

**A survey of the information, support, and programming needs,
related to healthy eating, physical activity and healthy body weight,
of women attending high-risk breast cancer clinics at
Sunnybrook and Women's College Health Sciences Centre**

**A collaborative project by:
the
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Toronto Cancer Prevention Coalition
and
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EXECUTIVE SUMMARY

Rising rates of cancer in Canada and an increase in the prevalence of risk factors have established prevention and early detection as health care priorities. Health care professionals and patients at the high-risk breast cancer clinics at the Toronto Sunnybrook Regional Cancer Centre (TSRCC) and the Henrietta Banting Breast Centre (HBBC) at the Sunnybrook and Women's College Health Sciences Centre have frequently and informally expressed the need for enhanced services in relation to healthy eating, physical activity and healthy body weight. The clinics serve women from a large, heavily populated catchment area that includes Toronto and extends south from Gravenhurst, east from Oakville and west from Belleville – an area that includes the entire Central East Cancer Care Ontario Region. The women attending these clinics are typically highly motivated to identify aspects of their lives that they can assert some control over in order to reduce their risk of breast cancer.

A collaborative three-phase project was developed by the Dietary Risk Factors Working Group (DRFWG), the breast cancer risk assessment clinics at Sunnybrook and Women's College Health Sciences Centre and the School of Nutrition at Ryerson University in order to address the needs of this target population. To develop effective programs and supports, it is essential to first ascertain the target group's interest and motivation as well as their perceived support, information and resource, and programming and service needs related to the modifiable risk factors. The purpose of this study was to develop, deliver and analyze a needs assessment survey of the target population. The results of the needs assessment (phase 1) will help determine the focus of a capacity-building program designed to meet the information, support, and programming needs of this group of women in relation to healthy eating, physical activity and healthy body weight (phase 2). Subsequent programs and services will be evaluated and revised during the third phase of the project.

The survey included both closed- and open-ended questions designed to provide participants with opportunities to provide as much detail in their responses as they wished. The survey was reviewed, revised and pre-tested by qualified health professionals. All women over 18 years of age who attended the TSRCC or HBBC breast cancer risk assessment clinics during the data collection period (February 1 to April 5, 2005) on data collection days were considered eligible to participate in this study. Participants were recruited based on a convenience sampling method. Results were analyzed using descriptive tests (frequencies and chi square) and statistical significance was noted when $p < 0.05$.

Two hundred and fifty-seven ($N = 257$) women participated in the survey, representing 52.8% of the women who attended the clinics during the data collection period. The majority of respondents were 40 to 49 years old, English speaking, married or in a couple relationship, had lived in Canada their whole life and resided in urban communities.

Three in four women indicated that they were most interested in learning more about the research that has looked at the connection between food components and decreased breast cancer risk. Nearly two-thirds of respondents were also very interested in learning more about antioxidants. Of the 167 women who would like to know more about antioxidants, 13.2% only want to know about antioxidants, where

as 86.8% were also interested in learning more about the research related to nutrition and breast cancer risk ($p = 0.000$).

Almost half of the women were interested in learning how to lose weight and keep it off and knowing what a healthy body weight is for them. Of the 135 women who would like to know which activities are best for increasing their overall fitness level, 37.8% only want information about which types of activities are best, whereas 62.2% would also like to know more about the research that has looked at whether physical activity may decrease breast cancer risk ($p = 0.000$). These findings regarding the women's informational needs support that it is important to provide evidence-based rationale in order to influence health risk behaviour.

More than two in five participants indicated a need for a list of reliable Internet websites or the creation of a reliable Internet website that provides information on eating well, active living and healthy body weight in relation to breast cancer risk. The same proportion of women also preferred to receive information in the form of a brochure, fact sheet or a mailed newsletter.

More than one in three women (35.8%) feel they would most benefit from individual counselling with a dietitian at their high-risk breast cancer clinic. Alternatively, 35.4% indicated they would most benefit by attending programs or services within their community once they are aware of what is available.

Approximately one in four women were also interested in attending workshops related to healthy body weight or healthy grocery shopping as well as healthy cooking demonstrations offered at the TSRCC or HBBC clinics.

When it comes to increasing their level of physical activity, nearly one in four women preferred to know about the active living programs in their community. However, one in five women would like to attend active living workshops at their high-risk breast cancer clinic. The survey identified that two in five women want to learn ways to fit activity into their busy schedules. Lack of time was the most frequently cited barrier to active living reported by nearly half of the women.

This study indicates that the needs of women at high-risk for breast cancer cannot be met with one program or service alone. The most effective programs appear to be those that provide education about breast cancer risks directly to women. There is a need for the promotion of existing or creation of new Internet websites as a reliable and accurate source of healthy eating, active living and healthy body weight information in relation to breast cancer risk. The need for *e-health*, defined as technology-based (e.g. computers and other digital technologies) health information and promotion efforts is a fairly new but fast growing phenomenon that may offer many opportunities for providing information and support to the target population.

Care and creativity must be employed when creating future programs and services in order to reach as many women at high-risk for breast cancer. Supportive information, programs and services are instrumental in empowering people develop practical skills, knowledge, self-efficacy and habits that will in turn help influence their health risk behaviour.

INTRODUCTION

Background

Breast cancer is the most frequently diagnosed cancer among Canadian women, with 1 in 9 women being at risk during her lifetime (Health Canada, 2004). In 2005, an estimated 21,600 Canadian women will be diagnosed with the disease, and of these, 5,300 will die (Canadian Breast Cancer Foundation, 2005). In Canada, breast cancer diagnoses are highest in Ontario, where 8000 women are diagnosed and 2,000 die annually (Chiarelli, Theis, Holowaty, Moravan, & Nishri, 2000). These statistics drive current research in the field and underscore the importance of innovative efforts relating to the design and implementation of successful cancer prevention strategies.

Breast cancer risk increases with age, and as Canada's population of older adults grows, efforts are needed to accommodate and understand the needs of these changing demographics. In 2002, 13% of Canadians were aged 65 and older, and over the past 10 years, the population of people aged 45-64 increased to almost 7.3 million (Statistics Canada, 2002). The size of this group is expected to increase 30% in the next 10 years, to about 9.5 million, with women outnumbering men in every province (Statistics Canada, 2002). An ageing population that is proportionately high in women is considered the strongest predictor of increasing breast cancer rates and has encouraged the implementation of preventative efforts (Canadian Cancer Society/Cancer Care Ontario, n.d.). In addition to advancing age and being female, other *non-modifiable* risk factors associated with increased risk for breast cancer include: familial history; genetics (e.g. BRCA-1 and BRCA-2 gene mutations); hormonal factors (e.g. early menarche, late menopause, nulliparity or having had a first baby after 30 years of age); a previous history of breast disorders; living in a developed country, and having dense breast tissue (Canadian Cancer Society, 2005; Health Canada, 2003).

Breast cancer has been associated with *modifiable risk factors*, including diet, level of physical activity, postmenopausal obesity, alcohol consumption and smoking (Hoffman-Goetz et al., 1998; Kaaks, 1996; Willett, 2001; Canadian Cancer Society, 2005; Health Canada, 2003). These factors are currently the subject of much research. Numerous physiological mechanisms are affected directly or indirectly by dietary patterns, with endogenous hormone levels playing a significant role in the development of breast cancer throughout different stages of the life cycle (Kaaks, 1996; Willett, 2001; Qin et al., 2004). Alcohol consumption appears to be correlated with increased risk of breast cancer (Willett, 2001; Zhang et al., 1999) as plasma oestradiol levels in postmenopausal women rise with consumption of two drinks per day (Willett, 2001). Research is also examining the roles that the types of fat consumed, energy balance, and distribution of adipose tissue may play in mediating breast cancer risk (Hoffman-Goetz et al., 1998; Willett, 2001). Each of these areas of interest encompasses further topics, such as the role of physical activity in modifying body composition and the effect of increased adipose tissue on hormone levels (Hoffman-Goetz et al, 1998). Breast cancer risk may also be affected by relationships between age, hormone levels, body weight and weight fluctuations (Hoffman-Goetz et al., 1998; Willett, 2001).

Presently, almost half of Canadians are classified as either overweight, with body mass index (BMI) values between 25.0 and 29.9, or as obese with BMI values of 30.0 or greater. Men are more likely than women to be obese but women are

most likely to be physically inactive (Statistics Canada, 2002). The 2000/01 Canadian Community Health Survey reported that the majority of Canadians are physically inactive and that inclination towards inactivity increases with age (Statistics Canada, 2002). These findings, in tandem with the increased prevalence of other modifiable risk factors, indicate that Canadian women could be well served by initiatives that promote physical activity, healthy eating and healthy body weights.

Rationale

Rising rates of cancer in Canada and an increase in the prevalence of both modifiable and non-modifiable risk factors have established prevention and early detection as health care priorities. The American Institute for Cancer Research (AICR) (1997) estimated that 33% to 50% of breast cancer might be prevented through healthy eating, physical activity and maintaining a healthy body weight. This focus, combined with a woman's lifetime relative risk for developing breast cancer, consequently generates a great amount of public interest, especially among those who believe they may be at high-risk. Unfortunately, overly simplified and/or conflicting study findings, as reported by the media can often create more confusion than clarity among women who are searching for ways to lower their risk by reducing their modifiable risk factors.

Women must be able to access, evaluate and make use of health information when making decisions about their health. Analysis of research on women's breast cancer risk perceptions reveals that risk is often misunderstood and that there is demand for accurate, non-threatening and accessible information (Alexander et al., 1996; Buxton et al., 2003; Hebert-Croteau et al., 1997; Warner et al., 2003). Research by Hebert-Croteau et al. (1997), Alexander et al. (1996) and Buxton et al. (2003) has confirmed that educational interventions can be successful in developing accurate risk perceptions among women who may be at increased breast cancer risk.

Women who attend the high-risk breast cancer clinics at the Toronto Sunnybrook Regional Cancer Centre (TSRCC) and the Henrietta Banting Breast Centre (HBBC) at Sunnybrook and Women's College Health Sciences Centre present with many questions relating to nutrition, weight loss dieting and physical activity. Initial meetings with staff at the TSRCC and HBBC clinics were held to discuss the perceived needs of women who attend these high-risk breast cancer assessment and follow-up clinics. In summary, the discussions revealed that the women who attend the clinics are typically highly motivated to identify aspects of their lives that they can assert some control over to reduce their risk of breast cancer. Many of these women have numerous questions about unproven nutritional products, claims, and strategies that purport, or are believed to be, associated with cancer risk reduction. For example, clinic physicians and dietitians are commonly asked to provide information concerning the various low carbohydrate diets that are currently popular as well as details concerning the consumption of various foods and nutrients, such as alcohol, caffeine, vitamin and mineral supplements, ground flax seed, dairy products, soy products, trans fats, omega-3 fatty acids and calcium. Currently, the clinics are not well resourced to respond to these specific nutrition questions and only the HBBC clinic has a dietitian present during the clinic hours for consultation with patients on an individual basis. Although a dietitian is not present

at the TSRCC clinic, women can be referred to the dietitian for individual nutrition counselling at a later date.

In response to the information, support, and programming needs in regards to healthy eating, physical activity, and healthy body weight that have been frequently and informally identified by women attending the TSRCC and HBBC high-risk breast screening clinics, a collaborative three-phase project was developed by the Dietary Risk Factors Working Group (DRFWG), the breast cancer risk assessment clinics at Sunnybrook and Women's College Health Sciences Centre and the School of Nutrition at Ryerson University.

A review of the literature revealed that there has been some focus on the informational and emotional support needs for women at high-risk of breast cancer (Stacey, DeGrasse, and Johnston, 2002). These investigators found that 86% of the 97 women attending the High-Risk Breast Assessment Clinic at the Ottawa Regional Women's Breast Health Centre wanted information about lifestyle options and almost half of the participants wanted to learn about sources of information and support. Nevertheless, this study did not delve into the specific information, support and programming needs regarding these three modifiable risk factors. The present study was designed to identify the needs, specifically related to healthy eating, physical activity, and healthy body weight, of women who may be at high-risk for breast cancer. To develop effective programs and supports, it is essential to first ascertain the target group's interest and motivation as well as their perceived support, information and resource, and programming and service needs related to modifiable risk factors.

Purpose

The purpose of this study was to develop, deliver and analyze a needs assessment survey of the target population. The results of the needs assessment (phase 1) will help determine the focus of a capacity-building program designed to meet the information, support, and programming needs of this group of women in relation to healthy eating, physical activity and healthy body weight (phase 2). Phase 3 of the project will involve an evaluation of the effectiveness of the programming initiative implemented during Phase 2, revision of the program in response to the evaluation findings, and an examination of the feasibility of expanding the program to include other relevant groups. This report will provide an overview of the methods; present results; and discuss the main results in relation to the generalizability of the findings; the implications for planning information and supports and implications for planning programs and services. Future programming and support considerations will also be discussed. This paper will lay the groundwork for future dissemination, such as a peer-reviewed publication, poster and presentations, and aid in the development of evidence-based initiatives and grant proposals to meet the informational and support needs, related to healthy eating, physical activity, and healthy body weight, of women who may be at high-risk for breast cancer.

METHODS

Development of the Tool

The development of this survey tool began with initial meetings with the staff at the TSRCC and HBBC clinics in order to discuss the perceived needs of women who attend these high-risk breast cancer assessment and follow-up clinics. Based on the information learned from this initial meeting, the survey was designed to examine participants' interest and motivation related to reducing their breast cancer risk and their perceived information, resource, support and programming needs related healthy eating, physical activity and healthy body weight. Participants' characteristics such as age, socio-economic status, and community of residence were also obtained.

Using principles described by Woodward & Chambers (1995) and Hewson et al., (1994), the survey included both closed- and open-ended questions designed to provide participants with opportunities to provide as much detail in their responses as they wished. The survey was reviewed, revised and pre-tested by qualified health professionals. The final survey consisted of forty questions and required about 15-20 minutes to complete. The Ryerson University Ethics Review Board and the Research Ethics Board at Sunnybrook and Women's College Health Sciences Centre approved the finalized survey.

Participants and Data Collection

The clinics serve women from a large, heavily populated catchment area that includes Toronto and extends south from Gravenhurst, east from Oakville and west from Belleville – an area that includes the entire Central East Cancer Care Ontario Region. Women are referred to these clinics by family physicians, based on the potential presence of risk factors such as family history of breast cancer, detection of a breast lump, breast pain or discharge, previous exposure to high dose radiation, fibrocystic condition, extreme breast density, atypical hyperplasia, or other conditions. Of the women referred to the clinics, some are diagnosed with breast cancer and are referred to oncology clinics for treatment. Some of the women are confirmed by clinic specialists to be at increased risk for breast cancer development and are regularly monitored through follow-up appointments at the clinics. In total, these clinics see approximately 52 new and 300 repeat patients each month. On any given day, about 20% of patients that clinic physicians see are new patients and the 80% of patients are follow-ups.

All women over 18 years of age who attended the breast cancer risk assessment clinics at Sunnybrook and Women's College Health Sciences Centre during the data collection period (February 1 to April 5, 2005) on data collection days were considered eligible to participate in this study. Eight research assistants (students from Ryerson University's School of Nutrition), who received training in survey administration and data collection from an experienced researcher, administered the surveys at the two clinic sites. A total of seven high-risk breast cancer clinics take place at TSRCC and HBBC per week.

Participants were recruited based on a convenience sampling method. Typically, women wait up to one hour for their appointments at the clinics. Research assistants approached potential participants after the patient had checked in with the

clinic reception staff. Participants were informed of the nature and intended use of the research via a Study Information Sheet and Consent Form. Participants provided written consent to participate by signing the Study Information Sheet and completed the survey either prior to, or after, their clinic appointment. Participants received a copy of the Study Information Sheet and Consent Form for their own records. Participants were also given the opportunity to submit their names and mailing addresses (separate from the survey) to receive copies of study findings by mail. Participation or non-participation in this survey had no impact on the treatment and services available to women who visited the clinics. Participants' privacy was protected while they completed the survey. Research assistants were available to answer any questions that participants had as they completed the survey. None of the participants requested an appropriate translator to be present to assist with survey completion. Only a couple of women who spoke English as a second language required assistance reading the survey and documenting their verbal responses. Surveys did not contain identifying information and confidentiality of completed surveys was strictly maintained. Completed consent forms and surveys are kept in a locked cabinet at Ryerson University. Access to patient charts was *not* required for this study.

Data Analysis

Research assistants entered their completed surveys into a database located at Ryerson University on a weekly basis. Substantially incomplete surveys (e.g. containing more than 50% missing data) were excluded, as recommended by Alreck and Settle (1995). Using the principles described in de Vaus (1996), surveys that contained the occasionally incomplete response were included in the sample and handled as a *no response* to detect whether the missing data introduced bias in the analysis. Variables responsible for a large number of missing values were excluded from the analysis (de Vaus, 1996). A project manager, experienced in conducting research, trained and supervised the team of eight research assistants prior to the data collection, entry and accuracy checking stages. The team of research assistants consulted the project manager if they were uncertain how to code a response. The project manager conducted data accuracy audits regularly and reviewed the final database for accuracy prior to commencing data analysis. Descriptive statistics were obtained using the Statistical Package for Social Sciences (SPSS), Version 11.0 (SPSS Inc., Chicago, IL). A *p* value < 0.05 was considered statistically significant.

RESULTS

Participant Characteristics

Two hundred and fifty-seven ($N = 257$) women attending the breast centre clinics at TS RCC and HBBC responded positively to the invitation to participate in a needs assessment survey between February 1 and April 5, 2005. This represents 52.8% of the women who attended the clinics while the survey was being conducted. Participant characteristics are presented in **Table 1**.

Motivation

Only one-fifth of the respondents reported that they have changed (19.5%), or somewhat changed (19.8%), their food choices or activity level since being referred to the high-risk breast cancer clinic (no change = 57.6% and no response = 3.1%). However, as shown in **Table 2**, more than half of the participants indicated that they would like to make changes in their eating habits, activity level and body weight to improve their health.

Perceived Barriers to Change

When asked to select the applicable statements that describe barriers to eating well, one quarter of respondents (25.7%) felt that the question did not apply to them. Another quarter of the participants (24.5%) felt that eating well takes too much planning and organization. Twenty-three percent need to know how to make their favourite foods healthier. Nearly one quarter of participants thought that eating well takes too much preparation time (22.6%) or that eating well is a challenge when eating out (22.6%).

Lack of time was overwhelmingly the most frequently selected barrier to active living: 44.7% of the entire sample. Twenty-three percent felt that the question did not apply to them. Several of the respondents ($n = 52$ or 20.2%) listed other challenges such as: lack of energy ($n = 11$), lack of time in general ($n = 10$), or lack of time due to family (primarily children) responsibilities and commitments ($n = 9$), lack of motivation ($n = 8$), work commitments ($n = 7$), and laziness ($n = 6$). An existing health condition or weather were other barriers mentioned ($n = 5$ for each). Procrastination or a lack of discipline were rarely mentioned ($n = 2$ for each). Few participants (15.2%) felt that it costs too much money to join fitness clubs or buy equipment.

Barriers to achieving and maintaining a healthy body weight were provided in an open-ended response. These qualitative data will be presented in a future report.

Strategies For Maintaining a Healthy Body Weight

Eating more vegetables and fruit was the most popular response (80.2%) when respondents were asked which strategies have been used to maintain a healthy body weight. Choosing lower fat foods more often was a strategy employed by 71.2% of the participants. More than two-thirds (66.9%) have increased their

activity level to maintain a healthy body weight. Other popular strategies selected were: choosing smaller portions (60.7%), eating more whole grain products (56.4%), and drinking 6 to 8 glasses of water a day (49.4%).

Topics of Interest in Regards to Modifiable Risk Factors

When it comes to eating well (that is, selecting and preparing healthy foods), women were most interested in knowing more about the following topics: reading food labels (51.0%), recipes for healthy eating (51.0%), which fats and oils to use in meal preparation (44.4%), eating well to achieve a healthy body weight (42.0%), healthy eating after menopause (41.6%), and low-fat foods (39.3%). Other topics of interest to approximately one-third of the sample were: nuts and seeds (including flax) (37.7%), appropriate serving sizes (35.0%), high fibre foods (34.2%), eating more vegetables and fruit (30.7%), and dietary fat (30.7%).

More than three-quarters of participants (76.7%) were particularly interested in learning more about the research that has looked at whether certain things found in foods may decrease breast cancer risk when presented with a list of topics about nutrition. Interest was also shown in learning more about: antioxidants (65.0%). Closer analysis revealed that these groups are significantly different. Of the 167 women who would like to know more about antioxidants, 13.2% only want to know about antioxidants, where as 86.8% were also interested in learning more about the research related to nutrition and breast cancer risk ($p = 0.000$). Vitamin and mineral requirements for women of their age (60.7%), and taking vitamin and mineral supplements (52.5%) were other highly ranked nutrition topics of interest. Almost half of the respondents want to know more about: fat, protein and carbohydrate intake (49.8%), phytochemicals (47.5%), and omega-3 fatty acids (45.5%).

More than half (52.5%) of the participants appear quite motivated to know which activities are best for increasing their overall fitness level. Half of the women (51.4%) would also like to know more about the research regarding the association between physical activity and breast cancer risk. Of the 135 women who would like to know which activities are best for increasing their overall fitness level, 37.8% only want information about which types of activities are best, where as 62.2% would also like to know more about the research that has looked at whether physical activity may decrease breast cancer risk ($p = 0.000$). Participants were also keen to know how much activity they need each day (48.2%) and the relationship between activity and stress reduction (41.6%). Two in five women (40.1%) would like to learn ways to fit activity into busy schedules.

Almost half of the women (48.6%) were interested in learning how to lose weight and keep it off and knowing what a healthy body weight is for them (47.9%) when provided a list of topics related to their body weight. They were also particularly interested in knowing more about: the factors that affect their body weight (43.2%), healthy ways to lose or gain weight (40.5%), and healthy body weights after menopause (35.0%).

Current Preferred Sources of Information

Table 3 lists the top six sources of information that participants turn to when they want to know more about eating well, active living, and body weight. It is

interesting to note that four of the six sources were commonly used sources for each category of interest, specifically: magazines; friends and family; booklets or brochures; and family doctor or medical specialist.

Respondents who wanted to know more about eating well, active living, or body weight most often turned to magazines such as: *Canadian Living* ($n = 36$; $n = 13$; $n = 9$, respectively) and *Chatelaine* ($n = 29$; $n = 20$; $n = 11$, respectively). The magazine *Shape* was another popular active living and body weight information source ($n = 11$ and $n = 8$, respectively). For information about eating well or active living, respondents listed newspapers such as *The Toronto Star* ($n = 33$ and $n = 27$, respectively) and *The Globe & Mail* ($n = 29$ and $n = 18$, respectively) most often. Cookbooks ($n = 10$) and books about popular eating plans (e.g. South Beach Diet, $n = 7$; Dr. Weil, $n = 5$, The Zone, $n = 3$) were the most frequently identified type of book, which was the fourth most popular choice of information regarding eating well (31.1%). Those participants interested in body weight visited a government site (e.g. Canada's Food Guide to Healthy Eating) or Weight Watchers, mentioned the Google search engine, or conducted a general search ($n = 3$ for each).

Perceived Credibility Rating of Various Information Sources

Table 4 illustrates the extent that participants believed they could rely on the accuracy of the information regarding eating well, active living, and healthy body weights found in magazines, newspapers, and Internet websites. It is interesting to note that magazines and newspapers – grouped together in the survey question – were ranked as “sometimes” reliable sources of information about eating well and body weight by the majority of respondents, even though magazines were their most popular source of information for these two topics.

Twice as many respondents rated Internet websites as “sometimes” or “never” accurate compared to those who believed this source to be accurate “most of the time”. There was a close tie between the number of women who felt that books were “mostly” (42.8%) or “always” (1.6%) an accurate source of information about eating well versus “sometimes” (43.2%) to “never” (0%) accurate. More than half of the respondents felt that fitness clubs or personal trainers were a reliable source of information about active living: “always” (5.8%) or “mostly” (47.1%) versus “sometimes” (26.5%) or “never” (1.2%). There was also no difference between the participants’ who rated staff at weight loss centres as accurate “always” (1.9%) or “most of the time” (29.6%) and those who felt this source of information about dieting and healthy body weight was “sometimes” (28.0%) or “never” (2.7%) accurate.

Preferred Sources of Information, Support and Programming Needs

In Part 2 of the survey, participants were presented with a range of programs and services and asked which they would be interested in accessing. They were also asked to select their preferred mode of learning about eating well, active living and healthy body weight from a list of sources of information. Multiple responses and “other” responses were possible in this section. **Table 5** lists the six most frequently identified needs in regards to information, support and programming focusing on healthy eating, active living and healthy body weight.

More than one in three women (35.8%) feel they would most benefit from individual counselling with a dietitian at their high-risk breast cancer clinic. Alternatively, 35.4% indicated they would most benefit by attending programs or services within their community once they are aware of what is available.

More than two in five participants indicated a need for a list of reliable Internet websites (44.7%) or the creation of a reliable Internet website that provides information on eating well, active living and healthy body weight in relation to breast cancer risk (42.0%). The same proportion of women also preferred to receive information in the form of a brochure or fact sheet (44.0%) or a mailed newsletter (40.9%).

When it comes to increasing their level of physical activity, 23.0% want to know about the active living programs in their community. However, 19.8% want to attend active living workshops at their high-risk breast cancer clinic.

Participants indicated that their preferred modes of learning about healthy eating, physical activity and healthy body weights are from a list of reliable Internet websites (44.7%), from a website dedicated to these topics (42.0%), or from a brochure or fact sheet (44.0%).

Most of the additional comments did not include additional ideas for programs, services or sources of information. Instead, women commented on some of the challenges they would have if they were to participate in a program or service offered at the high-risk breast screening clinics. Seven respondents mentioned that they lived out of town or too far away to attend any programs or services at the TSRCC or HBBC clinics. Excessive parking costs were a deterrent for one participant. Two respondents mentioned that time was a barrier to their participation in programs and services offered at the TSRCC or HBBC clinics.

Participants indicated that Saturdays were their most preferred day to attend a program offered at their high-risk breast cancer clinic (37.7%). Wednesdays and Thursdays were also popular days (24.1% and 25.3%, respectively). Evenings were the most preferred time of day to attend a program (37.8%). Almost one quarter (23.7%) of the respondents are not willing to pay any money to attend a cooking demonstration or purchase a video or DVD. However, 17.5% of the participants would be willing to pay \$20 or less and 17.1% would be willing to pay \$10 or less for this type of program or information source.

DISCUSSION

Generalizability of Needs Assessment

The majority of respondents were 40 to 49 years old, English speaking, married or in a couple relationship, have lived in Canada their whole life and reside in an urban community. The sample size represents 52.8% of the women who attended the high-risk breast cancer clinics at TSRCC and HBBC during the data collection period. No information was collected on those women attending the clinics who chose not to participate. Lack of time and interest were two of the possible barriers to survey participation. Feedback from the research assistants revealed that the majority of the women approached were interested and willing to participate, but that they did not feel that they could spare the time to complete the survey. Women who declined to respond to the survey typically attended the clinic on days when there was a very short waiting period to see the physicians.

The demographics of our sample are consistent with other studies involving this patient population. The physician-recruited women in an Ontario-based study was similar to our typical participant demographic (Warner et al., 2003). The typical profile of women being referred to high-risk breast cancer clinics is Canadian born, English-speaking, predominantly white, and generally highly educated (Warner et al., 2003).

By some estimates (Taylor-Powell, 1998), the sample size obtained is representative of the population within a 5% precision level (confidence interval of 95%). By other methods (Narins, 1999), the sample size obtained is generalizable within the 5% to 10% precision levels. Therefore, it is safe to say that the results of this needs assessment are representative of the population of women attending the high-risk breast cancer clinics at Sunnybrook and Women's College Health Sciences Centre.

It would also be useful to conduct an environmental scan or needs assessment to determine the cancer risk perceptions and needs of populations who may be underrepresented in terms of their participation in breast cancer clinics. Patterns of underutilization of screening services have been noted in older women, women with lower incomes, rural women and immigrant women (University Health Network Women's Health Program, 2000). These factors may also influence women's attendance at clinics, such as the high-risk breast cancer assessment clinics involved in this study.

Discussion

The results of this needs assessment demonstrate that women who may be at increased risk of breast cancer are highly motivated to lower their risk of breast cancer. Although 1 in 5 women attending the high-risk breast cancer clinics at Sunnybrook and Women's College Health Sciences Centre are likely to have already made lifestyle changes, approximately 3 in 5 are ready to make changes in their eating habits, activity level and body size to improve their health.

Many of the participants' perceived informational needs were related to the necessary knowledge and skills required for healthy eating, active living and obtaining or maintaining a healthy body weight (e.g. label reading, healthy recipes). These women indicated that they are somewhat sceptical of the information they

obtain from magazines or the Internet, even though the former was a popular source of information used by many respondents. Participants indicated that their preferred modes of learning about healthy eating, physical activity and healthy body weights are from a list of reliable Internet websites, from a website dedicated to these topics, or from a brochure or fact sheet. Participants also indicated that individual counselling with a clinic dietitian, community-based programs and services (if they knew what was available), healthy body weight and grocery shopping workshops, or healthy cooking demonstrations at their clinic were the preferred modes of supportive services or programming.

Implications for Information and Support Needs

Many of the survey participants (80.2%) reported that they increase their fruit and vegetable consumption as a strategy to maintain a healthy body weight. However, 30.7% want to know more about increasing their intake of vegetables and fruit. Based on a comprehensive examination of scientific evidence, adequate vegetable and fruit consumption has been reported as a probable factor in reducing breast cancer risk (Expert Panel, 1997). The most recent national nutrition monitoring research, the Canadian Community Health Survey, reported that women and men consumed vegetables and fruit an average of 4.2 and 4.9 times per day, respectively (Perez, 2002). Considering that the frequency of vegetable and fruit consumption typically correlates to amount consumed and that self-reported frequency of consumption may be vulnerable to over reporting due to the influence of social desirability and recall bias, it may be safe to conclude that the average vegetable and fruit consumption of Canadians is likely to be below the recommended minimum of five servings daily. Higher levels of vegetable and fruit intake have been positively associated with other health-related behaviours, such as physical activity, maintenance of healthy body weight, not smoking and low alcohol consumption (Perez, 2002). Providing information and support related to increasing fruit and vegetable consumption would be a worthwhile initiative in future program planning. This initiative would support one of the dietary targets contained in the Cancer 2020 comprehensive action plan, specifically that 90% of Ontarians will consume 5 or more servings of vegetables and fruit daily (Canadian Cancer Society, Cancer Care Ontario, n.d.).

Particular components of specific foods may be associated with breast cancer risk, with current research focusing on the role of micronutrients in the diet. Recent research has probed the roles of carotenoids (Terry et al., 2002; Zhang et al., 1999), milk consumption (Qin et al., 2004), folate, vitamins A, C, D, E, phytoestrogens, and fibre (Willett, 2001). Results of these studies often have been conflicting or inconclusive; indicating that more research is needed to better understand the mechanisms at work. Confusion generated from these conflicting or inconclusive reports may explain why so many women in this study reported wanting to learn more about these topics. The synergistic and poorly understood effects of food components make identification of causal relationships between specific nutrients and disease risk very difficult (Slattery, 2001). Nevertheless, women at high-risk of breast cancer would likely benefit from receiving reliable, practical and current nutrition information from a dietitian or information source (e.g. brochure, fact sheet, Internet website) created as a phase 2 initiative.

Findings linking women's desire to know more about the research linking physical activity to reduced breast cancer risk and their desire to know how best to achieve a physically active lifestyle support that it is important to provide evidence-based rationale in order to influence health risk behaviour. The need for reliable information sources other than information obtained from health or fitness professionals is paramount, as indicated in Table 4.

It is interesting to note that Internet websites were listed among the top three preferred sources of information needed, yet they were not highly ranked as current preferred sources of information for eating well (24.1%), active living (10.9%) and healthy body weight (13.6%) information. This is likely due to the finding that more than two in five women viewed this source as sometimes or never reliable for active living, and more than half of the participants felt that this source was sometimes to never accurate. There is a significant need for the promotion of existing or creation of new Internet websites as a reliable and accurate source of healthy eating, active living and healthy body weight information in relation to breast cancer risk. Women may also benefit from information that enables them to assess the reliability and credibility of Internet-based information for themselves. The need for *e-health*, defined as technology-based (e.g. computers and other digital technologies) health information and promotion efforts (Neuhauser and Kreps, 2003), is a new but fast growing phenomenon that may offer many opportunities for providing information and support to the target population.

e-health not only has the potential to provide current information, but it also has the ability to provide a broad access to customized health promotion information (Kreps, 2003). Neuhauser and Kreps (2003) have noted that communicating health risk is not enough to tip the scale towards behaviour change. Health communication is more effective when it goes beyond the rational level to reach people at an emotional level while relating to their real life context (Neuhauser and Kreps, 2003). e-Health has the ability to be used as an interactive communication tool, which would thereby engage people more personally and become an effective tool for encouraging behaviour change, especially when the information has been tailored for its audience (Neuhauser and Kreps, 2003). Bowen, Ludwig, and Bush, et al. (2003) looked at the use patterns and predictors of use for a Web-based intervention to inform women about breast cancer risk among 1350 women. The participants were either classified as having an average-risk (71%), mixed-risk (14%) or high-risk (15%) for breast cancer. Participation was not based on an interest in breast cancer risk or information needs and the participants were not self-selected. Data were presented for the 268 participants who have been in the study for six months. The finding of interest here is that perceived risk for breast cancer was a predictor of using the study's interactive and informative Internet website: women with higher perceptions of personal risk for breast cancer were 2.5 times more likely to use the website (95% CI, 1.8-3.1) (Bowen, Ludwig, and Bush, et al., 2003).

An e-health information and support service would deliver benefits and fit within the mission statements for all of the key stakeholders involved: the target population; DRFWG; the high-risk breast cancer clinics at Sunnybrook and Women's College Health Sciences Centre; and Ryerson University's School of Nutrition. An environmental scan of existing reliable Internet websites and website initiatives is required if this form of information source and support is to be considered.

Implications for Program and Service Planning

Supportive programming and services are instrumental in empowering people develop practical skills, knowledge and habits that will help influence their health risk behaviour (University Health Network Women's Health Program, 2000). The most effective programs appear to be those that provide education about breast cancer risks directly to women (Alexander et al., 1996; Buxton et al., 2003; Hebert-Croteau et al., 1997; Warner et al., 2003). In a study conducted at the TSRCC, Warner et al. (2003) provided an information aid, consisting of an audiotape and a booklet, to women with a family history of breast cancer. When evaluated by the participants of the study, there was an overwhelmingly positive response and all participants agreed that they would recommend the package to their friends. The educational intervention decreased participants' anxiety level by explaining the relative risk associated with family history of breast cancer (Warner et al., 2003). Subsequently, unnecessary referrals to high-risk clinics were diminished, and women were encouraged to seek counselling that would be appropriate to their needs. The success of this study was attributed to the inclusion of focus groups with target populations, input from a multidisciplinary team, pilot testing followed by refinement of the intervention, and testing in the field (Warner et al., 2003). Further research by Hebert-Croteau et al. (1997), Alexander et al. (1996) and Buxton et al. (2003) confirmed that educational interventions can be successful in developing accurate risk perceptions among women who may be at increased breast cancer risk.

The results of the present study indicates that the needs of women at high-risk for breast cancer will best be met through a multi-component approach involving increased access for clinic patients to dietitians and targeted programs and services.

Programming and Support Considerations

Approximately one in four participants identified healthy body weight and grocery shopping workshops and healthy cooking demonstrations at their clinic or information about active living programs in their community as programs of interest. One in five women would like to attend active living workshops offered at their clinic. Programming focusing on healthy eating and active living may well be the impetus they need to increase their physical activity. However, the survey identified that many women (40.1%) want to learn ways to fit activity into their busy schedules. Lack of time was the most popular reason for half of the survey respondents in terms of the perceived barrier to active living (44.7%). Many participants noted that family and work responsibilities were the reasons for their lack of time when it comes to being physically active. Therefore, supportive programming would need to find ways to help women address these barriers to increase the possibility of participation.

The development of information sources, programs and services will need to follow proven program planning and evaluation guidelines. The target population's topics of interest and informational and support needs, in relation to healthy eating physical activity and healthy body weight will help determine the main content for the programs and supports to be created.

CONCLUSION

In conclusion, this needs assessment creates a strong case for increased availability of reliable sources of information, as well as clinic- and community-based programs and services related to healthy eating, physical activity and healthy body weight to support women who may be at increased risk of breast cancer. Increased risk of breast cancer clearly increases a woman's motivation to make positive lifestyle modifications. However, supportive information, programs and services are instrumental in empowering people develop practical skills, knowledge, self-efficacy and habits that will in turn help influence their health risk behaviour. As Canadian women grow older, their risk will increase and so will their need for information, programming and support services focused on healthy eating, physical activity and healthy body weight. This needs assessment has uncovered many ways to support these women with their interests and efforts in breast cancer risk reduction. Care and creativity must be employed when creating future programs and services in order to reach as many women at high-risk for breast cancer. Future steps will involve advocacy for increased clinic resources and the planning, implementation and evaluation of programs to meet the needs of these women.

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Table 1**Characteristics of Participants (N = 257)**

Characteristics	# (%)
Age (n = 252)	
20 to 29 years	15 (6.0)
30 to 30 years	46 (18.3)
40 to 49 years	104 (41.3)
50 to 59 years	61 (24.2)
60 to 69 years	22 (8.7)
Over 70 years	4 (1.6)
Marital Status (n = 252)	
Married, or in a couple relationship	189 (75.0)
Divorced or widow	34 (13.5)
Single	29 (11.5)
First Language Spoken at Home (n = 248)	
English	225 (90.7)
French	4 (1.6)
Chinese	6 (2.4)
Other	13 (5.2)
Length of Time Living in Canada (n = 254)	
Lifetime	185 (72.8)
More than 10 years	59 (23.2)
5 to 10 years	6 (2.4)
Less than 5 years	4 (1.6)
Type of Community Lived In (n = 251)	
Urban	214 (85.3)
Rural	37 (14.7)
Menopause (n = 252)	
Yes	78 (31.0)
No	174 (69.0)
Mean Age (and SD) of menopause onset (n = 70)	47.6 (± 6.2)

Table 2**Number (and percent) of participants who would like to make changes in their eating habits, activity level and/or body weight to reduce their breast cancer risk**

Type of change being contemplated	Yes # (%)	No # (%)	Maybe # (%)	Does Not Apply to Me # (%)
Would you like to make changes in your eating habits to improve your health? (n = 250)	146 (58.4)	24 (9.6)	60 (24.0)	20 (8.0)
Would you like to make changes in your activity level to improve your health? (n = 255)	161 (63.1)	26 (10.2)	43 (16.9)	25 (9.8)
Would you like to change your body weight to improve your health? (n = 253)	142 (56.1)	55 (21.7)	28 (11.1)	28 (11.1)

Table 3

Top six sources of information that participants turn to when they want to know more about eating well, active living, and body weight (N = 257)

Most Popular Sources of Information Grouped by Category of Interest	Yes # (%)
EATING WELL	
1) Magazines	123 (47.9)
2) Friends and Family Members	106 (41.2)
3) Booklets and Brochures	85 (33.1)
4) Books	80 (31.1)
5) Family Doctor or Medical Specialist	78 (30.4)
6) Newspapers	74 (28.8)
ACTIVE LIVING	
1) Magazines	112 (43.6)
2) Friends and Family Members	86 (33.5)
3) Fitness professional or Personal Trainer	75 (29.2)
4) Family Doctor or Medical Specialist	57 (22.2)
5) Newspapers	52 (20.2)
6) Booklets or Brochures	49 (19.1)
BODY WEIGHT	
1) Family Doctor or Medical Specialist	114 (44.4)
2) Magazines	72 (28.0)
3) Booklets or Brochures	47 (18.3)
4) Fitness professional or Personal Trainer	46 (17.9)
5) Friends and Family Members	38 (14.8)
6) Internet websites	35 (13.6)

Table 4

Extent of participants' ability to rely on the accuracy of the eating well, active living and healthy body weight information found in magazines and newspapers, Internet websites, books, fitness clubs or personal trainers, and staff at weight loss centres (N = 257)

Information Source and Category of Interest	Ability to rely on the accuracy of information					
	% Always	% Mostly	% Sometimes	% Never	% Does Not Apply To Me	% No Response
MAGAZINES AND NEWSPAPERS						
Eating Well	1.6	35.8	58.8	.8	2.3	.8
Active Living	1.9	42.0	46.3	.4	6.6	2.7
Body Weight	1.2	28.0	55.6	3.5	8.2	3.5
INTERNET WEBSITES						
Eating Well	0	20.2	49.0	1.6	27.2	1.9
Active Living	0	25.3	40.1	.8	31.1	2.7
Body Weight	0	15.6	45.5	3.9	31.1	3.9
BOOKS						
Eating Well	1.6	42.8	43.2	0	10.9	1.6
FITNESS CLUBS OR PERSONAL TRAINERS						
Active Living	5.8	47.1	26.5	1.2	17.5	1.9
STAFF AT WEIGHT LOSS CENTRES						
Body Weight	1.9	29.6	28.0	2.7	33.9	3.9

Table 5

Participants' perceived needs in terms of programming, services and sources of information concerning eating well, active living and healthy body weight (N = 257)

Participants' Perceived Needs Grouped by Program & Service or Source of Information	Yes # (%)
PROGRAMS AND SERVICES	
1) Individual counselling with a dietitian at this clinic	92 (35.8)
2) Attending programs or services located in my community, if I knew what was available	91 (35.4)
3) Healthy body weight workshops offered at this clinic	67 (26.1)
4) Healthy cooking demos offered at this clinic; tied with Healthy grocery shopping workshops offered at this clinic	64 (24.9)
5) Information regarding active living programs in my community	59 (23.0)
6) Active living workshops offered at this clinic	51 (19.8)
SOURCES OF INFORMATION	
1) List of Internet websites that provide accurate info on eating well, active living and healthy body weight	115 (44.7)
2) Brochure or fact sheet	113 (44.0)
3) Internet website concerning eating well, active living and healthy body weight	108 (42.0)
4) Mailed newsletter	105 (40.9)
5) Electronic newsletter	98 (38.1)
6) Interactive website where qualified health professionals can answer questions	83 (32.3)

APPENDIX

Needs Assessment Survey Results

NEEDS ASSESSMENT SURVEY RESULTS

(Results shown in order of appearance in survey)

Part 1: Participant Interests

1. What does “**eating well**” mean to you?
- Results to follow
2. What does “**active living**” mean to you?
- Results to follow
3. What does a “**healthy**” **body weight** mean to you?
- Results to follow
4. Have you changed your **food choices** or **activity level** since being referred to this clinic? (*n* = 257)

Response	<i>n</i>	%	Rank
Yes	50	19.5	3
No	148	57.6	1
Somewhat	51	19.8	2
No response	8	3.1	4

Top 3 most frequently described changes:

1. Exercising more regularly (*n* = 23)
 2. Eating more fruits and vegetables (*n* = 18)
 3. Choosing low fat foods (limiting fat) (*n* = 17)
5. When it comes to **eating well** (that is, selecting and preparing healthy foods) which of the following topics would you like to know more about? Check all that apply to you. (*n* = 257)

Response	<i>n</i>	%	Rank
Eating more vegetables and fruit	79	30.7	9
Healthy vegetarian eating	60	23.3	13
Dairy products	53	20.6	14
Reading food labels	131	51.0	1
Recipes for healthy eating	131	51.0	1
Low-fat foods	101	39.3	5
Healthy eating on a budget	61	23.7	12
Fats and oils to use in meal preparation	114	44.4	2
Appropriate serving sizes	90	35.0	7
Nuts and seeds (including flax)	97	37.7	6
High fibre foods	88	34.2	8
Healthy eating after menopause	107	41.6	4
Eating well to achieve a healthy body weight	108	42.0	3
Alcohol	32	12.5	15
Organic foods	78	30.4	10
Tea	75	29.2	11

Other topics of interest	23	8.9	16
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Top 3 most frequently identified “Other” topics of interest:

1. Coffee ($n = 7$)
 2. Already well-informed regarding healthy food choices ($n = 5$)
 3. Food additives/chemicals (“toxins” in foods) ($n = 3$)
6. When it comes to **nutrition** (that is, facts about the vitamins, minerals, and other things found in foods) what topics would you like to know more about? Check all that apply to you. ($n = 257$)

Response	<i>n</i>	%	Rank
Fat, protein and carbohydrate intake	128	49.8	5
I'd like to know more about the research that has looked at whether certain things found in foods may decrease breast cancer risk	197	76.7	1
Dietary fat	79	30.7	11
Cholesterol	98	38.1	9
Trans fats	104	40.5	8
Omega 3 fatty acids	117	45.5	7
Soy proteins	85	33.1	10
Taking vitamin and mineral supplements	135	52.5	4
Vitamin and mineral requirements for women my age	156	60.7	3
The functions of certain vitamins and minerals, such as calcium, iron, vitamin C, etc	104	40.5	8
Antioxidants (substances in foods that may decrease cancer risk)	167	65.0	2
Phytochemicals (substances found in plant foods that may be good for your health)	122	47.5	6
Fibre	69	26.8	12
Other topics of interest	19	7.4	13

Top 2 most frequently identified “Other” topics of interest:

1. Herbal and natural remedies ($n = 3$)
 2. Vitamins (absorption affected by food intake, what is a good combination) ($n = 2$) and effects of soy ($n = 2$)
7. Would you like to make changes in your **eating habits** to improve your health? ($n = 257$)

Response	<i>n</i>	%	Rank
Yes	146	56.8	1
No	24	9.3	3
Maybe	60	23.3	2
Does not apply to me	20	7.8	4
No response	7	2.7	5

Top 3 most frequently described changes:

1. Eating more fruits and vegetables ($n = 23$)
2. Limiting "sweets" (sugar, simple sugars) / "junk food" ($n = 18$)
3. Limiting fat intake ($n = 17$)

8. Which of the following statements describes things that make it hard for you to eat well? Check all that apply to you. ($n = 257$)

Response	<i>n</i>	%	Rank
Does not apply to me	66	25.7	1
I need more information about eating well	25	9.7	10
It's hard to know whether information on eating well is accurate	34	13.2	8
I think that eating well takes too much preparation time	58	22.6	4
Eating well takes too much planning and organization	63	24.5	2
I need to know how to make my favourite foods more healthy	59	23.0	3
Eating well means never eating my favourite foods again	18	7.0	12
Healthy foods are too expensive to buy	21	8.2	11
I'm confused by conflicting messages about eating well	52	20.2	6
It's hard to eat well when eating out	58	22.6	3
It's hard to eat well when you are cooking for a family	35	13.6	7
Healthy foods don't taste as good as "unhealthy" foods	32	12.5	9
Other challenges	53	20.6	5

Top 2 most frequently identified "Other" challenges:

1. Lack of time ($n = 13$)
2. Lack of "will power" / "discipline" ($n = 9$)

9. When you need information about **eating well**, where do you turn? Please check all that apply to you. For the first five items below, please list some examples of the names of newspapers, magazines, books, TV programs, and Internet websites that **you** use for information on this topic. ($n = 257$)

Response	<i>n</i>	%	Rank
Newspapers	74	28.8	6
Magazines	123	47.9	1
Books	80	31.1	4
TV programs	50	19.5	8
Internet websites	62	24.1	7
Scientific journals	23	8.9	11
Booklets or brochures	85	33.1	3
Friends and family members	106	41.2	2
Family doctor or medical specialist	78	30.4	5
Registered dietitian	31	12.1	10
Pharmacist	5	1.9	15
Naturopath	19	7.4	12
Chiropractor	8	3.1	14
Fitness or weight loss centre staff	47	18.3	9
Health food store	62	24.1	7
Nutritionist	31	12.1	10
Other sources for eating well	16	6.2	13

Top 2 most frequently identified newspapers:

1. Toronto Star ($n = 33$)
2. Globe and Mail ($n = 29$)

Top 2 most frequently identified magazines:

1. Canadian Living ($n = 36$)
2. Chatelaine ($n = 29$)

Top 2 most frequently identified books:

1. Cookbooks ($n = 10$)
2. South Beach Diet ($n = 7$)

Top 2 most frequently identified TV programs:

1. The Food Network ($n = 8$)
2. Balance ($n = 7$)

Top 2 most frequently identified Internet Websites:

1. Weight Watchers ($n = 6$)
2. Google ($n = 4$)

Top 2 most frequently identified “Other” sources about Eating Well:

1. Nutrition-related courses ($n = 4$)
2. Weight Watchers ($n = 2$)

10. To what extent do you feel that you can rely upon the information about **eating well** that you find in *newspapers and magazines* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	4	1.6	4
Most of the Time	92	35.8	2
Sometimes	151	58.8	1
Never	2	0.8	5
Does not apply to me	6	2.3	3
No response	2	0.8	5

11. To what extent do you feel that you can rely upon the information about **eating well** that you find on the *Internet* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	0	0	6
Most of the Time	52	20.2	3
Sometimes	126	49.0	1
Never	4	1.6	5
Does not apply to me	70	27.2	2
No response	5	1.9	4

12. To what extent do you feel that you can rely upon the information about **eating well** that you find in *books* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	4	1.6	4
Most of the Time	110	42.8	2
Sometimes	111	43.2	1
Never	0	0	5
Does not apply to me	28	10.9	3
No response	4	1.6	4

13. When it comes to **active living** which of the following topics would you like to know more about? Check all that apply to you. (*n* = 257)

Response	<i>n</i>	%	Rank
What types of activities count as active living	99	38.5	6
How much activity I need each day	124	48.2	3
How to fit activity into my busy schedule	103	40.1	5
Inexpensive ways to increase my activity level	76	29.6	9
Which activities are the best for increasing my overall fitness level	135	52.5	1
Things my family can do together to be more active	48	18.7	12
Ideas for adding activity while I'm at work	57	22.2	10
The relationship between activity and stress reduction	107	41.6	4
Active living and menopause	87	33.9	7
Sample physical activity and exercise plans (with photos) that I could do at home	81	31.5	8
Ways to make activity part of my life	56	21.8	11
I'd like to know more about the research that has looked at whether physical activity may decrease breast cancer risk	132	51.4	2

Top 2 most frequently identified "Other" topics of interest:

1. Currently very active (*n* = 6)
 2. How to motivate self (*n* = 3)
14. Would you like to make changes in your **activity level** to improve your health? (*n* = 257)

Response	<i>n</i>	%	Rank
Yes	161	62.6	1
No	26	10.1	3
Maybe	43	16.7	2
Does not apply to me	25	9.7	4
No response	2	0.8	5

Top 3 most frequently described changes:

1. Exercise more regularly / more frequently / be more consistent (*n* = 33)
2. Increase my activity level / be more active (*n* = 28)
3. Find ways to fit activity into my busy life / find activities that fit into daily routine (*n* = 24)

15. Which of the following statements describes things that make it hard for you to increase your **activity level**? Check all that apply to you. ($n = 257$)

Response	<i>n</i>	%	Rank
Does not apply to me	59	23.0	2
I have health problems that make it hard for me to be active	28	10.9	6
I don't have time to be more active	115	44.7	1
It costs too much money to join fitness clubs or buy equipment	39	15.2	4
I'm confused by conflicting messages about how much activity I really need	15	5.8	7
Where I live, there are no programs or classes that I could join	5	1.9	8
I prefer to do activities by myself, not with a group of people	38	14.8	5
I prefer to do activities with a group of people, not by myself	28	10.9	6
Other Challenges	52	20.2	3

Top 3 most frequently identified "Other" challenges:

- Lack of energy ($n = 11$)
 - Lack of time in general ($n = 10$)
 - Lack of time due to family responsibilities and commitments ($n = 9$)
16. When you want information about **active living**, where do you turn? Please check all that apply to you. For the first five items below, please list some examples of the names of newspapers, magazines, books, TV programs, and Internet websites that **you** use for information on active living. ($n = 257$)

Response	<i>n</i>	%	Rank
Newspapers	52	20.2	5
Magazines	112	43.6	1
Books	22	8.6	11
TV programs	36	14.0	8
Internet websites	28	10.9	9
Scientific journals	12	4.7	14
Booklets or brochures	49	19.1	6
Friends and family members	86	33.5	2
Family doctor or medical specialist	57	22.2	4
Naturopath	9	3.5	15
Chiropractor	14	5.4	13
YMCA or fitness centre	47	18.3	7
Fitness professional or personal trainer	75	29.2	3
Weight loss centre staff	15	5.8	12
Other sources for active living	21	8.2	10

Top 2 most frequently identified newspapers:

1. Toronto Star ($n = 27$)
2. Globe and Mail ($n = 18$)

Top 2 most frequently identified magazines:

1. Chatelaine ($n = 20$)
2. Canadian Living ($n = 13$)

Top 2 most frequently identified books:

1. Yoga, Pilates, Relaxation and Stretching ($n = 4$ for each)
2. Diet books (i.e., Dr. Weil, Abs diet) ($n = 2$)

Top 2 most frequently identified TV programs:

1. Balance ($n = 5$)
2. CNN ($n = 2$)

Top 1 most frequently identified Internet Websites:

1. Chatelaine ($n = 2$)

Top 2 most frequently identified “Other” sources about Active Living:

1. School ($n = 3$)
2. Fitness Club, Friend and Articles ($n = 2$ for each)

17. To what extent do you feel that you can rely upon the information on **active living** that you find in *newspapers and magazines* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	5	1.9	5
Most of the time	108	42.0	2
Sometimes	119	46.3	1
Never	1	0.4	6
Does not apply to me	17	6.6	3
No response	7	2.7	4

18. To what extent do you feel that you can rely upon the information on **active living** that you get from *fitness clubs or personal trainers* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	15	5.8	4
Most of the time	121	47.1	1
Sometimes	68	26.5	2
Never	3	1.2	6
Does not apply to me	45	17.5	3
No response	5	1.9	5

19. To what extent do you feel that you can rely upon the information on **active living** that you find on the *Internet* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	0	0	6
Most of the time	65	25.3	3
Sometimes	103	40.1	1
Never	2	0.8	5
Does not apply to me	80	31.1	2
No response	7	2.7	4

20. Which of the following strategies have you used to maintain a healthy **body weight**?
Check all that apply to you. ($n = 257$)

Response	<i>n</i>	%	Rank
Choosing smaller portion sizes	156	60.7	4
Increasing my activity level	172	66.9	3
Choosing lower fat foods more often	183	71.2	2
Eating more vegetables and fruit	206	80.2	1
Eating more whole grain products (such as breads and cereals)	145	56.4	5
Support from family and friends	41	16.0	12
Looking at eating well and being active as long term activities	123	47.9	7
Thinking positively	93	36.2	9
Drinking 6 to 8 glasses of water a day	127	49.4	6
Making small changes over time	76	29.6	11
Thinking realistically about my body size	99	38.5	8
Accepting myself	83	32.3	10
Other strategies	29	11.3	13

Top 2 most frequently identified “Other” strategies:

1. Including regular activities / exercise ($n = 4$)
2. Participating in programs ($n = 4$) (Weight Watchers [$n = 2$] or Curves [$n = 2$])

21. When it comes to **your body weight**, which topics would you like to know more about? Check all that apply to you. (*n* = 257)

Response	<i>n</i>	%	Rank
What is a healthy body weight for me?	123	47.9	2
<input type="checkbox"/> Healthy ways to lose or gain weight	104	40.5	4
<input type="checkbox"/> How to lose weight and keep it off	125	48.6	1
<input type="checkbox"/> How to gain weight and keep it on	8	3.1	16
<input type="checkbox"/> The safety of popular weight loss diets	53	20.6	9
<input type="checkbox"/> I'd like to know more about research concerning weight loss diets	44	17.1	11
<input type="checkbox"/> Factors that affect my body weight	111	43.2	3
<input type="checkbox"/> How to keep a food diary	20	7.8	15
<input type="checkbox"/> Healthy body weights and menopause	90	35.0	5
<input type="checkbox"/> How often should I weigh myself?	45	17.5	10
<input type="checkbox"/> The safety of weight loss pills, powders and products	26	10.1	14
<input type="checkbox"/> The health effects of losing and regaining weight	32	12.5	13
<input type="checkbox"/> Dealing with body image issues	40	15.6	12
<input type="checkbox"/> Understanding disordered eating	17	6.6	
<input type="checkbox"/> The role of low-fat, low-carbohydrate and low-calorie foods in weight loss	82	31.9	8
<input type="checkbox"/> I'd like to know more about the research that has looked at whether higher body weight may increase breast cancer risk	86	33.6	7
<input type="checkbox"/> How to stay motivated to eat well and lose weight	88	34.2	6
<input type="checkbox"/> Other topics of interest	7	2.7	17

Top 2 most frequently identified "Other" topic of interest:

1. Already have a healthy body weight (body weight is not a concern) (*n* = 3)
2. Best food choices (i.e., top 10 fruits and vegetables) (*n* = 1) and how to motivate daughter to exercise more (*n* = 1)

22. Would you like to change **your body weight** to improve your health? (*n* = 257)

Response	<i>n</i>	%	Rank
Yes	142	55.3	1
No	55	21.4	2
Maybe	28	10.9	3
Does not apply to me	28	10.9	3
No response	4	1.6	4

Top 2 most frequently described changes:

1. Lose weight (*n* = 91)
 - Among those who wanted to lose weight (some mentioned the following):
 - i. lose 10-19 lbs (*n* = 22); lose 20-39 lbs (*n* = 13)

- ii. to feel better about self/appearance ($n = 10$); for health benefits ($n = 6$)
2. Tone muscle or increase muscle strength ($n = 13$)
23. In your opinion, what factors make it hard for women to achieve and maintain healthy body weights?
- Results to follow
24. When you want information about **body weight**, where do you turn? Please check all that apply to you. For the first five items below, please list some examples of the names of newspapers, magazines, books, TV programs, and Internet websites that **you** use for body weight information. ($n = 257$)

Response	<i>n</i>	%	Rank
Newspapers	30	11.7	7
<input type="checkbox"/> Magazines	72	28.0	2
<input type="checkbox"/> Books	28	10.9	8
<input type="checkbox"/> TV program	26	10.1	10
<input type="checkbox"/> Internet websites	35	13.6	6
<input type="checkbox"/> Scientific journals	16	6.2	12
<input type="checkbox"/> Brochures or booklets	47	18.3	3
<input type="checkbox"/> Friends and family members	38	14.8	5
<input type="checkbox"/> Family doctor or medical specialist	114	44.4	1
<input type="checkbox"/> Registered dietitian	15	5.8	13
<input type="checkbox"/> Naturopath	9	3.5	15
<input type="checkbox"/> Chiropractor	6	2.3	16
<input type="checkbox"/> YMCA or fitness centre	27	10.5	9
<input type="checkbox"/> Fitness professional or personal trainer	46	17.9	4
<input type="checkbox"/> Weight loss centre staff	21	8.2	11
<input type="checkbox"/> Other sources of information	14	5.4	14

Top 2 most frequently identified newspapers:

1. Toronto Star ($n = 13$)
2. Globe and Mail ($n = 8$)

Top 2 most frequently identified magazines:

1. Chatelaine ($n = 11$)
2. Canadian Living ($n = 9$)

Top 2 most frequently identified books:

1. Dr. Phil ($n = 12$)
2. Fit for Life, Cookbooks ($n = 2$ for each)

Top 2 most frequently identified TV programs:

1. Balance ($n = 3$)
2. News ($n = 2$)

Top 2 most frequently identified Internet websites:

1. Weight Watchers, Google, General Search ($n = 3$ for each)

and Government (i.e., Canada's Food Guide) ($n = 3$)

Top 2 most frequently identified "Other" source about Body Weight:

1. Do not seek information ($n = 10$)
 2. School, workplace and TOPS (Take Off Pounds Sensibly) ($n = 1$ for each)
25. To what extent do you feel that you can rely upon the dieting and healthy **body weight** information that you find in *newspapers and magazines* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	3	1.2	5
Most of the time	72	28.0	2
Sometimes	143	55.6	1
Never	9	3.5	4
Does not apply to me	21	8.2	3
No response	9	3.5	4

26. To what extent do you feel that you can rely upon the dieting and healthy **body weight** information that you find on the *Internet* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	0	0	5
Most of the time	40	15.6	3
Sometimes	117	45.5	1
Never	10	3.9	4
Does not apply to me	80	31.1	2

27. To what extent do you feel that you can rely upon the dieting and healthy **body weight** information that you get from *staff at weight loss centres* to be accurate? ($n = 257$)

Response	<i>n</i>	%	Rank
Always	5	1.9	6
Most of the time	76	29.6	2
Sometimes	72	28.0	3
Never	7	2.7	5
Does not apply to me	87	33.9	1
No response	10	3.9	4

Part 2: Participant Needs

28. Which of the following **sources of information** concerning eating well, active living and healthy body weight would you be interested in using? Check all that apply to you. (*n* = 257)

Response	<i>n</i>	%	Rank
<input type="checkbox"/> A mailed newsletter	105	40.9	4
<input type="checkbox"/> An electronic (e-mail) newsletter	98	38.1	5
<input type="checkbox"/> A brochure or fact sheet	113	44.0	2
<input type="checkbox"/> An Internet website concerning these topics	108	42.0	3
<input type="checkbox"/> An interactive Internet website through which you could ask questions of qualified health professionals concerning these topics	83	32.3	6
<input type="checkbox"/> A workshop focusing on eating well	47	18.3	12
<input type="checkbox"/> A workshop focusing on active living	45	17.5	13
<input type="checkbox"/> A workshop focusing on healthy body weight	47	18.3	12
<input type="checkbox"/> A series of workshops focusing on eating well, active living and healthy body weight	50	19.5	10
<input type="checkbox"/> A video or DVD providing information on eating well	48	18.7	11
<input type="checkbox"/> A video or DVD providing active living information	43	16.7	14
<input type="checkbox"/> A video or DVD providing information on achieving healthy body weights	48	18.7	11
<input type="checkbox"/> A list of community programs and services that provide accurate information on these topics	54	21.0	9
A list of Internet websites that provide accurate information on these topics	115	44.7	1
A list of books that provide accurate information on these topics	78	30.4	8
Other sources of information	14	5.4	15

Top 2 most frequently identified "Other" sources of information:

1. Healthy cooking recipes/cookbook (*n* = 2)
2. A list of accessible health professionals or recommended medical specialists that includes a list of their specialty (*n* = 2)

29. Which of the following **programs and services** would you be interested in using? Check all that apply to you. (*n* = 257)

Response	<i>n</i>	%	Rank
<input type="checkbox"/> Healthy cooking demonstrations offered at this clinic	64	24.9	4
<input type="checkbox"/> Healthy grocery shopping workshops offered at this clinic	64	24.9	4
<input type="checkbox"/> Active living workshops offered at this clinic	51	19.8	6
<input type="checkbox"/> Healthy body weight workshops offered at this clinic	67	26.1	3
<input type="checkbox"/> I would be interested in attending programs or services located in my community, if I knew what was available	91	35.4	2
<input type="checkbox"/> Discussion groups organized for patients at this clinic	19	7.4	8
<input type="checkbox"/> Individual counseling with a dietitian at this clinic	92	35.8	1
<input type="checkbox"/> Group counseling with a dietitian at this clinic	40	15.6	7
<input type="checkbox"/> I'd like to know more about active living programs in my community	59	23.0	5
<input type="checkbox"/> Other programs and services of interest	15	5.8	9

Top 2 most frequently identified "Other" programs and services of

interest:

(Most frequently mentioned additional comments were related to some of the challenges they would have if they were to participate in a program or service offered at their clinic)

- "I live out of town or too far away to attend any programs/services" (*n* = 7)
- No time to attend any programs/services (*n* = 2)

30. How much money would you be willing to pay to attend a cooking demonstration or purchase a video or DVD? (*n* = 257)

Response	<i>n</i>	%	Rank
Nothing	61	23.7	1
\$5 or less	17	6.6	7
\$10 or less	44	17.1	3
\$15 or less	35	13.6	5
\$20 or less	45	17.5	2
\$25 or less	37	14.4	4
No response	18	7.0	6

31. If you were to attend a workshop or demonstration at this clinic, what day of the week would be best for you? Check all days that would work for you. (*n* = 257)

Response	<i>n</i>	%	Rank
Monday	55	21.4	5
Tuesday	60	23.3	4
Wednesday	62	24.1	3

Thursday	65	25.3	2
Friday	32	12.5	6
Saturday	97	37.7	1

32. If you were to attend a workshop of demonstration at this clinic, what time of day would be best for you? Check all times that would work for you. ($n = 257$)

Response	<i>n</i>	%	Rank
Morning	80	31.1	2
Afternoon	60	23.3	3
Evening (after 5 pm)	94	36.6	1

Part 3: Please tell us a little bit about yourself

33. How long have you lived in Canada? ($n = 254$)

Response	<i>n</i>	%	Rank
All of my life	185	72.8	1
Less than 5 years	4	1.6	4
5 to 10 years	6	2.4	3
More than 10 years	59	23.2	2

34. What language is most often spoken in your home? ($n = 248$)

Response	<i>n</i>	%	Rank
English	225	90.7	1
French	4	1.6	2
Chinese	6	2.4	3
Farsi (Persian)	2	0.8	4

35. How old are you? ($n = 252$)

Response	<i>n</i>	%	Rank
Under 20 years	0	0	7
20 to 29 years	15	6.0	5
30 to 39 years	46	18.3	3
40 to 49 years	104	41.3	1
50 to 59 years	61	24.2	2
60 to 69 years	22	8.7	4
Over 70 years	4	1.6	6

36. Have you experienced menopause? That is, have your menstrual periods stopped? ($n = 252$)

Response	<i>n</i>	%	Rank
Yes	78	31.0	2
No	174	69.0	1

Mean age menstrual periods stopped: 47.6 ± 6.2 years ($n = 70$)

37. What is your marital status? ($n = 252$)

Response	<i>n</i>	%	Rank
Married, or in a couple relationship	189	75	1
Divorced, widow	34	13.5	2
Single	29	11.5	3

38. Would you describe the community in which you live as ($n = 251$)

Response	<i>n</i>	%	Rank
Urban (a city or town of more than 30,000 people)	214	83.3	1
Rural (a town or municipality of less than 30,000 people)	37	14.4	2

39. How far is it (in either minutes **or** kilometres) from your home to this clinic? ($n = 240$)

Response	<i>n</i>	%	Rank
< 30 minutes	78	32.5	1
30 to 45 minutes	61	25.4	2
>45 minutes to 1 hour	48	20.0	4
> 1 hour	53	22.1	3

OR

($n = 55$)

Response	<i>n</i>	%	Rank
< 10 kilometres	15	27.3	2
11 to 20 kilometres	5	9.1	4
21 to 30 kilometres	1	1.8	6
31 to 40 kilometres	3	5.5	5
41 to 50 kilometres	7	12.7	3
51 to 60 kilometres	3	5.5	5
61 or more kilometres	21	38.2	1

40. Altogether, what was the annual income for your **household** for 2003?
(Please include yourself and all other people who live in your home). ($n = 221$)

Response	<i>n</i>	%	Rank
Less than \$20,000	5	2.3	8
\$21,000 to \$40,000	20	9.0	6
\$41,000 to \$60,000	24	10.9	5
\$61,000 to \$80,000	39	17.6	2
\$81,000 to \$100,000	35	15.8	3
\$101,000 to \$120,000	28	12.7	4
\$121,000 to \$140,000	14	6.3	7
More than \$140,000	56	25.3	1

41. Clinic location of survey (not part of questionnaire) ($n = 257$)

Clinic Location	<i>n</i>	%	Rank
Henrietta Banting Breast Centre	84	32.7	2
Toronto Sunnybrook Regional Cancer Centre	173	67.3	1