate that the women had developed rules of thumb to simplify their food decisions. The findings in Chapter 5 support the literature understandings of food choice. Planning for their grocery store food purchases was a routine affair for all of the women and took into account different food preferences, planning meals, various constraints such as convenience and cost, preparation of shopping lists, and selection of grocery stores.
Different Food Preferences

The literature suggests that women's food preferences may be subsidiary to the food preferences of other family members, but not much is known about how individuals deal with food conflicts (Connors et al., 200; Hammond & Chapman, 2008). The women in this study did not indicate that their healthy food values and preferences were subsidiary to the preferences of other family members. While they used various strategies to accommodate different food preferences, within the family unit, they did not ignore their healthy food values around their personal food consumption. Four of the women only made food selections for themselves while the other women selected food for themselves and other family members, such as partners, parents, siblings and grandparents. The majority of the women were primarily responsible for selecting and purchasing groceries. Three of the women shared food selection and purchasing, but each woman had a significant input as to the foods purchased. For example, one woman made a grocery shopping list and depending on her work schedule either she or her partner would purchase the food according to the prepared list. Not all household members enjoyed the same foods.

Bernice: We have different likes and dislikes for sure.

In seven homes, different food preferences had to be taken into account and the women would need to purchase foods outside their concept of healthy food. These less healthy foods were kept to a minimum, but for three women the less healthy foods were incorporated into their grocery baskets to ensure that other family members' food preferences were addressed. This practice has been identified in previous research (Hammond & Chapman, 2008). Two women prepared different dishes to suit different food preferences when they did not want to compromise their own food preferences, but all of the women respected and accommodated the
food choices of other family members. Three of the women expressed frustration over less healthy food preferences of either partners or teenage children.

**Planning Meals**

When planning meals, the women in the study group selected food identified by a variety of combinations of the following factors. Food had to be healthy, simple, close to nature, locally grown, organic, spray free, preferably fresh and preservative free, but if processed with only a few ingredients, and enjoyable. Other variables which depended on the individual woman’s perspective of health were low salt, low sugar, low fat, low saturated fat, containing unsaturated or omega fatty acids, and high in fibre. Planning meals ahead of time helped many of the women plan for their grocery store food selections.

*Erica: My intention is on the weekend is to make a list of meals that I will make during the week.*

More than 60% of the women regularly planned meals, mainly dinner, for the coming week or weeks either writing down or memorising their meal plan. The meals were often planned around the women's, and their families', activities.

*Katie: If it's something like golf which is not high intensity then I can have a large meal... If I'm going to the gym to do a heavy workout ... a snack a power bar or an energy bar.*

Three other women also planned their meals around their physical activities. Two women had, as Danielle referred to them, "go to" meals that were quick and easy to prepare and enjoyed by their children. Meal planning incorporated the use of recipes.

*Bernice: We often like to look at recipes and plan out what we're making... for the week.*
Like Bernice, two other women enjoyed experimenting with new recipes and foods, and their meal plan and subsequent shopping list would reflect recipes they had chosen. Planning ahead to have meals ready made was also another reason for a meal plan. Four women made extra quantities of a meal which they froze for use at another time. Four women noted that by planning their meals they were not left with a last minute decision when they were hungry and tired. Erica remarked that when she planned her meals for the week her week ran more smoothly as she was not left "scrambling at 4 pm" trying to put dinner together which was not satisfying. For several of the women meal planning was a reflection of their general inclination for routine.

Coleen: I tend to be very routine.

Routine has been identified with healthy eating (Bouwman et al., 2009) and eating the same food all the time was a recurring theme throughout the interviews. Three women routinely bought the same food and made the same meals. Four other women prepared different meals using similar ingredients, or rotated meals over the course of a week or a month; however, two of the women felt that too much of the same thing for too long was not good for them. Being out of routine for three of the women felt disorganised and often resulted in increased food costs when sufficient thought wasn't put into the trip to the grocery store.

Erica: Sunday I actually went to get one little thing and I spent $60 because I saw all these things that I needed.

While meal planning generally concerned dinner, three women planned for substantial breakfasts and two women who regularly worked 12 hour shifts remarked on the difficulties of maintaining a meal routine especially on night shifts.
Convenience

Several women also took convenience of food preparation into account when planning their food selections.

*Katie: Things that we can quickly heat up.*

Time to prepare meals affected food selections for several women. Vegetables were a mainstay for four of the women because of their versatility and ease of preparation. Three women relied on certain processed foods to use as a quick meal and which fitted with their notions of healthy food.

*Emily: I buy canned beans as opposed to soaking them over night... you can rustle up a dinner in 10 minutes.*

Other foods considered convenience foods by three women included Julie's "handy" frozen fish portions, Taylor's bags of pre cut salad, and Danielle's eggs which were a great "all in one" convenience food. One woman's convenience food involved a health belief compromise or as Connors et al. (2001) suggest the need for "prioritizing conflicting values" (p.194).

*Natalie: I bought a rotisserie chicken which I hate doing, but my lifestyle is really hard to find time to cook and chicken's [sic] hard to cook.*

Cost

In addition to convenience, cost was also factored in to the planning process since as Erica noted,

*We can't put a price on our health.*

Although cost was not a primary or overriding concern when purchasing their food groceries for any of the women, the cost of food affected their food selection in some way. In whatever way it was expressed each woman wanted value for cost. Value for cost depended on each woman's personal beliefs and life circumstances. Factors which came into value negotiations around cost
included the source of the food for four women, whether the item was considered "frivolous" or
everyday by two women, and individual women considered the healthfulness of the food,
freshness, and quality. One woman took her new mortgage responsibilities into account. Five
women shopped around for the right price which at one time had involved an ethical
compromise for one woman who, when finances were strained, needed to shop at a store whose
business practices she did not like.

_Coleen: I had to subvert my principles...this is what I need to do for my family to
survive ... I don't like what they [the supermarket] do as a company ...the meat's
probably questionable._

When regular items were considered overpriced three women substituted alternative food
items. Jodi bought the higher priced item for her young daughter whose food repertoire was
more limited, but avoided an item altogether if she considered the price was too high. Two
women opted for lower priced processed canned foods on the few occasions these products were
purchased as they considered all processed brands equal. Food bargains were also sought.

_Vicky: I am totally a deal shopper._

Two other women, like Vicky, made use of any bargains that suited their food requirements. To
avoid increased food costs, two women avoided shopping when they were hungry as either they
bought more food or unintended items, and three women shopped for fresh produce more
frequently to avoid wastage which decreased the overall cost. Another habit or rule of thumb
employed by five women was as Julie remarked,

_Kept [sic] things really simple._

Simplifying or streamlining healthy food selections has been noted in previous research
(Hammond et al., 2011). For two women this meant simple basic foods, for another close-to-
nature foods, and for two others ease of preparation and cooking. Nine women spoke about
"basics and staples"; the mainstays of their food selections which were always available in their homes. Fruits and vegetables were considered by all the women as basics and staples with ease of preparation and health benefits being the primary reasons for considering these as staples. Caitlin suggested "you've got nothing" if you run out of fruits and vegetables. Basics and staples for three women included grains, for two women sandwich fillings, and legumes for two other women while dairy and protein were variously considered as basics or staples for another two women. Food should also be fun.

Vicky: If you don't like salad make it fun. Add cranberries, chicken, [and] avocado.

To remain motivated to eat healthily five women spoke about various planning strategies which included gaining input, sometimes negative, from family members, looking for new recipes and following a recipe on-line. Whatever strategies the women used to plan for their food purchases the women all relied on some form of shopping list.

Shopping Lists

How the women constructed their shopping lists depended on a variety of factors and the shops the women regularly used.

Jodi: [An] inventory... [An] ongoing list for every day; a fruit list... lists of each store [and] of what they have that may be of interest to me.

Like Jodie, Katie used newspaper flyers to check which store had items of interest and which may be on sale. Lillian also made a separate list for each grocery store she used. Three women started their lists with food items they had run out of and four women, although they tended to purchase the same items each week, made shopping lists to avoid forgetting something and having to make a return trip. Three women relied on memory for staples and basic foods, only listing new or less frequently bought items. The shopping lists for 11 of the women were based on meals planned for the week. Maggie's list was divided into quadrants (fruits and vegetables,
dairy and meat, "extras", and Asian foods) which ensured "extras" were limited and her purchases cost effective. Eight women did not always make a written list, but carried a list in their heads. Erica commented,

*When I do make one [a shopping list] my week goes much better.*

Natalie did not make a written or a mental list of specific foods but shopped based on her criteria of vegetables, protein, carbohydrates, and monounsaturated fats. Where the women purchased their groceries was also part of the planning process and the women had various reasons for shopping at particular stores.

**Grocery Store Selection**

The White Rock and South Surrey area is well served by several major supermarkets and a variety of small local fruit and vegetable outlets (see Table 1. for the women's store preferences). Only one woman did her grocery shopping outside of the White Rock and South Surrey; however, as with the other participants she spread her shopping between one of the major supermarkets and smaller fresh fruit and vegetable outlets. In addition to shopping at their local stores, two of the women travelled to a specialist Asian store some forty kilometres away on a regular basis. The women had a variety of reasons for shopping at their preferred stores.

*Julie: Location and prices ... they have organic products...convenience on the way home from church.*

The findings of this study support previous studies which indicate that convenience, location, produce, produce quality, and perceived store attributes influence consumer use of a particular grocery store (Carpenter & Moore, 2006). Convenience, quality of produce, and value were the most often cited reasons. Eight women referred to location which variously meant close to home, work, children’s schools or on a regularly travelled route. Value for money was another reason expressed by two women as “what’s on sale”, by three women as “good prices”,

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referred to as “cheaper” by two women, and “very reasonable price” by another woman. The availability of organic produce was a key determinant for six of the women. How the store appeared was also important.

Maggie: The atmosphere, it looks fresh, and you are cold inside the shop so I trust they look after it very well.

Altogether five women referred to atmosphere and freshness, and six women cited shopping for specific items as reasons for preferred grocery stores. Other considerations for selecting a particular grocery store were for two women variety, for two other women more interesting foods, for three women bulk foods, canned and basic foods and two women selected a fresh produce outlet for the quality of the produce. Friendly staff was also a consideration for Erica,

Knowledgeable people to ask questions ...they have seminars.

The store layout was a consideration for Bernice, and Caitlin's choice depended on whether she was shopping for herself or her partner. Two women preferred to use stores which stocked locally sourced products, one woman liked to support local businesses, and another woman's ethical beliefs about a store's business practices determined the stores she shopped at. Time spent grocery shopping was another planning consideration and some women spent more time selecting groceries than others.

Lillian: I have to spend more time than the average family.

The amount of time spent selecting groceries varied amongst the women and mainly depended on their other commitments, such as work, family life, and physical activity. The findings from this study support previous studies concerning time spent grocery shopping. Earlier studies indicate that the length of time spent shopping is influenced by a variety of factors such as size of family, distance of the store from home, individual food preferences, and preferences for buying small or large amounts of food at one time (Bawa & Ghosi, 1999). Over
the course of the week the women spent between 45 minutes and 2 hours selecting and purchasing groceries. Six women split their total grocery shopping time into short periods, once or several times a week, and six women included a “big shop” of one hour or more. One woman observed that shopping time and frequency changed from week to week and three women noted that shopping time was increased by reading labels and accommodating different food preferences.

_Caitlin: A couple of hours per week...split up[between] different places different days... certain foods that he [partner] won't eat... so we have to have different things._

Lillian also spent longer purchasing groceries to meet her husband’s, her daughter’s and her own dietary requirements. Two women were routine in their food selections and were able to complete a once a week shop in 45 minutes wanting to get in and out as quickly as possible. The time spent shopping for one woman depended on whether she needed staples and two women didn’t specify the amount of time spent grocery shopping.

**The Grocery Shopping Basket**

The selections of food groceries (Appendix J.) that the women "brought" to their interviews while varied were the outcome of their acquired knowledge of health, health risks, nutrition and food, and life course influences as illustrated in the literature (Bouwman et al., 2009; Connors, et al., 2001; Falk et al., 2001; Lupton, 1996; Ristovski-Slijepcevic et al., 2007). At the point-of- purchase the women had the opportunity to make use of nutritional education tools in the form of ingredient lists and nutrition fact labels on package foods. The literature suggests that the use of these tools to simplify healthful food choices is limited for various reasons which include difficulty in understanding and interpreting the information that is supplied (Cowburn & Stockley, 2005; Williams, 2005). Women, such as the women in this study with greater access to education and income, or with a special health interest are more
likely to read nutrition labels (Cowburn & Stockely, 2005). The women variously used ingredient lists and nutrition fact labels to assist their selection of healthful food products and their response bore out the literature suggestions. When selecting any processed food, 50% of the women read the ingredient list and made their decision on what they read.

_Stephanie: If I can't pronounce it I don't eat it._

Like Stephanie, seven other women used this heuristic to simplify their processed food selections and did not purchase products if the ingredients were unpronounceable, illegible or unknown. This supports previous research that indicates individuals are often confused by the technical wording and numbering provided on nutrition labels (Cowburn & Stockley, 2005). The main criteria for processed food, for the women in this study, were the least number of ingredients, and no additives, preservatives and flavourings. Some of the heuristics that the women employed have been identified in previous research (Connors et al., 2001; Falk et al., 2001). One woman relied on the ingredient list over nutrition fact labels.

Two thirds of the women used nutrition labels to support their food choices and found them useful when purchasing processed foods, although they may not use them all the time.

_Katie: Occasionally... for the total calorie content ... sugar content, carbohydrate content, protein... least amount of calories ...higher protein than carbohydrate._

_Erica: I do appreciate the daily values, salt, fat, sugar in a serving, that's important information to have._

The women each had specific nutrients or values that they wanted to identify. Two women checked for sugar, salt, and fat content, and one woman checked labels on gluten free products.

As has been found in previous studies (Cowburn & Stockely, 20005), although useful, four women indicated that using label information to compare products was time consuming, two women suggested the labels were often difficult to read, and 69% of the women commented the
labels did not always provide sufficient or helpful information. For example, the women noted that the percent daily value was not as helpful as the gram amount of nutrient, although two women understood how to use percent daily value. Knowing where fresh produce was sourced would be welcomed by two of the women. Three women considered that nutrition facts labels had the potential to mislead the uniformed consumer.

Taylor: People go... "it's low fat I can eat all I want of that"... or "it's only 170 calories"... well may be it is only 170 calories if you eat a quarter of it. If you eat the whole thing you're going to be eating half your calories for the day.

Previous research has indicated that the connection between calories and energy is, in general, not well understood (Cowburn & Stockley, 2005). In addition, three women observed that reading food labels had the potential to become obsessive and two women purposely refrained from reading labels on certain food items as they did not want to spoil their enjoyment of that food item.

As part of the simulated food selection process, the 11 women at the two focus group interviews were asked to compare three nutrition labels for the same unidentified food product to generate a discussion about nutrition fact labels in general. The usefulness of the 2000 calorie base diet was queried by three women and four women noted that serving sizes were often inconsistent or misleading.

Vicky: I notice with drinks ... I thought 10 calories I've got the good one and then it said per this amount of grams and I went oh that's only a third of it... like they tricked me.

Three women noted inconsistencies in the nutrient values and one woman noted there was no ingredient list on the sample labels. The women made suggestions for improving the usefulness of information provided on food products.
Coleen: I would like to see a more extensive vitamin and mineral list.

Jodi: Types of fats, there's saturated, trans fats and there's also the omegas, polyunsaturated. To have that would be helpful for numerous reasons.

Other women suggested down playing calories, and instead focusing on the amount of added sugar, and identifying chemicals and cholesterol. Four of the women thought it would be helpful to have some information about nutrition labels in a convenient place in the store so consumers can check what the ingredients are to help with their decision. The suggestions that the women put forward have previously been identified in the literature (Cowburn & Stockley, 2005; Williams, 2005) as well as in nutritional health policy documents as a means of providing a supportive environment for healthful food choice (BCHLA, 2005).

The final outcome of each woman's food choice process was their individual basket of food. Together the responses reflected the diverse understandings of healthful food choices. In addition, the responses variously revealed a woman's knowledge about specific nutrients, why she selected specific items, her regular food selections, why she selected a particular product, and why she shopped where she did and have been reporting previously in Chapters 4 and 5. The conversations generated from questions concerning her healthful food selections created an opportunity to ask the women to reflect on existing nutritional health information and contribute to future nutrition health information and nutritional health education programs.

**Reflections on Nutritional Health Education**

The final section of the analysis considers the concerns and ideas that the women contributed when asked to comment on how health, health risk and nutrition information is presented and how it could be improved, how their healthy food selection could be made easier, and any health related nutrition questions they would like to ask. The findings are reported under the following headings: nutritional health information, in-store information, knowing
Nutritional Health Information

The women in the study group acquired their health and nutrition information from a variety of sources and had a good understanding of healthy eating practices which corresponds to previous research (Bouwman, et al., 2009; Falk et al., 2001; Ristovski-Slijepcevic et al., 2007). 

*Canada's Food Guide* is an educational pamphlet produced by Health Canada (2007) aimed at helping the general population make healthful food choices. The women were asked for their comments about the publication.

Fifty percent of the women were familiar with *Canada's Food Guide* and while some of the women found it useful others did not.

*Taylor:* It's 2-3 servings a day, what constitutes a serving?...it's not something that's right there... you need to go and look up yourself, research ...frankly I don't have the time.

*Coleen:* I couldn't eat all that... I'd gain 100 pounds ... I've heard that a lot ... that's too much food....whether I should do that or not doesn't enter my mind.

Although three women found the guide provided basic nutrition information for daily food intake and one of them thought it colourful, another woman thought it was confusing and time consuming, and two women considered the amount of food too much for a sedentary person. One of them observed this may turn people away from following the food guide. Previous research has indicated that some women have expressed ethical concerns over the construction of the nutrition guide (Ristovski-Slijepcevic et al., 2007), but the women in this study did not refer to how the nutrition guide was formulated other than one woman questioning the accuracy of the amount of protein for children.
Several women made suggestions for improving Canada's Food Guide. One woman suggested providing information about why the recommended amounts and types of food were healthy, and three women suggested adding information about popular diets such as high protein diets, the benefits of raw food, and organic foods. Three women would appreciate information about natural and added sugar in foods. As an aid to healthful point-of-purchase food selections two women suggested placing a poster of the Canada's Food Guide in grocery stores along with appropriate information on its use as well as signs adjacent to fresh produce indicating serving sizes.

Placing nutritional health information at point-of-purchase locations has been discussed in the literature (BCHLA, 2005; Cowburn & Stockley, 2005; Williams, 2005). Taylor observed that whether grocery stores would sanction this idea was debatable as it may decrease sales of processed foods. She also observed that not everyone has access to the internet, where Canada's Food Guide can be obtained, and was surprised, as were two other women, that the pamphlet was not more widely available in printed form.

**In-Store Information**

Many food companies provided detailed information about their food products which was available on line, but two women suggested detailed information should be more easily available at the point-of-purchase, such as nutrition printouts provided by a major US grocery store, or a scanning system to facilitate the use of nutrition labels as suggested by another woman. Information about fresh, unpackaged foods would also be helpful.

Danselle: *They could have a little sign saying one of these apples is a serving of fruit.*

Cowburn and Stockley (2005) have suggested that one limitation of nutrition labels is that they are only applied to pre-packaged foods and do not address the nutrient content of unpackaged food. Other in-store health promotion suggestions made by individual women included the
following, health and nutrition seminars, in-store nutritionists, brochures and information flyers, information on where fresh produce is sourced, and health check marks on food products rather than numerical information. Three women suggested that ideas on how best to prepare and cook fresh produce to obtain the most nutrients would be helpful.

**Alternative Sites of Information**

The women frequently spoke about confusing and contradictory information and three women commented on the difficulty of finding reliable media sources of nutritional health information. Previous research has also indicated that existing information, rather than aiding healthy food choices, has the potential to create conflicts and that the providers of nutritional health information may not have the same interests (Falk et al., 2001; Ristovski-Slijepcevic et al., 2007). The women in the study made various suggestions for the provision of reliable information.

*Vicky: If only we had a healthy lifestyle thing.*

Vicky suggested a virtual website that provided a data base of reliable, unbiased health and nutrition information, with weekly tips on how to apply the information to health rather than weight loss. Five women suggested that health promotion advertisements could provide links to reliable web sites that were not selling something, and four of these women also suggested recommendations for cookbooks with simple and basic recipes. Vicky also suggested that daily tips on healthy eating could be made available at gyms and three women suggested that to attract attention the information should be visual and colourful, and presented as bullet points.

**Knowing About Healthy Eating**

The literature review indicated that people know about healthful eating and know which foods they should be selecting, but have difficulty in putting that knowledge into practice (Bouwman et al., 2009; CCFN, 2008a; Ristovski-Slijepcevic, et al., 2007; Wiggins, 2004). Two
women in the study observed that people in general have different understandings about healthy eating and five women suggested that people do not have adequate information to make healthy food choices. Within the study group there were competing perceptions of how much knowledge the general public had about nutrition and health.

Danielle: *I think people know what's healthy and what's not it's all about choice...some people just don't care and they think they can get their nutritional value out of Twinkies. All they need is calories*

Stephanie: *I ate terribly when I was overweight...a lot of processed ... unhealthy ... fast foods. You don't realise how bad you feel or how bad it makes you feel until you make the change and you realise how good you are afterwards.*

Stephanie also observed that within a weight loss group some people had absolutely no idea about nutrition, while others were quite advanced. Natalie also had no idea how "terrible" her eating habits were until she was introduced to healthy eating. Also, she suggested that people are confused by contradictory information and therefore shy away from any information.

That people do not consider the need to make lifestyle changes has been discussed in the literature (Bouwman et al., 2009; Denscombe, 1993; Hansen et al., 2003; Lupton, 1995; Mckie et al., 1993; Wiggins, 2004). Reasons why people do not change their lifestyles were reflected in three of the women's observations.

Erica: *Or like my grandpa ... "we've been eating that stuff for years"*

Jodi: *But you could get hit by a bus.*

Caitlin: *You could drink the water.*

Two women commented that statistics about health risks became overwhelming and lacked meaning to people who were not ill, so why would they bother to change their lifestyle? Two other women reflected on whether people with different levels of educational and commonsense
responded to nutritional health information in different ways. In relation to understanding nutrition labels Cowburn and Stockley (2005) have reported that older individuals, individuals with lower education and income levels, and individuals who lack basic nutrition knowledge are less likely to successfully decipher the nutrition information provided on nutrition labels.

**Learning About Healthy Eating**

Many health promotion interventions, which focus on lifestyle change, have been criticised for placing the responsibility to make the desired changes solely on the individual without addressing the social environment in which individuals live (Beck, 1993; Beck-Gernsheim, 2000; Bouwman et al., 2009; Lupton, 1995, 2003; Rich & Evans, 2008; Watson et al., 1996; Ristovski-Slijepcevic et al., 2007; Robertson, 2001); however some of the women felt that responsibility for personal health lay with the individual.

*Taylor: You have to take responsibility to educate yourself...if you don't have a body what good is all this education going to do?*

Three other women agreed with Taylor, but added there needed to be supportive structures to facilitate this learning. Six of the women saw a need for a general health and education plan within the K1-12 education system, based on *Canada's Food Guide*, which taught children from a young age about the various components of healthy nutrition. This would at the very least provide children with basic information about health and nutrition. Four of the women further suggested a life studies or life skills for credit class, to be completed each year of study, as one way of delivering the program along with physical activity, business, and finance skills. The different components of the life skills class should be taught by an "expert" who, one of the woman considered, would gain greater response from students. Two of the women noted that children often passed on health and nutrition information to their parents.
Taylor was also concerned about the decreasing amount of physical education in schools and observed that if children are raised with the basics about health and nutrition then it becomes commonsense. Six of the women were encouraging their children to learn about and adopt healthy eating practices; not a straightforward task in today's social environment.

*Jodi: It gets hard when you try to regulate this sort of thing from a freedom of choice point of view, but my choice would have been for not to have that stuff [cookies and candies] that was given.*

While none of the women with children prevented their children from having treats or less healthy foods, these were essentially considered special occasion foods. Jodi was particularly disappointed with the lack of a supportive environment for healthy eating at pre-schools and summer camps her young daughter attended, noting that snacks provided at a summer camp appeared to be a recruiting factor for the camp. Natalie observed that nutritional health education programs in schools did not reach adults.

*Natalie: So anyone who is not a child is basically just toast.*

For people who had already passed through the school system, three women suggested community projects which provided people with the opportunity to discuss health and nutrition concerns in group situations facilitated by a nutritionist could be beneficial. Individual women referred to nutrition talks for mothers provided at libraries, monthly seminars in grocery stores, freely available health and nutrition brochures, and courses on health, nutrition, understanding your body, disease, and cooking could be offered by municipal recreation centres in association with fitness classes. One woman also suggested that education programs should encourage people to try different foods, and two women suggested that programs should promote healthy traditional methods of cooking such as South Asian cooking.
Reaching the adult community was recognised as being difficult by three women when personal choice was taken into account, and another three women observed that any health education approach needed to take into account people's individuality. Critical thinking skills may also be needed.

*Cassie: We teach very practical black and white skill sets...if you don't foster that ability to think critically ... to see the big picture ... Our messaging doesn't promote it... quick fix, right now, instant gratification, yeah.*

Rather than tell people what to do, Coleen, like Cassie, suggested that there was a need to foster critical thinking skills to enable people to "wade" through the misconceptions around food and diets propagated by the media. Natalie thought perhaps the government could look at providing free nutritional guidance to families through qualified nutritionists and dieticians. Taylor identified a similar program in the United Kingdom, initiated by a celebrity chef, which had positive results. Two women were concerned about nutritional advice provided by medical doctors which they thought was inaccurate and only added to the confusing information that was available. In their reflections on future nutritional health education practice the women also considered how nutritional health education could be marketed.

**Marketing Health**

Public health messages are intended to empower the general public to take action over their own health (BCHLA, 2005; 2007; Lupton, 1995; Mckie et al., 1993; SIHLN, 2005; SSCH, 2004), but rather than empowering people messages tended to be reactionary and attempted to scare people into action. One woman was concerned about the type of public health messages she had observed.

*Cassie: We tend to scare people into doing something or entice them...we focus on ...image... when they're advertising being active or eating healthy...they'll use a*
certain type of model... promote a certain look...Healthy in our society, fit and active, looks a certain body type... not three or four different body types ... usually tall, slim, not very proportionate now...With women they're really promoting big chests ... not a natural look.

Four other women were also concerned about the "look" of health described by Cassie and their concern identified with the literature critiques of public health messages (Lupton, 1995, 1996). Not all the women thought media messages and images had a major influence on women's eating patterns.

Coleen: I don't think it is as much as it is played up...the images I saw in magazines never registered, never triggered it... it was the direct commentary to me, the direct messages I was getting from the people that mattered to me.

Despite her personal experience, Coleen, as the mother of a five year old daughter who was conscious of how her body looked, was concerned about the effect of advertisements that focus on the body image of young girls and noted that concerned mothers cannot always protect their daughters from the very public images of advertisements.

Another woman observed that people wanted to look good and didn't care about health risks. Speaking from her own experience she suggested getting people hooked with vanity and looking good, and then showing them what it can do for them health-wise. One of the women who had experience of providing nutrition related workshops noted women tended to be attracted to messages of health that were connected to weight loss. Five of the women felt that health and nutrition campaigns should promote feeling good mentally and physically from the inside rather than focusing on external appearance and weight loss. The focus should also concern the function of food in relation to the body.
Jodi: *Food is fuel for your body so that you can function... the basics ...not... complicated... take away the commercialism ... just selling ... the truth about food, fuel and health.*

The need for truth in nutritional health information was echoed by another woman. The women acknowledged the challenges associated with marketing nutritional health especially when, as noted above, there are health risks people cannot control and people do not necessarily perceive they need to make nutritional changes. With respect to government nutrition recommendations, Coleen referred to her unhealthy experience when following nutritional health guidelines in the 1990s. The negative experience had left her "aloof" from any similar messages concerning health and nutrition. Various suggestions as to how nutritional health could be marketed were put forward by some of the women at the focus group interviews. Individual women considered that "buzz words" specifically designed to attract women to healthy eating may provide a vehicle for nutritional health message and included the following, "power foods or super foods", "energy foods", the concept of "radiance" at all ages, and "live longer". The last suggestion drew comments from three of the women that healthy eating does not necessarily guarantee a longer life. Although not directly related to nutrition, one of the women commented on the cost of physical activity indicating that sometimes government health messages are at odds with other government programs.

*Natalie: HST on gym memberships... are you kidding me...- we're trying to get people active and then we're charging them more.*

Rather than making healthy activities an easier option the government in this instance are potentially building barriers to lifestyle change. A question that arose was how could the government make healthier choices, particularly nutritional choices, easier?
**Marketing Regulations**

Several of the women in the study spoke about uncertainty of food regulations concerning organic certification and marketing of supposedly health benefiting products. Their concerns about health claims may be well founded as Abbé et al. (2008) report that, in Canada, the health claims on foods, imply some health benefit, are the consequence of ill-defined health claim regulation which is open to diverse interpretation by the food industry. Two women indicated they would welcome regulations that made for more truthful advertising and honesty in relaying health benefits of certain foods and their constituents; however, other women thought that stricter regulations may not be possible or even sufficient to ensure truthful advertising.

*Natalie: I think the only way would be to eliminate the people who create the stuff and putting it out on the market.*

*Taylor: [referring to a fast food outlet] One of the biggest corporations in the ...world...the government is never going to do anything to suppress them because of the economic boost ... so you're fighting a losing battle.*

Two more women expressed similar thoughts to Taylor, observing that business enterprises were here to make money and industry is known to use its economic clout to lobby government in their favour. Despite the improbability of stricter regulations several women identified food classifications which could be improved. Three women thought that the existing regulations for naming products "low fat, low salt, or healthy" were unclear, and one of them added that a stricter standard for defining "natural" was needed. These concerns have been previously discussed in the literature and it has also been suggested that knowing where food originates and whether it is safe to eat are fundamental rights of the individual (Cowburn & Stockley, 2005; Williams, 2005).
Where food originates may not always be clear. Erica was concerned about the rigour of the regulations around importing organic foods and whether international regulations were comparable to organic accreditation in Canada. She would also welcome labelling which identified genetically modified food. One woman suggested that people may not want more food regulations. This had recently been demonstrated by the negative response of the citizens of New York City to the proposed regulations banning smoking and removing trans fats from food. In response, another woman observed that opposition would likely come from food manufacturing companies and restaurant food chains as well. Some of the women thought that regulations could make certain foods more accessible in the supermarkets.

*Caitlin*: *Half the stuff has come up from California...why are they not supporting local farmers...let them have first choice and first placement in our grocery stores...everyone has the right to have organic free range food...it shouldn't have to be that expensive.*

Caitlin also suggested government subsidies to organic farmers, but this was countered by the response of one woman who suggested that the cost of subsidies would be paid through taxation. Erica remarked that local farmers or organic farmers cannot lower the cost of their produce if they are to sustain themselves and the non acceptance of higher priced organic produce lay with many people's expectations around "cheap" food.

**Summary**

Chapter 5 is the second of two chapters which report on the findings of the study and provides the analysis of how the women put their blueprints for food selection at the grocery store into practice. The chapter described how the women planned for their food purchases which include various considerations concerning their food selections, the determination of the
store location, constraints, and the use of shopping lists. Chapter 5 concluded with an analysis of the women's reflections of nutritional health education.
Chapter 6: Discussion of the Findings and Conclusion

Introduction

The purpose of this research was to explore how women put into practice their understanding of healthful eating when purchasing food at the grocery store. The literature review and general observations indicate that while people know about healthful eating practices this does not always translate to healthful food selections. It has also been suggested that there is a need to bridge the gap between different knowledges so that optimal eating for health may be understood in everyday language as well as in scientific terms (Ristovski-Slijepcevic et al., 2007). My expectations were that the findings from the research would further our understanding of healthful food selection at the individual level which may then facilitate augmentation and enhancement of those nutritional health education programs intended to encourage women to adopt healthful eating practices. The perspective from which I discuss the findings is one that acknowledges differences in scientific and lay knowledges pertaining to nutritional health. Rather than use new knowledge about everyday understandings to manipulate lay knowledge such that it complies with scientific knowledge, I suggest using new understandings to make scientific understandings a better "fit" with lay understandings. In this chapter the findings, from Chapters 4 and 5, are integrated into a discussion which draws attention to four concepts which I propose should be considered in the formulation and delivery of nutritional health education programs. This discussion only reflects one of potentially several different perspectives.

Following a brief general review of the findings, I discuss the findings in relation to four themes: homogeneity of the sample population, the complexities of food choice, sources of information, and different levels of commonsense. Thirdly, I discuss the findings with respect nutritional health education practice and policy. This is followed by discussions related to future
research in the field, the limitations of the study, and the impact of the research on the researcher. These discussions are followed by the conclusion.

A Review of the Findings

Sixteen health conscious women between the ages of 20 and 49, who had access to a variety of sources of information, were the primary food selector and purchaser in their household, and for whom cost was not a primary concern or overriding factor in their point-of-purchase food decisions, were interviewed. The questions posed to the women aimed to provide answers to the primary question and sub-questions.

The primary question:

- How do women think about health, health risk and food in their grocery store point-of-purchase food selections?

The sub-questions:

- How do the participants draw together health, nutrition and food information that is relevant to their health beliefs?
- How do women incorporate this information into their food selections in the grocery store?
- How do the study participants acquire their health and nutrition information?
- What other factors contribute to their point-of-purchase food selections?

The semi structured open-ended questions I posed to the women in the study group were broad and intended to invite conversations that were led by the women themselves. A major consequence of this approach was the copious amount of data which the interview process produced which I believe suggests that within a homogeneous group of women understandings of health, health risk, and food in relation to point-of-purchase food selections are rich, multidimensional, diverse, at times similar, but often different.
The findings from this study with a homogeneous group of women, further support and strengthen existing knowledge concerning the diversity in meanings of health, health risk, and food, and understanding the complexities of food choice. The findings revealed a gap concerning the role of uncertainty in decisions concerning healthful food selection. In addition, the findings showed that when analysed in the context of food selection, sources of nutritional health information are essentially nutritional health "tools". Furthermore, the "commonsense" (or craft) which the women relied on when making decisions about healthful food purchases, may not be commonly practised in the general population. Thus one key question arises is "what do these findings mean from the perspective of a nutritional health educator?"

The Diverse Understandings of Healthy Food Choice in a Homogeneous Population

Previous studies concerning individual understandings about healthful food practices and food choice have included a broad range of participants; men and women of various age groups (Bouwman et al., 2009; Connors et al., 2001; Falk et al., 2001; Ristovski-Slijepcevic et al., 2007; Wiggins, 2004). This study attempted to define a more homogeneous group which was, specifically, not overly constricted by socioeconomic structures. The homogeneity of the study group, as defined by the demographics of the selected study area and the inclusion criteria which qualified their participation, was reflected, to some degree, in the women's responses and contributions. This suggests that going from the "general population" to the "homogeneous subset of the general population" was generally successful. Interestingly, aspects of the responses and the contributions of the 16 women were also distinctly different individually, that they revealed diverse differences, sometimes stark, in interpretation and then in decision making. This indicates that the "general information" approach to educating people about health and nutrition may not have the qualities required to be effectively reinterpreted to meet the needs of the individual.
Critiques of health education policy and programs have consistently drawn attention to the lack of acknowledgment that health education policy makers and programmers, give to the diverse meanings individuals ascribe to health and health risk (Bryant, 2002; Lupton, 1996, 2003; Prior, 2002; Popay & Williams, 1996; Robertson, 2001), and food and how these meanings affect food selection (Connors et al., 2001; Devine, 2005; Falk et al., 2001; Lupton, 1996; Ristovski-Slijepcevic et al., 2007). In addition, despite the understanding that health is determined not only by the absence of disease, but also by a range of sociocultural, economic, biological and educational factors (WHO, 1986), in reality little attention appears to be given to the social context in which individuals are expected to make health related decisions (Bouwman et al., 2009; Lupton, 1995, 1996; Wiggins, 2004). Within the relatively homogeneous study group, the findings revealed diverse individual social contexts and diverse individual meanings of health, health risk, and food which resulted in diverse individualised healthy food choices.

The women in the study represented married women, married women with children, women living on their own, women living with a partner, and women living with other family members (Table 1.). Three women referred to how their cultural heritage Chinese, Japanese and Ukrainian influenced their approach to healthy food choice, another to her vegetarian lifestyle, and another to her recently adopted almost vegan eating practices. Several of the women revealed how their gastrointestinal issues and/or past restricted eating practices influenced their current eating practices and understandings about nutritional health. Exercise or physical activity was important for all of the women, but what they did and how much varied considerably (Table 1.). Several of the women lived in non-homogeneous personal social environments where food preferences and values around healthy eating of other family members did not reflect their own healthy eating values. From the findings it was not possible to identify a specific representative group of women who responded to all my questions in exactly the same
way. For example, health, health risk and food did not mean exactly the same thing to any of the women with children.

The greatest similarity in social context was revealed by Lillian and Maggie; both 49 years old, married with children and whose spouses had type 2 diabetes. These two women, one Japanese and one Chinese, travelled out of the area on a regular basis to a specialist Asian food retailer. However, despite these similarities their responses to my questions did not consistently reveal similar meanings of health, health risk and food. In general the older women in the study were more concerned with potential health risks associated with eating practices than the younger women (under 30 years of age) who did not perceive health risk as something they needed to be too worried about at this time. But the meaning of health risk was expressed in various ways. Within this apparently homogeneous group the women variously shared diverse understandings of health, health risk and food. This commonality and diversity of various perspectives on healthful eating practices across age groups, culture and social situation has been suggested by previous research (Chapman & Beagan, 2003).

Falk et al. (2001) have suggested that understanding the multiform meanings ascribed to health and food is potentially beneficial for health practitioners. Given the diversity of meanings ascribed to health, health risk, and food, as identified by a reasonably homogenous group of women, it is not only necessary that nutritional health educators be aware that there are diverse meanings of health, health risk and food, but also necessary that nutritional health educators understand how these diverse meanings relate to actual, real life, food selection. To explain what this means I highlight the example of three participants who were concerned about the potential adverse health effects of consuming soy products. Each woman made a decision around her own life situation taking into consideration, for example, health status, the amount of soy products consumed, and the benefits and potential adverse health effects that may result.
That the outcomes were different is not surprising since the factors taken into account differed between the three women. Although the purpose of this study was to explore specifically how the women made healthful food purchases at the grocery store, it was not possible to separate this life situation from the broader context of their lives.

Life events and experiences, and the social context in which the women in the study group made decisions about healthful food selections also influenced their actual food purchases. The women in the study group experienced a variety of social environments, the home, the workplace and other social settings, wherein their personal nutritional health paradigms were not necessarily ascribed to by the people around them. Several of the women in this study recounted their anxieties and frustrations when confronted with situations where their nutritional choices were not considered "normal", but were thought obsessive or freakish. Some situations which challenged health food values, self control, and healthful intentions could cause anxiety and feelings of guilt. In terms of nutritional health education, nutritional health educators need to not only understand the diverse reactions to, and interpretations of nutritional health recommendations and information, but also to comprehend the diverse realities of practicing healthful eating that the women experience in all the settings of daily living.

**Understanding the Complexities of Food Choice: Blueprints and Uncertainty**

The findings of this study support the understanding that "food choice processes are complex, evolving, dynamic and situational" (Connors et al., 2001, p. 190; Hammond & Chapman, 2008) and also suggest that the food-choice process model (Figure 1), which may presume a general application, actually allows for a high degree of variation among individual application of the food choice process. Each woman's individual blueprint for healthy food purchases fitted the model in some way. At the same time, and as documented in the literature, the individual blueprints revealed a high degree of variation, or heterogeneity, in the way that the
women managed value relationships between health, food preferences, taste, cost, convenience and other influences on food choice which is intrinsic to the food choice processes.

Furthermore, as with previous research which has identified categories and definitions of healthy eating (Bouwman et al., 2009; Chapman & Beagan, 2003; Connors et al., 2001; Falk et al., 2001; Ristovski-Slijepcevic et al., 2007), while the women in my study revealed shared understandings of healthy eating no subgroup could be identified by a specific set of meanings or perspective ascribed to health, health risk, and food, or ultimate healthy food choice. Thus while the women in the study revealed some commonality of food choice processes the complexities of food choice blueprints were unique to the individual. The simplicity and linear appearance of the food-choice process model (Figure 1) may not adequately describe the non-linear and unique healthy food choice process adopted by the women in this study. When considering a seemingly homogeneous population group, this study, in support of previous research (Chapman & Beagan, 2003), indicates that it may be reasonable to assume the existence of heterogeneous blueprints for healthy food choice.

To further complicate the food choice process, all decisions involve varying degrees of uncertainty (Beck, 1999; Douglas, 1985, Douglas & Wildavsky, 1982; Hayes, 1992; Zinn, 2008). Decisions concerning healthy food selection may also involve conflicts between the values identified in the food-choice process model (Connors et al., 2001; Falk et al., 2001; Hammond & Chapman, 2008). The findings of this study indicate that conflicts and uncertainty were often factors in the participants' decisions concerning healthy food selections. While the women recognised conflicts such as conflicting food preferences within a family group, the findings do not indicate whether the women recognised they were dealing with uncertainty in their decisions about food choice. As with previous research (Hammond et al., 2011; Hammond & Chapman, 2008) uncertainty around healthy food selection was evidenced by the confusion
around the benefits of various foods, the use of nutritional supplements, how foods were grown, the potential health risks associated with the consumption of particular foods, the truthfulness of information, and conflicting nutritional health messages.

The literature suggests (Falk et al., 2001; Hammond et al., 2011; Lee et al., 2005; Slovic, 1986), that when confused, or uncertain, one option is to default to what is known and trusted; an option taken up by some of the women. As previously identified (Hammond & Chapman, 2008), another option, for some of the women, was to perform a cost benefit analysis as described by Douglas & Wildavsky (1982) in relation to nutritional health and food choice. Once again I refer to the women who were concerned about the potential health risks associated with consuming soy products. In their nutritional health related cost-benefit analyses the three women variously weighed the potential health benefits of soy against potential harms as well as with other values involved in the food choice decision-making process.

To conclude this section, from a food decision making perspective, the decision-maker has to create a model (blueprint) of the “way things work” in relation to food consumption and health benefit, “the outcome(s) they want”, and "the outcome(s) they don’t want". Not only do people need to know something about the outcome(s), but also the different ways of getting there. This suggests to me a need for nutritional health educators to provide individuals with ways of understanding the cause-effect relationships between actions and outcomes and not just focus on actions with implied outcomes; as is the case with much of the nutritional health information that is available. For example, weight loss may be an action associated with health improvement, but there are many ways to achieve weight loss, some healthy and some not. It may benefit individuals to know about the many ways of achieving healthy weight loss. The domain that specialises in understanding the cause-effect relationships between actions and outcomes is risk and decision-making under uncertainty, so perhaps a better appreciation of risk
and choice under conditions of uncertainty is required by the “creators” of nutritional health messages.

Source of Information: Healthy Nutrition Tools

The women in the study group obtained their health and nutrition information from diverse sources as indicated in the findings. A common feature of the nutritional health information available to the participants, and people in general, is that the information is focused on specific issues and can be characterised as "tools to achieve a particular outcome". For instance, the women referred to a variety of "diet" books which were intended to bring about certain outcomes such as weight loss, or assist athletic performance. Other tools included "nutritional agents" which identify specific health values, such as oats to reduce cholesterol, or an aid to improve overall wellbeing. The latter of which, typically claim a number of "general benefits" which in comparison to the "specific focus" tools are less well defined and the "how" less well outlined. For example, *Canada's Food Guide*, a nutrition tool for the general population, identifies "better overall health, lower risk of disease, a healthy body weight, feeling and looking better, more energy, and stronger muscles and bones" as the benefits to be gained by exercising and following the suggestions for healthy food selection (Health Canada, 2007), but does not precisely explain how an individual is to achieve the associated benefits or how various food selections specifically relate to improved health.

Whether the benefit is "specific" or "general", the "tools" are fundamentally competing with each other and often in an incompatible or contradictory way. For instance, the findings suggest that weight loss tools cannot be applied for healthy athletic performance. Stephanie found her weight loss diet did not support her newly acquired physical activity program. In addition, information concerning the health value of eggs and specific food components, such as protein and carbohydrate, is contradictory. This means that the user has to figure out which
specific or general tool will provide the outcome she wants based on her acquired knowledge and experience. From a nutritional science perspective, this would be a very difficult task in isolation, especially since the understanding of what each individual really needs is dependent on a scientific analysis of their individual choices and how it affects all of the dimensions of their health (Hammond, 2004). Given that the different dimensions of nutritional health for any individual cannot necessarily be achieved through the application of a single tool the individual is faced with the difficult task of combining various tools to achieve the desired outcome(s). For example, a single tool in the form of adequate calcium intake may decrease the risk of osteoporosis, but may not decrease the risk of other diseases. This information alone may not be adequate as previous research indicates that women experience difficulties in evaluating the sufficiency of calcium in their diet (Hammond et al., 2011).

From a nutritional health education perspective, the complexities of healthy food choice demand a variety of reliable tools from which an individual can select. If individuals are to achieve personally tailored nutritional health outcome(s), the tools need to be simple enough to be applied directly yet sophisticated enough to embody all that the individual actually needs to achieve their intended outcome. For instance, the tools need to have "tuning devices" to enable individuals to use the tools their way in making their decisions. What is actually needed has very personal dimensions making "one-size-fits-all" tools inadequate for the task.

Variations of Nutritional Health "Commonsense"

Several of the women in the study referred to using their commonsense or intuition when making nutritional health decisions. One definition of the term "commonsense" states, “sound and prudent judgment based on a simple perception of the situation or facts" (Merriam-Webster, 2011), and another that "commonsense, based on a strict construction of the term, consists of what people in common would agree on: that which they "sense" as their common natural
understanding" (Wikipedia, 2011). The findings of the study suggest that the participants shared, to some degree, a mutual or common understanding of healthful eating practices. Coleen suggested that people may have "different levels of commonsense" pertaining to healthful eating practices. The use of the word "levels" may infer a hierarchy of commonsense which privileges particular types of knowledge over others. Therefore, "variations" of commonsense may better describe the commonsense understandings of healthy eating practices observed in this study. These variations are to be expected because the women had developed their personal understandings of nutritional health practices through accumulating, evaluating, and applying health and nutrition information within the context of their diverse individual everyday life experiences.

From my nutritional science perspective, and contrary to the literature (Lupton, 1996; Wiggins, 2004), the study findings imply that a commonsense understanding of nutritional health does not require an extensive understanding of human nutrition. This commonsense understanding of nutritional health reflects healthy eating for holistic health rather than preventing specific diseases as observed by Hammond et al. (2011). Interestingly, although only a few of the women reported using Health Canada's (2007) guidelines for healthy eating for overall health benefits, the participants' healthy eating practices aligned, to varying degrees, with these nutritional recommendations; a finding that has been observed in previous studies concerning healthy food selection (Hammond et al., 2011) and which has been termed as a mainstream perspective on healthful eating by Chapman and Beagan (2003). Furthermore, the findings from this study, which support previous research (Hammond & Chapman, 2008), indicate that the women made judgements about their healthy food selection in a systematic weighing of benefits and disadvantages based on their commonsense and lay knowledge. Each woman made trade-offs and was able to justify her food selections with respect to her individual
concept of nutritional health. Examples of this include the justifications provided for avoiding particular foods and for enjoying treats. Lay knowledge (Popay & Williams, 1996; Robertson, 2001) and commonsense understandings of nutritional health practices, (Lupton, 1995, 1996) may not be considered legitimate. However, the findings of this study show that lay knowledge and commonsense understandings of nutritional health are not only legitimate, but as the literature suggests (Hammond & Chapman, 2008; Ristovski-Slijepcevic et al., 2007) also provide for logical decision making concerning healthy food selection.

In summary, my research and interview questions which were designed to explore how women think about health, health risk and food in their point-of-purchase healthy food selections revealed a commonsense understanding of healthy eating practices within a relatively homogenous group of women, but with a high degree of variation. In addition, uncertainty in decision making compounds the fundamentally highly complex food-choice process and to ameliorate healthy food selections a diverse range of healthy nutrition tools is required to enable individuals to make healthy food choices in a way that makes sense to them. Such diversity in the ways in which women come to make healthy food selections at the grocery store makes nutritional health education a highly complex undertaking.

**Implications for Practice and Policy**

Nutrition education has been defined as "any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food- and nutrition-related behaviours conducive to health and well being" (Contento, 2007, p. 15). Thus promoting nutritional health and well being is a complex issue (Bouwman et al., 2009; Ristovski-Slijepcevic et al., 2007). From a nutritional health education practice perspective the findings of the study suggest that achieving successful information dissemination, although only one aspect of nutrition education, is critical to encouraging healthy
eating practices. In addition, creating a supportive environment which engenders healthy eating practices is clearly needed.

**Information Dissemination**

Internationally, current nutritional health interventions focus on making healthy food choices easier, but this approach may not be sufficient (Bouwman et al., 2009). Collectively the findings of the study suggest that any "one-size-fits-all" approach to health and nutrition education targeted at the general population is unlikely to be overwhelmingly successful. Yet despite the development of more specific population orientated nutrition education interventions (Contento, 2007) and the widespread promotion of nutritional guidelines, studies have and continue to indicate that consumption of healthy foods could be improved (Chapman & Beagan, 2003; Hammond et al., 2011). The findings of this study also suggest that the general recommendations for healthy eating for overall health may not be as widely promoted as they could. Several women in the study expressed surprise that Canada's Food Guide was not more readily available in printed form.

Previous and current research (Chapman & Beagan, 2003; Hammond et al., 2011), and the findings of this study suggest that while some women share a commonsense of healthy eating practices this may not be born out in the general population. Furthermore, within the study group there were two women who had not always known about healthy eating practices, and other research suggests that women may not be aware of the connections between healthful eating practices and certain diseases, such as cancer and osteoporosis (Chapman & Beagan, 2003; Hammond et al., 2011). Additionally, Taylor referred to "un-common sense" about healthy eating implying that healthful eating practices may not necessarily have a common understanding within the general population.
These findings challenge the assumption that people, in general, know about healthful eating practices (Bouwman et al., 2009; CCFN, 2008b; Ristovski-Slijepcevic et al., 2007; Wiggins, 2004). The prodigious amount of nutritional health related information available to the general public has not, as yet, significantly effected positive nutritional changes in the general population. While new information can enhance understanding more information and knowledge does not automatically aid the decision making process (Bouwman et al., 2009; Irving & Neumark-Sztainer, 2002), may be confusing, competing and contradictory (Hammond et al., 2011), and may even increase the uncertainty involved in decision processes (Beck, 1999; Hammond & Chapman, 2008; Lupton, 1995, 1996). While more specific population orientated nutrition education interventions may facilitate positive changes in eating behaviours people will continue to be exposed to alternative nutritional health information when out of that specific learning environment. What is required are ways and means for individuals to extract and process relevant and reliable information from that which is available. This will enable individuals to assimilate for themselves the information and the interdependencies between all of the factors that control their food choices and the associated nutritional health outcomes.

Against this background, it is clear that the foundations for nutritional health education practice need to be further developed in order to deal with the identified ineffectiveness of the one-size-fits all approach to advising individuals on nutritional health food choices. As noted above, women make judgements about their healthy food choices. From an educational perspective, how people weigh evidence (large amounts of often conflicting scientific and non scientific information of diverse degrees of reliability) appears to be central to overcoming the limitations of current policies and practices in the domain of nutritional health. Individuals use subjective rationale based on their everyday knowledge and life experiences to respond to health recommendations delivered by experts (Adam et al., 2000; Beck, 1992; Denscombe, 1993;
Douglas, 1985; Douglas & Wildavsky, 1982; Frankel et al., 1991; Hayes, 1992; Krimsky, 1992; Lupton, 1995; Otway, 1992; Williams & Calnan, 1996; Zinn, 2008). Therefore, from a public practice perspective the factors that influence the decisions made by individuals, as well as how individuals subjectively weigh conflicting information, need to be introduced in an easily accessible way both to practitioners and recipients.

In terms of nutritional health education practice any tools, that is, any educational program, package of information, or skill development, need to be adaptable to suit the diverse and multidimensional understandings of nutritional health. In order to develop and deliver such tools, I suggest that nutritional health education practitioners first examine their own meanings of health, health risk, and food in relation to food choice and understand their own reasons for their own food selections. This may engender a better understanding of the complex food decision process and the tools and skills required for the task. Furthermore, nutritional health education practitioners may not always have an extensive understanding of human nutrition or education practice. Douglas (1985) suggests "even experts may be lost outside of their own skilled experience" (p. 33). Critically examining and evaluating how we reach our own healthy food choices by assessing "how we know we know something", may instil a critical and cautionary approach to nutritional health education practice. While the women in this study aligned with the current health recommendation perspective, Chapman and Beagan (2003) note that "advice to "eat healthful foods" which is offered from a mainstream perspective...may not be received or applied in the way the nutrition educator has intended if the client is coming from another perspective." Nutritional health practitioners may also benefit from a better understanding of other perspectives of nutritional health and how individuals use their lay knowledge in relation to understanding nutritional health.
Dissemination of health risk information has been part of nutritional health interventions for decades. If health risk information is to remain part of nutritional health education then, as Denscombe (1993) has suggested, more needs to be known as to how lay people think about and rationalise their personal health risks in relation to their personal life situations. The findings of this study support the view that there is "no single correct conception of risk" (Douglas & Wildavsky, 1982, p. 4; Joffe, 2005; Slovic, 1986). In addition, the findings, in common with other studies (Hammond & Chapman, 2008; Hammond et al., 2011), revealed a general lack of explicit consideration given to health risk and uncertainty in decisions concerning healthy food selection among the participants. A more comprehensive understanding of how individuals actually consider risk and decision-making under uncertainty may benefit designers of nutritional health education programs.

Previous studies have indicated that tailoring nutrition education to an individual's requirements is effective in promoting positive nutritional health food choices (Bouwman et al., 2009). Rather than trying to fit individuals in to a single pre-formed healthy food decision blueprint, nutritional health interventions may be more successful if focused on providing tools and skills to enable individuals to construct their own nutritional health blueprints best suited to their way of understanding nutritional health related food choices. For instance, nutrition fact labels are point-of-purchase tools which arguably could be more useful to "end-users" if they could be reconfigured to suit individual paradigms. Typically, the nutrient content of a particular nutrient is provided as a percent of daily value or requirement. However, percent value is not generally well understood (Cowburn & Stockley, 2005) and the majority of the women in the study did not consider the percent-daily-value helpful; a view shared by several nutritional health professionals present at a 2010 nutritional health conference. To help people understand and use the percent-daily-value, Health Canada (2011) has recently established an internet site
concerning its use to which consumers are directed through media advertisements. While Health Canada has provided a "tuning device" for understanding percent-daily-value, this may not be effective since the tool itself is not universally viewed as helpful and possibly not widely used. It would therefore appear to be of benefit to ask individuals to suggest tools that would help them make healthful food choices.

Creating a Supportive Environment

One criticism of government inspired health education programs is that too much responsibility for health education and behaviour change is placed on the individual (Aphramor & Gingras, 2008; Krimsky, 1992; Lupton, 2003; Ristovski-Slijepcevic et al., 2007; Zinn, 2008). Another criticism is that insufficient attention is paid to the significance of the social environment which influences nutritional choice (Battle & Brownell, 1996; Bouwman et al., 2009; Heenan, 2008; Ristovski-Slijepcevic et al., 2007; Zerbe, 1993). Recent approaches to nutrition education acknowledge the impact of the environment on food choice and efforts are being made to make certain environments more conducive to healthy eating behaviours (Contento, 2007). However, many social environments remain unsupportive, if not hostile, to healthy eating practices. The findings of this study indicate that while the women accepted responsibility for their nutritional health practices, the social environment in which the women were making healthful food choices was not necessarily conducive to making healthful changes. Previous research (Battle & Brownell, 1996; Bouwman et al., 2009; Cowburn & Stockley, 2005; Watson et al., 1996) and government reports (BCHLA, 2005; SIHLN, 2005; SSCH, 2004) have drawn attention to this problem. What a supportive environment in terms of healthful food choice looks like and how to achieve it may vary, but for this particular group of women and potentially similar populations may include the following, normalising healthy food selection, encouraging critical thinking skills, advocating for information reliability and truthfulness in
A supportive environment was identified in the findings as one wherein healthful food selections were accepted as the "norm" and in which individuals who choose to eat healthily were not perceived as "obsessive" or "a freak". Bouwman et al. (2009) have suggested that a new standard of healthful eating practice needs to be considered which encourages a healthful eating practice discourse in the public sphere. Within this discourse, healthful eating practices would be thoughtfully valued, and represented as uncomplicated and normal every day practice. The interview process of this study demonstrated that sites for healthful eating practice discourse can be achieved. The findings indicate that the women were involved in such healthful eating practice discourse in the context of their daily lives through which they had developed individual blueprints for nutritional health and healthy food selection. These blueprints were not the finished project for healthy food selection, but a platform upon which each woman was continuing to develop her personal paradigm of healthy food choice.

Normalising healthful food selections may require nutritional health education policy to reconsider the type of nutritional health messages that will generate a supportive environment. One specific criticism of government nutritional health education programs is that health related messages may be inadvertently fuelling the increasing incidence of eating disorders (BCHLA, 2005; Irving & Neumark-Sztainer, 2002). The findings of the study suggest that nutritional health education needs to reflect an image of health that does not have the potential to encourage adverse nutritional health effects such as restrictive eating patterns. Although the findings did not conclusively find for an image of health that did not include physical appearance, they did suggest that attention should be paid to accurately portraying the full range of healthy body types (whatever this may be) in nutritional health messages. Previous research suggests that it is not
necessary to be thin to be healthy (Aphramor & Gingras, 2008; Gaesser, 2003; Malson, 2008; Markula, 2008), and individuals need to be able to connect with an image of health if they are to act on the message (Bouwman et al., 2009; Lupton, 1995). Therefore, nutritional health policy needs to include guidelines for incorporating realistic understandings of healthy bodies into nutritional health education practice. For girls and young women in particular, Zerbe (2008) has suggested that it is necessary to bring about positive changes in the way that girls understand their bodies in relation to health and nutrition. This requires creating a discourse around the myriad of social issues which impact and direct the everyday eating behaviours of many girls and young women.

Misinterpretation of nutritional health recommendations can, as Coleen and Jodi recounted, result in eating and practices which have the potential to increase health risks. Nutritional health education policy therefore needs to accommodate the possibility of misinterpretation. Developing personal skills as part of public health policy has been documented in the literature (Mckie et al., 1993), as has facilitating the development of critical thinking skills (Contento, 2007). The study findings suggest that developing critical thinking skills, in particular, may have the potential to enable individuals to better interpret nutritional health information. As the women in the study suggested, implementing a nutritional health education program at all levels of primary and secondary education would conceivably provide school age children with a basic, common, and practically useful knowledge of healthful eating practices. If such a program is to generate a commonsense understanding of healthful food practices in children and adolescents then the program must also encourage critical thinking skills.

Mckie et al (1993) have suggested that public health policy should include information advocacy. The findings of the study indicate there are a number of issues concerning the validity
of nutritional health information that is freely available. The women in the study considered that people have the right to know the truth about the food they eat and they suggested that the way in which "healthy" foods are advertised needs to be addressed. Consumers need to have sufficient information at the point-of-purchase to make adequately informed decisions about their food selections, but not all individuals have the necessary tools to determine the overall health value of a product described as "healthy" or "natural" (Cowburn & Stockley, 2005). The findings suggest that existing regulations for advertising food as "healthy", "natural", or "organic" may not be sufficient to ensure that the products are, in their entirety, what they purport to be.

Given individuals' diverse understandings of nutritional health and food choice it may be necessary for nutritional health policy to consistently support regulations concerning the addition of particular nutrients in foods. The high salt or sodium content of many processed foods was a concern for the sample population of this study. Reducing sodium intake can reduce the risk of high blood pressure and decrease the risk of stroke (Whitney & Rady Rolfe, 2005). However, the Canadian Federal Government has recently decided to disband the twenty five member Sodium Working Group, prior to the completion of its mandate to reduce sodium in processed food products, leaving the food industry inadequately positioned to self regulate sodium reduction (Jeffery, 2011). Jeffery (2011) considers this strategy to be ineffective and unlikely to bring about the necessary reduction of sodium in processed foods that would improve the health of the public.

Nutritional health policy may also need to consider regulation of media reports concerning nutritional health messages. The nutritional health information that is available is representative of a diverse range of nutritional health paradigms and principles which may not always support healthful eating practices (Falk et al., 2001; Ristovski-Slijepcevic et al., 2007).
The findings, which support previous research (Hammond et al., 2011), suggest that reliable sources of nutritional health information are necessary to simplify healthful food selections, but the literature indicates that media reports of science may not be accurate (Joffe, 2005) or possibly the result of "hocus-pocus" science (Beck, 1992, p. 161). Furthermore, nutritional health information on the internet is often misleading and can be fraudulent (Beyerstein, 1997; Drazen, 2003; Whitney & Rady Rolfes, 2005). It may also be difficult to determine whether the source is reliable (Otway, 1992).

Individuals do not unreservedly accept new information as true (Zinn, 2008), do not always trust science (Hansen et al., 2003), and are often sceptical about expert advice (Chapman & Beagan, 2003; Ristovski - Slijepcevic et al., 2007; Williams & Calnan, 1996; Zinn, 2008). The women in the study were generally cautious about new nutritional health information and judged the reliability of new information against what they already knew and whether the source was to be trusted. The level of trust in the information provider is a key determinant as to whether the information will be accepted (Hansen et al., 2003; Lee et al., 2005) and, as the findings indicate, perceived misinformation can lead to a decrease in the level of trust in that particular source (Frankel et al., 1991; Zinn, 2008). When communication concerns risk and uncertainty trust and shared meanings between all parties are necessary if information transfer is to be successful (Beck, 1995; Williams & Calnan, 1996; Raynor, 1992). Nutritional health policy may need to consider how people perceive the sources of nutritional health information and establish strategies that will build and maintain trust between information providers and recipients.

Implications for Future Research

I have identified several general and specific implications for future research. In general, one area of future research could consider development of a unifying domain of nutritional
health and educational sciences to bring together different knowledges. There is an increasing body of knowledge that challenges the assumption that expert knowledge is superior to lay knowledge and which calls for lay knowledge to be considered in research that informs public health and health promotion policy (Bryant, 2002; Denscombe, 1993; Douglas, 1985; Hansen et al., 2003; Hayes, 1992; Lupton, 1995, 1997; Milburn, 1996; Popay & Williams, 1996; Prior, 2003; Renn, 1992; Ristovski-Slijepcevic, 2007; Robertson, 2001; Watson et al., 1996). Milburn (1996) and Watson et al. (1996) have suggested that lay knowledge can provide a conceptual understanding for theory development in health promotion.

Despite an increasing number of studies related to nutritional health which, like this study, report on the diverse and multi-dimensional lay understandings of healthy eating practice, nutritional health policy have, until recently, continued to advocate a generalised nutritional health communication protocol. For example, in Canada, health education practice for the last decade has been underpinned by the "Population Health Template" (Health Canada, 2001). The template is a multipurpose model which can be used for a variety of functions including development of policy, programming, and population health models and instruments for improving the health of the general population (Health Canada, 2001). Although more recent systematic approaches to nutrition education focus on specific population groups and their specific nutritional needs (Contento, 2007), the models for developing programs are linear and do not appear to adequately accommodate the multivariable, non-linear and dynamic nature of healthy food choice.

While generalised nutritional health protocols may be easy to deliver (Mckie et al., 1993), they are clearly not effective given that the findings of this study suggest that healthy food selections are not normal practice for many individuals. Focusing on specific population groups at the expense of the general population, may result in many people being "left out" of
the nutritional health education process. It is perhaps time, as has been suggested (Byrant, 2002; Aphramor & Gingras, 2008), for a nutritional health policy paradigm shift or even a fundamental change in the underlying philosophy of nutritional health education. A unifying domain of knowledge which considers all aspects of nutritional health education, such as nutritional science, educational sciences and other domains interested in encouraging healthy eating practices, and which acknowledges and incorporates lay understandings of healthy food choice, may provide a platform which enables changes in the underlying philosophies and paradigms concerning nutritional health education. A systems approach, such as that described by Dörner (1996), to the public understanding of nutritional health which incorporates the non-linear and dynamic nature of the problem and the different types and domains of knowledge available to solve the problem may provides a basis for philosophical or paradigmatic shift. The following specific implications for future research would add to the existing knowledge concerning nutritional health and healthy food selection.

Previous research has suggested that a better comprehension of how individuals develop and construct healthful eating practices (Hammond et al., 2011; Ristovski-Slijepcevic et al., 2007) and how nutrient information is interpreted is required (Bouwman, et al., 2009). Heuristics or rules of thumb, which simplify complex decision-making (Connors et al., 2001; Denscombe, 1993; Falk et al., 2001; Joffe, 2003; Krimsky, 1992; Slovic et al., 2004), were evident in the participants' blueprints for healthy food selection. Research which seeks to understand how people develop and use heuristics to simplify food choice may enhance understanding of the construction of healthful eating practices. In addition, little is known about how individuals incorporate possibly unreliable and inaccurate media-translated scientific information into their existing tacit knowledge or how they come to understand new scientific phenomena (Joffe, 2005). Furthermore, previous research (Bouwman et al. 2009; Wiggins,
2004) indicates that a better comprehension of the diverse and multidimensional understandings individuals ascribe to nutritional health has the potential to inform nutritional health education practice.

The findings of this study have provided some insight as to how women in a particular age group understand nutritional health, interpret nutrient information, use "uncertain" nutritional health information, and develop blueprints for healthy food selection. Future research could include similarly designed studies for other population sub groups not only for food selections at the grocery store, but also for other point-of-purchase environments. Other population sub-groups should include not only consumers of food, but also the food industry and media representatives who report on nutritional health. A compendium of such complimentary and sharply focused studies could then be compared and contrasted against more general large population studies in the same domain. Together, these specific and general studies would not only expand the knowledge base in this domain but may also provide new insights into other domains of "individual’s nutritional health food choices under uncertainty".

In terms of contemporary nutrition and health education, how people value food is not well understood (Burns & Gavey, 2008). The findings from this study support this view and suggest that some women who exercise may not value nutrition in relation to health and weight maintenance. Studies which explore how women who exercise value food may provide for understanding how women develop healthy weight maintenance practices. Although not specifically considered in this study, encouraging people to grow their own food, either individually or collectively in the community, may enhance people's understanding of the value of food. Nutrition education commonly presents information in terms of the components of food, but how such information is managed and translated into the foods people eat needs to be further examined (Connors et al, 2001; Hammond et al., 2011; Wiggins, 2004). The findings of
this study suggest that the women had a general understanding of the components of food and for most this was adequate, but two of the women indicated they were interested in learning more about how specific components of food related to health. This potentially could include information on how food is absorbed and metabolised. In addition to investigating how nutrient information is managed and translated into healthful eating practices at the individual level, determining how detailed that information needs to be may be beneficial as more information, as noted above, may further complicate the already complex food decision process.

With respect to marketing nutritional health concerning everyday food selection, the findings suggest that women are potentially more likely to respond to nutrition recommendations when related to weight loss and/or physical appearance. Studies which explore how women consider weight loss may enable development of the concept of "healthy" weight loss. Finally, despite a considerable body of knowledge that has qualitatively explored the diverse, multidimensional, and individualistic nature of nutritional health understandings, and the complexities of food selection, existing nutritional health education interventions continue to generalise nutritional health information for use by the general public. It is possible that nutritional health policy makers and practitioners are not aware that this body of knowledge exists or the value of incorporating this knowledge into nutritional policy and program design. Also possible is the reliance on quantitative research studies, which as Hansen et al. (2003) have suggested are not, on their own, suitable for studying nutritional attitudes. Studies which investigate research data preferences of nutritional health policy makers, programmers and educators may identify how research data and findings are interpreted and used.

**Limitations of the Study**

One limitation of this research, which is a cost of the highly specific focus of the study, is that due to the small sample size and the uniqueness of the study group the findings cannot be
generalised to the general population. Despite the inability to generalise the findings, it may be possible to transfer the findings to a similar population group if the "user" of these findings judges the transfer applicable. Another limitation is that, although the study was designed to encourage the women to lead the conversations, investigator bias is necessarily present. The interview questions I designed were influenced, if not consciously then subconsciously, by my own understandings of healthful eating practices and healthy food selections. Furthermore, these understandings have likely influenced my interpretation of the data and the findings which is almost inevitable in human endeavours. In addition, the design of the interview questions may not have revealed all of the participants' meanings of health, health risk and food. For instance, the value of taste was not fully explored. The study was not intended to test the women's knowledge concerning the nutrient composition of the foods they purchased. While some of the women volunteered nutrient information, such as the vitamin and mineral content of their food selections, the findings may not reflect their full understanding of the nutrient content of the foods they purchased.

Finally, the research study recruitment process may also have been a limiting factor. I had assumed that women who exercised may be more likely to eat healthily and be willing to share their knowledge of their healthful food purchasing practices. However, my request to recruit participants was denied by several fitness facilities and where my request was granted the actual response to my invitation to participate was limited. Observations made by the owners of two personal training studios and a participant indicated that women who worked out in gyms were generally not interested in healthy eating. Furthermore, because the study participants were self selected, the findings may not reflect common understandings of nutritional health and food selection in women in the same age group. Four of the women (25% of the study group) recounted past restrictive eating practices which may have provided them with a more developed
understanding of nutritional (ill) health. Two other women reported gastrointestinal issues which may have lead to a greater interest in understanding their nutritional requirements for health.

The nutritional information/consultation sessions provided as remuneration may also have been a limitation as these sessions could be viewed as an attempt to valorise expert knowledge over lay knowledge. This may potentially influence the participants' responses in some way which did not reflect their actual practices. To minimise this potentiality I began each interview with an explanation for the research and my perspective; a perspective that acknowledges differences between scientific and lay understandings of nutritional health and healthy food choice which arise from different life experiences. The nutritional information sessions were intended to provide different or "other" nutritional health related information, available to me, which would add to the women's existing knowledge in the spirit of an extended discussion between two individuals with a common interest. As my own observations and the literature research indicated that more information has the potential to further complicate the complex healthy food choice process, the information that I provided to each participant was at their request and intended to clarify particular topics of interest.

Impact of the Research on the Researcher

The purpose of this research was to further understanding of how women think about health, health risk and food when purchasing food at the grocery store in the context of nutritional health education. As an adult learner, the research process has provided me with an opportunity to not only investigate the subject of the research project and increase my understanding of the complex subject of food choice, but also to explore and reflect on my own meanings of health, health risk and food in relation to food choice. In addition, the research project provided me with the opportunity to critically examine how my own understandings had
the potential to influence my interpretation of the responses of the women participants. Furthermore, I was able to examine how I may utilise new skills acquired through the interview process to my own practice.

At each interview I became a listener rather than the receiver, interpreter, and counsellor that I am accustomed to being in professional life. Although the interviews did require some immediate interpretation to clarify responses and to further the conversations, I was not required to analyse responses and provide advice "in situ". The transcription and data analysis process enabled me to get to know the women and better understand the individual contexts in which they made their food choices. In my practice allowing time between "data collection" and interpretation has the potential to generate individually tailored advice. The research project in its entirety has greatly broadened my knowledge and understanding of my field of practice which has without doubt changed my approach my professional practice. I have always used open-ended and semi-structured questions when counselling clients. Drawing on what I have learnt from this study, I will now expand those questions to encourage conversations that more fully identify the context(s) in which my clients are making their nutritional and physical activity decisions.

The research process has been a rewarding learning experience for me going beyond the research process. Interactions at the focus group interview indicated how interconnected people in communities are. At the first focus group interview two women recognised each other from visits with their children to a local park. The second focus group interviewed also revealed prior acquaintances. Two of the women had met in September 2009 while hiking the Grouse Grind. They had climbed together and chatted about health and nutrition although they had never met before. One of these two women also recognised another woman at the interview from the gym.
where they had worked out beside each other. Discovering and developing connections between individuals in a community will now be a part of my practice.

**Conclusion**

The healthful food choice process is highly complex, as indicated by previous research and the findings of this study. The food-choice process model provides general guidance for nutritional health educators as to what is involved in decisions concerning nutritional health. Because it is unlikely that any two individuals will express identical healthful food choice processes, nutritional health educators need to be equipped to deal with diverse and multidimensional understandings of health and food in relation to food selection. As with previous research, the findings indicate that lay knowledge or socially derived knowledge with respect to healthful food selection can stand alongside that of nutritional health experts. This suggests that nutritional health educators need not only acknowledge that different knowledges exist, but accept those different knowledges as valid constructs. Rather than continue to expect individuals to replicate expert understandings, nutritional health educators need to present nutritional health tools in a form which complements different knowledges. It may be helpful, for anyone involved in nutritional health education, to examine their own knowledge concerning their personal healthful food practices. This may lead to a better understanding of the complexity of the food choice process and to comprehend the different ways of expressing healthful food choices.

Contrary to the assumption that in general people know about healthful food practices, not all individuals do "know" and some individuals may only "know" by default or when unintentionally exposed to healthful food practices. Reaching individuals who don't know about healthful eating practices in all probability requires changes to the way that food is considered in the existing social environment which is not, as the findings and previous research suggest,
conducive to healthful eating practices. In addition, to assist individuals with their healthful food practices it is necessary to explore ways to promote critical thinking skills which enable individuals to make properly informed decisions about which tools are best suited for their personal food decisions.

A general area for future research is establishing a unified knowledge domain for nutritional health education. To my knowledge there is, as yet, no knowledge domain which is solely concerned with the public understanding of nutritional health. Such a knowledge domain could integrate different nutritional health related knowledges and provide the foundations for philosophical and paradigmatic change in nutritional health theory and policy. Other areas for future research pertain to increasing knowledge concerning the various aspects of the healthy food selection decision process. Although there were limitations to the research design and application, the findings of the study provided answers to the research questions and furthered my understanding of the meanings of health, health risk and food in relation to healthy food selection at the grocery store.
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doi: 10.1177/1359105304044037


doi:10.1016/0277-9536(95)00313-4


Appendices

Appendix A: Interview Protocol for One-On-One Interviews

Context

- Thank-you for participating in study
- Re-introduce study (purpose and what I hope to learn)
- Discuss confidentiality
- Ask for permission to record
- Ask if participant has any questions or concerns
- Request participant’s signed consent form if not already received
- Provide a copy of the consent form to the participant if not already provided
- (Have copy of ethics approval)

Date of interview: __________________________

Time of interview: (start) __________________________ (end)

Location of interview: __________________________

Interview Questions

1. I’d like to begin by verifying some general practical considerations concerning your grocery shopping today.
   - Where did you purchase your groceries today? Is this your usual store?
   - How long do you usually spend selecting your groceries? Was this the same today? If not was there any reason for the shorter/longer time you spent in the store?
   - Do you usually select food for only yourself or do you select food for other household members?
   - Do you make a shopping list? If so, what do you take into consideration when you make the list? What goes through your mind?

2. I want to learn about how think about health, health risk and food. Can you tell me about:
   - What health means to you?
   - What does health risk mean to you?
   - When you think about food what does food mean to you?

3. Why and how important is it to you to select foods which have been identified as being beneficial to health?
4. Let's take a look at your food selections that you have bought today. How do you use your knowledge about health, health risk and food when you purchased this item? How does it benefit your health? (I will select several items one-by-one from the items purchased for a discussion of each item.)

5. How have you formed your opinions about these food items and your eating habits in general?

6. Where do you get your information about health, health risks and the nutritional content of food?

7. Are there any particular food items that you avoid? If yes, why?

8. Our conversation has been mostly about your food selection in relation to your health, health risks and the nutritional content of foods. What other factors do you take into consideration when you select foods at the grocery store? How do you accommodate these factors in your food selection decisions?

9. Finally, is there anything you would like to comment on about how health, health risk and nutrition information is presented by the various sources you use? How could your food selection for health benefits be made easier? Is there any nutrition and health related question you would like to ask?

10. Thank you very much for participating in this one-on-one interview. At this time, I would like to confirm that you remain willing to participate in a focus group interview to further the discussion of how women think about health, health risk and food in their point-of-purchase food selections. You have already signed the consent form, but I will contact you on (date/time a minimum of 48 hours later) to receive your feedback on this interview and you can reconfirm your participation at that time once you have reviewed the consent form. I will send you the transcript of this interview once I have transcribed the voice recording and my notes.
Appendix B: Interview Protocol for Focus Group Interviews

Context

- Thank-you for participating in study
- Re-introduce study (purpose and what I hope to learn)
- Discuss confidentiality
- Permission to record will have been previously been received
- Ask if participants have any questions or concerns
- Review protocol for the focus group interview
  - I will pose a question and then facilitate the discussion
  - To facilitate equal opportunity for each participant to speak I will ask the participants to be courteous and respectful and to be alert to others who wish to speak
  - If necessary a participant may raise her hand to indicate that she has something to add to the discussion
  - I may intercede in the discussion to 1) allow equal opportunity to speak 2) if the discussion becomes unrelated to the purpose of the study
- Participants' signed consent form will have been received for the one-on-one interview
- A copy of the consent form will have already been provided to the participant
- (Have copy of ethics approval)

Date of interview: __________________________

Time of interview: (start) __________________________ (end)

Location of interview: __________________________

Interview Questions

1. You will recall from your one-on-one interview with me that we discussed how you use your knowledge about health, health risk and food when you select foods in the grocery store. Please can each of you provide the group with a short general summary of the strategy you have developed for selecting foods at the grocery store that will benefit your health?

2. Information about health, health risks and the nutritional content of food can be gathered from a variety of sources. When you hear about a new food product how do you think about that food product (for example, yogurt with added probiotics) in relation to its nutritional content and how it may benefit your health?

   - How do you use your knowledge to inform your decision as to whether to select that food product?
• What are the most important factors that you look for in foods that will benefit your health?

• How do you assess the quality of the information that you use?

3. Let's put your strategies into practice. I would like you to imagine that this food item (I will provide a food item) is new to you. Please talk out loud your strategy for selecting or not selecting this food item. (I will ask one participant to start this process and then ask other participants to add their reflections on this process).

4. The media often reports foods as being "good, bad, healthy, unhealthy, can reduce the risk of..., make you healthier", what do these descriptions of food mean to you?

5. When a food item that is part of your regular food selection and which has previously been thought of as nutritious is pronounced "bad" what is your reaction in terms of how you think about this particular food in relation to your health, health risk and food choice? Let's first take a look at a single food item such as pasta and then food groups such as fats and carbohydrates.

6. At your one-on-one interviews I asked what other factors other than health, health risks and the nutritional content of foods, you take into consideration when you select foods at the grocery store. I would like to continue to explore how you deal with factors which are opposed to your ideas around health, health risk and your food selection. For example, if your partner does not have the same concerns as you do around health, health risk and food selection how do you select foods that accommodate both of your preferences?

7. Are there any questions relating to nutrition and health that you would like to ask? How can the delivery of nutrition and health related information be improved so that your point-of-purchase food selections are made easier?

8. Thank you very much for participating in this focus group interview. Please accept this small gift as a token of my appreciation of your participation. I will contact you all to receive your feedback on this focus group interview. We can set up a time for your personal nutritional consultation at that time. I will send you the transcript of this interview once I have transcribed the voice recording and my notes.
Appendix C: Letter to Business Owner

The University of British Columbia

Department of Educational Studies
Mailing Address:
2125 Main Mall
Vancouver, BC, V6T 1Z4
Tel: 604-822-3897
Fax: 604-8223244
http://www.edst.educ.ubc.ca

May, 2010

Re: Research Project: "Women's Nutrition and Health Knowledge: From Knowing to Doing"

Dear...

My name is Wendy Hartford and I am a MA graduate student at the University of British Columbia in the Department of Educational studies. My research interest is women, health, fitness and nutrition. My research project is focused on how women think about their food selection in relation to their health. I would like to recruit 20 women, between the ages of 20 and 40 who are engaged in regular exercise to participate in one-on-one interviews and focus group interviews for the purpose of exploring how women think about their food selection while grocery shopping. This study will help identify how women use their knowledge of health, health risk and food to develop personal food decision strategies which guide their point-of-purchase food selections.

I would be grateful if you would allow me to use your facility "She's Fit! White Rock" to recruit participants for one-on-one interviews and focus group interviews to facilitate my research. This would require that I would be able to place one or two posters and some brochures in your facility which summarise my proposed study and which provide my contact details. A copy of the poster and the brochure is provided for your reference. Women who are interested in the study are requested to contact me. Other than providing space for the poster(s) and brochures there is no other requirement on the part of yourself and staff.
The findings from my research will, I believe, be of use to anyone who is involved with helping women improve their health through exercise and nutrition. Once my project is completed I would be pleased to present a summary of my findings to interested parties connected with your business.

If you are agreeable to my request or would like more information I would be grateful if you would respond to this letter either by phone or e-mail. I have also attached two consent forms which, if you are agreeable to my request require your signature. One is for your records and the other can be returned to me in the envelope provided. Thank you for your time, I look forward to hearing from you.

Sincerely,

Wendy Hartford (BSc., CSEP CPT)
Appendix D: Consent Form for Business Owner

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Educational Studies
Mailing address:
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: 604-822-3897
Fax: 604-822-4244
http://www.edst.educ.ubc.ca

Women's Nutrition and Health Knowledge:
From Knowing to Doing
Consent Form for Business Owner/Manager

Principal Investigator:
Dr. Lesley Andres, Professor, Department of Educational Studies, UBC. PH: 604- 822-8943: e-mail: lesley.andres@ubc.ca

Co-investigator:
Wendy Hartford, MA Student, Department of Educational Studies, UBC.

Background:
There is an abundance of information about health, health risks and the nutritional content of food available to us as well as a variety of foods to choose from. However, people often have difficulty in putting the knowledge that they have about health and nutrition into practice. To simplify the very complex process of health related food decisions we develop food decision strategies. The food selection process may be further complicated for many women between the ages of 20-40 years by a variety of factors such as relationships, motherhood and employment, but there is limited understanding as to how women use their strategies when they purchase food in the grocery store.

Purpose:
The purpose of this research is to investigate how women think about their health, health risks and food in their point-of-purchase food selections at the grocery store. Given that there is increasing evidence which suggests we can decrease our health risks by selecting particular foods there is a need to find out how we draw on our health and nutrition knowledge when we purchase foods. Women between the ages of 20-40 years of age may experience increased health risks associated with various life stages which can be influenced by nutritional practices. We are interested in the factors that contribute to their eating strategies which guide their health related food choices, especially at the point-of-purchase of food.

Why have you been invited to take part?
We are recruiting women between the ages of 20 and 40 years who are health conscious in that they exercise and select foods to optimise their health. The women will have access to a variety of nutritional and health information and the cost of food will not dominate their food choices. We believe that your business may provide a source of participants that meet the criteria.
Study Procedures:
The recruiting process will involve placing, at your discretion, between 1 to 3 letter sized posters in your facility along with brochures which describe the research project in more detail and which provide the co-investigator's (Wendy Hartford) contact information. Women who are interested in participating are requested to contact Wendy Hartford.

Potential Risk
There are no known risks associated with your participation in this study.

Potential Benefits:
The findings from this research may increase our understanding of how women make their "point-of-purchase" food selections. Learning which factors make women's food choices easier may be useful to people associated with your business who are interested in helping women make food selections that are beneficial to their health.

Potential Benefits to Society:
The findings from this research are expected to add to the existing knowledge concerning food choice and have the potential to be applied to health and nutrition education efforts to help women develop ways to their health and nutrition knowledge in their food selection process.

Report on Findings:
This research is part of a thesis for a Master of Arts graduate degree. The thesis will be a public document stored in the UBC library. A summary of the findings of the study will be provided to you either by mail or e-mail.

Confidentiality:
Your identity and the identity of your business will be kept strictly confidential. Neither you nor your business will be identified by name in any reports that arise from the completed study. The completed consent form will be kept separately from data collected in order to protect your identity. All data will be stored in a secure manner in compliance with UBC’s Behavioural Research Ethics Board policies and, as per UBC policy, the files will be kept for five years. The only other people who may have access to the data will be my committee members, Dr. Andres, Dr. Butterwick and Dr. Vertinsky who are subject to the same terms and conditions of confidentiality outlined in this document. You will be assigned a code number for identification purposes for the data transcription. All documents will be secured in locked filling cabinets. Data that is transcribed will be stored as a secured computer file.

Remuneration/Compensation:
In addition to the summary of the findings from the study the co-investigator, Wendy Hartford, will make a one hour presentation of the findings, approximate value $50, to any interested persons associated with your business if requested.

Contact for information about the study:
If you require further information concerning the study, recruitment methods, or the consent form please contact Lesley Andres: PH: 604- 822-8943: e-mail: lesley.andres@ubc.ca or Wendy Hartford PH:

Contact for concerns about the rights of research subjects:
If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598 or if long distance e-mail to RSIL@ors.ubc.ca or toll free 1-877-822-8598.

Consent:
Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time. Your signature below indicates that you have received a copy of this consent form for your own records.
Your signature indicates that you consent to participate in this study.

____________________________________________________  Subject Signature

____________________________________________________  Date
Appendix E: Recruitment Poster

Women's Nutrition and Health Knowledge
From Knowing to Doing

An Invitation to Participate in a Research Project for Women about ...............

• understanding how women put their health and nutrition knowledge into practice when shopping for food
• exploring how women make sense of health and nutrition information which guides their food choices for health

If you are a woman who is between 20 and 40 years old and
• you exercise regularly
• choose food with your health in mind
• have access to variety of health and nutrition information
• your food selection is not primarily cost driven
• and you are willing to be interviewed

I would be delighted if you would contact me, Wendy Hartford, at:

For more information please take a brochure.

The University of British Columbia
Department of Educational Studies
Mailing Address:
2125 Main Mall
Vancouver, BC, V6T 1Z4
Tel: 604-822-3897
Fax: 604-8223244
http://www.edst.educ.ubc.ca
Appendix F: Recruitment Brochure

What will you be asked to do?
This study will take 3 hours of your time. You will be asked to participate in a one-on-one interview with me immediately after you have completed your grocery shopping to discuss how you use your knowledge about health, health risk and food when you select your food items. You will also be asked to join in a focus group interview with 5-7 other women who have responded to this invitation to further explore how you put together your health and nutrition knowledge to simplify your food choices at the grocery store.

About me..............
I am Wendy Hartford and currently I am a Masters graduate student in the Department of Educational Studies at the University of British Columbia where I am researching how women apply their knowledge and nutrition to every day decisions about food. I have a BSc. in Food, Nutrition and Health and have been professionally involved with health, fitness and nutrition for women for more than twenty years, eighteen of them here in the South Surrey area. If you would like to accept this invitation I would be delighted if you would contact me by phone or e-mail.

My contact information is:
Wendy Hartford BSc.

Women’s Nutrition and Health Knowledge From Knowing to Doing

An Invitation to Participate in a Woman Centered Research Project

The University of British Columbia
Department of Educational Studies
Mailing Address:
2125 Main Mall
Vancouver, BC, V6T 1Z4
Tel: 604-822-3897
Fax: 604-8223244
http://www.edst.educ.ubc.ca
You are invited......................

If you are a woman between 20-40 years of age, regularly exercise and choose food with your health in mind, have access to variety of health and nutrition information, and your food selection is not primarily cost driven you are invited to share your knowledge and experience of making decisions when shopping for food.

Why?
Because as a women who is health conscious your knowledge is of value to other women like you. There is such a wide range of information from so many sources magazines, TV, news headlines, internet, health and nutrition gurus, and family and friends that it is often very difficult to know which foods are healthy for us. What do we make of health risk warnings and adverts which suggest that by eating a particular product we can improve our health? Too often health and nutrition information may add to our confusion instead of making our food choices easier. Sharing your knowledge with the women's research community will ultimately benefit women who experience difficulties making healthy food selections.

How will you benefit?
Sharing your knowledge about food selections with other women like yourself may enhance your existing knowledge. Everyone will be able to ask and discuss questions about health and nutrition that are important to them.

How will your knowledge help?

Health and nutrition educators need to understand how women put their knowledge about health and nutrition into practice when shopping for food. You will also be able to put forward your ideas and suggestions as to how health policy makers and educators can make your grocery shopping food choices easier.

My immediate aim is to provide insight into those factors which contribute to women making food choices for optimising their health. My long term aim is to assist nutrition and health educators to use this information to help other women with their health related food choices.
Appendix G: Newspaper Advertisement 1.

Women’s Nutrition & Health Knowledge
- From Knowing to Doing

An Invitation to Participate in a Research Project for Women about
- understanding how women put their health and nutrition knowledge into practice when shopping for food
- exploring how women make sense of health and nutrition information which guides their food choices for health

If you are a woman who is between 20 and 40 years old and...
- you exercise regularly
- choose food with your health in mind
- have access to variety of health and nutrition information
- your food selection is not primarily cost driven
- and you are willing to be interviewed

The University of British Columbia
Dept. of Educational Studies
Mailing Address:
2125 Main Mall,
Vancouver, BC V6T 1Z4
Tel: 604-822-3897
Fax: 604-822-3244
www.edst.ubc.ca
Appendix H: Inclusion Questionnaire

Women's Nutrition and Health knowledge: From Knowing to doing

First contact with respondent to confirm inclusion criteria:

1. **Name** (first name)

2. **Date of birth:**

3. Over the course of a week approximately how much time do you spend exercising at the gym and/or in other physical activities outside of the gym? (Please identify activity e.g. cardio, weights, walking, playing with children, you do not need to specify the exact amount of time spent on each activity).

4. **Do you consciously select foods to eat that will benefit your health?**

5. **Are you primarily responsible for your grocery store food selections?**

6. **Contact details.** (at least one contact number to facilitate arrangements for the one-on-one interview and follow up)
   - Phone #: ___________________________ e-mail ___________________________

7. Participants will be provided with a copy of the transcripts of their own interview, focus group interview and a summary of the findings. Please indicate how you would like to receive the transcripts and summary.
   - e-mail
   - postal delivery
   - in person
   - do not wish to receive (please provide address)

8. Are you willing to participate in a one-on-one interview after you have completed your grocery shopping with me to talk about how your think about your food selections in relation to your health?

9. Are you willing to participate in a focus group interview with 5-7 other women who have completed one-on-one interviews to further the discussion about how you think about your food selections in relation to your health?
Appendix I: Consent Form for Participants

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Educational Studies
Mailing address:
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: 604-822-3897
Fax: 604-822-4244
http://www.edst.educ.ubc.ca

Women's Nutrition and Health Knowledge
From Knowing to Doing
Consent Form for study participant

Principal Investigator:
Dr. Lesley Andres, Professor, Department of Educational Studies, UBC. PH: 604-822-8943: e-mail: lesley.andres@ubc.ca

Co-investigator:
Wendy Hartford, MA student, Department of Educational Studies, UBC. PH:

Background:
There is an abundance of information about health, health risks and the nutritional content of food available to us as well as a variety of foods to choose from. However, people often have difficulty in putting the knowledge that they have about health and nutrition into practice. To simplify the very complex process of health related food decisions we develop food decision strategies. The food selection process may be further complicated for many women between the ages of 20-40 years by a variety of factors such as relationships, motherhood and employment, but there is limited understanding as to how women use their knowledge and strategies when they purchase food in the grocery store.

Purpose:
The purpose of this research is to investigate how women think about their health, health risks and food in their point-of-purchase food selections at the grocery store. Given that there is increasing evidence which suggests we can decrease our health risks by selecting particular foods there is a need to find out how we draw on our health and nutrition knowledge when we purchase foods. Women between the ages of 20-40 years of age may experience increased health risks associated with various life stages which can be influenced by nutritional practices. We are interested in the factors that contribute to your eating strategies which guide your health related food choices, especially at the point-of-purchase of food.

Why have you been invited to take part?
You have been invited to take part in this research study because you are between the ages of 20-40 years, are health conscious in that you exercise and select foods which will benefit your health, you have access to a variety of health and nutrition information sources, and the cost of

Study Procedures:
You will be asked to take part in one (1) one-on-one interview and one (1) focus group interview. The one-on-one interview will take one hour and be conducted after you have
completed your grocery shopping either at your home or at a location of your choice. You will be asked about how your knowledge of health, health risks and food contributed to the selection of the food items you have recently purchased in the grocery store. You will also be asked about other factors which influence your food selection, such as work and relationships. With your permission the interview will be audio-taped to supplement the hand written notes taken by the co-investigator and to help with the data analysis process. If you consent to the one-on-one interview, but do not wish to have the one-on-one interview audio-taped your request will be accommodated. We will follow up the interview either by phone or e-mail to collect your feedback on your experience of the one-on-one interview. This should take no longer than 15 minutes.

The focus group interview will be conducted in the community room at 1630-154 St. Surrey, British Columbia and will take two hours. You will be part of a focus group consisting of 6-8 participants and the interview will explore how you have variously developed your individual health related strategies for food selection which guide your point-of-purchase food choices. The focus group interview will be audio-taped to accurately capture as much of the discussion as possible to supplement the hand written notes taken by the co-investigator and to help with the data analysis process. We will follow up the interview either by phone or e-mail to collect your feedback on your experience of the one-on-one interview. This should take no longer than 15 minutes.

**Potential Risks:**
The nature of the study requires that the questions discussed relate to personal beliefs and values about health and food choices and you may feel some discomfort when talking about your beliefs and values which underpin your food selection. Ideas and beliefs expressed by other participants during the focus group interview may challenge you emotionally and psychologically. The investigator will endeavour to maintain an equitable and non-threatening environment for the discussion. If you decide during either the one-on-one interview or the focus group interview that you do not wish to continue in the study, or at a later date have your comments withdrawn from the data your request will be accommodated. You will not forfeit the remuneration or the opportunity for feedback on the interview process.

**Potential Benefits:**
The benefits of participating in the study include having the opportunity to discuss your experiences and understanding of your food selection process. This will allow you to reflect on your food selection strategy which may be useful to you. The focus group interview can provide you with an opportunity to share your health and nutrition knowledge with other women. Your input can inform other participants and you may learn something new and helpful from their input which may enhance your eating strategy. The interview is also an opportunity for you to express your likes and dislikes concerning the presentation of health and nutrition information and advice. You will be able to make suggestions as to how the presentation of health and nutrition information can be improved to make your food choices easier, and how other women can develop eating plan strategies which can benefit their health.

**Potential Benefits to Society:**
Your knowledge, along with the knowledge of the other participants, will add to the existing knowledge on this topic and help health and nutrition educators understand how women make daily decisions about health and nutrition. This information can then be provided to women who find it difficult to put their nutrition and health knowledge into practice.

**Report on Findings:**
This research is part of a thesis for a Master of Arts graduate degree. The thesis will be a public document stored in the UBC library. A summary of the findings of the study can be provided to you if you wish either by mail or e-mail, or we can arrange to hand it to you personally.
Confidentiality:
Your identity will be kept strictly confidential in the study documentation and records. However, only limited confidentiality can be offered in the focus group interviews as we cannot control what the other participants do with the information discussed. We encourage all participants to refrain from disclosing the contents of the discussion outside of the focus group. The completed consent form will be kept separately from data collected in order to protect your identity. All data will be stored in a secure manner in compliance with UBC’s Behavioural Research Ethics Board policies and, as per UBC policy, the files will be kept for five years. The only other people who may have access to the individual data will be my research committee members, Dr. Andres, Dr. Butterwick and Dr. Vertinsky who are subject to the same terms and conditions of confidentiality outlined in this document. You will be assigned a pseudonym and a code number for identification purposes for the data transcription. All documents will be secured in locked filing cabinets. Data that is transcribed will be stored as a secured computer file.

Remuneration/Compensation:
It is requested that all participants will participate in one (1) one-on-one interview and one (1) focus group interview and the $25 nutrition and health related gift and free nutritional consultation valued at $50 are intended to reflect our appreciation of your participation as recorded here. However, the remuneration is not dependent on the completion of the study requirements. If you terminate your participation in the study at any time prior to your completion of the one-on-one interview or focus group interview you will not forfeit the remuneration. Refreshments will be provided at the focus group interview.

Contact for information about the study:
If you require further information concerning the one-on-one interview, the consent form and/or the questionnaire please contact Lesley Andres: PH: 604- 822-8943: e-mail: lesley.andres@ubc.ca or Wendy Hartford PH:

Contact for concerns about the rights of research subjects:
If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598 or if long distance e-mail to RSIL@ors.ubc.ca or toll free 1-877-822-8598.

Consent:
Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without jeopardy to your remuneration. Your data may be withdrawn at any time prior to the completion of the analysis.

Please select from the statements below the ones that indicate how you would like to participate in this study.

Your signature below indicates that you have received a copy of this consent form for your own records and that you consent to participate in this study and to have your one-on-one interview audio-taped.

___________________________________________________Name (Block Letters)

Subject Signature Date
Your signature below indicates that you have received a copy of this consent form for your own records and that you consent to participate in this study but do not want to have your one-on-one interview audio-taped.

__________________________________________________Name (Block Letters)

Subject Signature Date

Your signature below indicates that you have received a copy of this consent form for your own records and your signature indicates that you consent to participate in the study and to the audio-tapping of the focus group interview.

__________________________________________________Name (Block Letters)

Subject Signature Date
Appendix J: "Why Did You Buy This Item?"

Each woman's response to the first food item I selected from her "basket".

**Jodi:** Pork, it tastes good, it's a lean meat, a lean red meat. I really enjoy the methods in which you can cook it...on sale.

**Erica:** The coleslaw...my kids love it so I buy it more for them it's a quick easy salad and they eat bowls and bowls of it so they are getting lots of raw veggies.

**Vicky:** I have turkey instead of beef from Save-On...lower fat content. I also have tortilla wraps... I'm trying to stay away from bread so I use wraps...90 calorie wraps I feel more satisfied when I have a tortilla wrap when I can fill it up with all sorts of things, whereas a piece of bread I automatically want peanut butter or a spread, mayonnaise.

**Lillian:** Noodles, I do buy some junk food that is my daughter's favourite thing for lunch, that is the only thing I compromise because she won't eat sandwich and sometimes she wants a hot lunch.

**Katie:** Regular items, yes, fruits and vegetables and sandwich items.

**Caitlin:** Campbell's sauce, my niece from Ontario is down for the month and they didn't want plain chicken anymore so I dropped in at Costco and got this cream of mushroom sauce for the chicken and it was a huge hit. Everybody loved it. My husband loved it. He wants it cooked like that and it's fat laden and a ton of stuff I would not eat on a regular basis.

**Coleen:** Chipmunk bread, one of the things that really sold me on Thrifty's was their bread, they have really nice bread. This bread is...the pieces are quite large. It's full of seeds at the top. It's soft. I like the fact that they make it on site...sure there's no difference in the ingredients but somehow it has the perception of being better because it's made there rather than being shipped from goodness knows where and I know that H (daughter) is eating all those nuts and oils.
Taylor: Avocado, I like it, it's a good fat, but I like it.

Cassie: Quinoa, that's another good source of protein for me, pitted dates are a good source of carbohydrate.

Bernice: Save-On muffins...crunchy top prefer Save-On's. I guess it's a bit of splurge, they're baked goods so they can only be so healthy with all the flour and sugar.

Stephanie: Lentils, I like the taste...I like the taste. I like lentils in my salad; to me they give taste to a leafy salad. I tend towards canned ones just because I'm busy, so I often don't have time. There's a little bit of sodium there which I do need because I don't add sodium to my food at all. But mostly I choose them for their flavour.

Julie: We've switched to the steel cut oats that has been preferred over rolled oats because of the texture component, but also for the nutritional value...steel cut have less friction in their process so the amino acids, (are there amino acids in oats?), they're not so tainted...I'm not really sure I'm just guessing.

Natalie: Apples, Gala preference, gluten-free, lower wheat, egg whites...scrambled egg. I heard high cholesterol in eggs and I hear generally that people eating eggs, healthy people eating eggs say egg whites, but the whole egg can't be totally bad for you so I put that in.

Maggie: Probiotic yogurt, my daughter say Best Western she said it taste better than the other one. A little bit cost too, not too expensive one.

Emily: Goat's milk, my son had parasites we think. We lived in SE Asia. He was having problems with his digestion. We went to a naturopath and we had to really restrict his diet and change it and we've sorted him out we think though we avoid cow's milk for him...goat's milk because I think it's healthier anyway.
Danielle: Mini-wheats, that's W (husband) he's got a Mini-Wheat addiction. Eggs M (daughter) will often take egg salad sandwiches for lunch. Breakfast and lunch we'll have soft boiled eggs. Baking...we go through a lot of eggs, omelettes. For me I think they are a quick all in one...they have protein in them.