

Research

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Facilitating Physical Activity Among Women with Breast Cancer

Summary

Recent evidence suggests that breast cancer survivors who are physically active live longer and have a reduced chance of cancer recurrence.

This article presents research that explores strategies for facilitating breast cancer patients and survivors to do more physical activity.

Key Terms

Breast cancer is a malignant tumor that starts from cells of the breast. A malignant tumor is a group of cancer cells that may invade several areas of the body. Breast cancer occurs almost entirely in women.

Chemotherapy is a method of treating breast cancer by using drugs. Chemotherapy drugs slow or even stop the cancer cells from growing, multiplying, or spreading to other parts of the body.

Pedometers are small electronic devices with mechanical sensors that count how many steps a person takes.

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In Alberta, it is expected that 2,000 women will be diagnosed with breast cancer in 2009.

The good news is early diagnosis and improved treatments have led to more women surviving breast cancer. However, women with breast cancer still have side effects, both while on treatments and even after their treatments are finished. Side effects such as fatigue, nausea, and cognitive problems are common. These side effects often lead to a reduced quality of life.



Physical Activity Has Unique Benefits for Breast Cancer Patients and Survivors

Fortunately, physical activity can reduce these side effects. In fact, recent research has shown that regular physical activity is not only safe for breast cancer patients and survivors but also offers long-term benefits for them related to survival and cancer recurrence. In addition to immediate benefits such as improving fatigue and quality of life, physical activity can:

- reduce their chance of dying from cancer
- reduce their risk of having a cancer recurrence
- increase their lifespan (compared to survivors who are not as active)

One of the first studies that showed these benefits was published in the *Journal of the American Medical Association* by researchers at Harvard University. Their study looked at close to 3,000 women who at one point had breast cancer. Their study found that survivors who walked three to five hours per week at a brisk pace had better survival rates (i.e., lived longer) compared to women who were less active.

More studies have since emerged showing that active survivors have a reduced risk of breast cancer recurrence as well as a reduced risk of dying from breast cancer when compared to those who are inactive.

The Problem: Women With Breast Cancer Are Not Doing Enough Physical Activity

Despite all the benefits, many breast cancer patients and survivors are still not physically active. We just completed a study that found only 34% of breast cancer survivors in northern Alberta (who were about three years post-diagnosis) were meeting public health guidelines for physical activity. Another study from Australia found that only 13% of women on chemotherapy treatment were physically active.

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Facilitating Physical Activity Among Women with Breast Cancer (Continued from front)

The Activity Promotion Trial: Getting Survivors Active

We set out to research tools and resources to help breast cancer survivors become more physically active. Our study randomly chose 377 breast cancer survivors from northern Alberta, and we followed them for 12 weeks. All survivors in this study had already completed their treatments.

We found that physical activity resources such as a printed exercise guide (*Exercise for Health: An Exercise Guide for Breast Cancer Survivors*) and a pedometer helped survivors improve their physical activity levels by almost 90 minutes per week compared to survivors who did not receive these resources. We also found that these simple tools helped survivors maintain their physical activity levels six months after the end of the study. And these higher physical activity levels were linked to improved quality of life and less fatigue.

The demand among breast cancer survivors for these tools was obvious. Our study was designed to accommodate 400 survivors, and we had to turn away another 310 who also wanted to be in the study.

Fortunately, with the support of the Alberta Cancer Board's Division of Medical Affairs and Community Oncology, we were able to send out 3,000 copies of the printed exercise guide to cancer centres across Alberta.

Future Research: Getting Patients Active


Previous research suggests that the best time to introduce women with breast cancer to physical activity strategies may be right after they are diagnosed and about to start their treatments. The majority of survivors, when asked, would have preferred to receive information about physical activity during this time period.

In early 2009 we received a grant from the Canadian Institutes of Health Research to explore this. The PROMoting ACTIVITY during ChEMotherapy (PROACTIVE) Trial will look at ways to improve physical activity levels in women who have breast cancer and who are receiving chemotherapy.

Eligible patients will be from the Tom Baker, Medicine Hat, and Lethbridge Cancer Centres. Patients from rural areas will also be able to participate, as the physical activity resources for the trial will be mailed to the participants.

Practical Implications

Research shows that physical activity is safe, feasible, and helpful for most breast cancer patients and survivors. We need to make women aware of the health benefits they will receive from being physically active both during and after their treatments.

The real challenge will be making physical activity programs available to patients and survivors. To do that, we will need a planned effort from clinicians, health practitioners, health program planners, exercise professionals, and those in research. Doing so will help to ensure that all breast cancer patients and survivors, both urban and rural, are offered evidence-based programs that can improve their quality of life and ultimately prolong their lives. 

References for this article are available at: <http://www.centre4activeliving.ca/publications/research.html>

About the Author and the Organization

Dr. **Jeff Vallance** is an assistant professor in the Centre for Nursing and Health Studies (CNHS) at **Athabasca University**. He is also an Alberta Heritage Foundation for Medical Research population health investigator and a Canadian Institutes of Health Research new investigator.

Jeff's research explores the determinants of physical activity behaviour and the health outcomes associated with physical activity behaviour in cancer survivors. He is also involved in developing and evaluating resources for promoting physical activity in the cancer context.

Jeff is a part of the Health Behaviour Research Group (HBRG) within the CNHS. The HBRG focuses on advancing the scientific understanding of the interrelationships among the behavioural, biological, and psychosocial aspects of physical activity and health behaviour in various populations.

With more than 32,000 undergraduate students and 3,000 graduate students, Athabasca University is Canada's largest distance education provider and a world leader in the field of distance education. Athabasca University is committed to excellence in teaching, research and scholarship, and to being of service to the general public.



Developing BANKS, a Nutrition Survey for Canadians

Summary

This article provides an overview of the development and scientific validation of a survey to measure Canadians' nutrition behaviours and how these behaviours relate to their attitudes and knowledge around nutrition. This survey is called the Canadian BANKS (Behaviours, Attitudes and Nutrition Knowledge Survey).

Key Terms

The **Behaviours, Attitudes and Nutrition Knowledge Survey (BANKS)** collects information from Canadians about their nutrition behaviours, attitudes, and knowledge. The survey is currently in development.

The **Diet and Health Knowledge Survey (DHKS)** has a similar purpose but a different audience. It collects information from Americans about their food choices and knowledge of the U.S. government's diet guidelines.

Reliability refers to the consistency of the above surveys. Reliability can range between 0 and 1. A score of 1 would mean a survey provides the exact same measure over time no matter who takes the survey.

Validity means the survey is truthful and measures what it is supposed to measure. Reliability is a component of validity.

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People who eat five or more servings of fruits and vegetables a day have lower rates of chronic diseases such as heart disease and cancer. They are also less likely to be obese than those who eat fewer than three servings per day (Khaw et al., 2008; Statistics Canada, 2004).

Yet over half of Canadians still eat less than the daily fruit and vegetable intake recommended by *Canada's Food Guide* (Garriguet, 2006).

To help Canadians achieve healthy eating habits, the government has produced educational materials such as *Canada's Food Guide* and the Healthy U website. But do these initiatives increase Canadians' knowledge about food? If so, does this knowledge result in people making better food choices?

A survey that collected this type of data would be important in dietary and obesity research. Dietitians and other health professionals could use the survey to identify gaps in the nutrition knowledge of Canadians and also to evaluate the effectiveness of materials such as *Canada's Food Guide*.

However, no such survey for the Canadian population is currently available.

The U.S. Diet and Health Knowledge Survey (DHKS)

The U.S. Department of Agriculture developed the Diet and Health Knowledge Survey (DHKS) to collect information from Americans about the factors that influence their food choices as well as their knowledge and attitudes about the U.S. government's Dietary Guidelines for Americans (Obayashi, Bianchi, & Song, 2003).

Questions in the DHKS look at:

- behaviours related to fat intake, food safety, and food label use
- attitudes about food intake and the importance of certain nutrients
- knowledge related to diet, health, fat, and food labels

Researchers have used the survey to see if Americans were aware of diet guidelines on fat intake and to see how well they were following the guidelines (Capps, Cleveland, & Park, 2002). Researchers have also used the survey to see if a three-hour education program could improve college students' nutrition knowledge and eating patterns (Pires, Pumerantz, Silbart, & Pescatello, 2008).

Could We Use the American DHKS in Canada?

A survey is only useful if its validity (truthfulness) and reliability (consistency) have been demonstrated. Without this, we are left to wonder if the survey provides trustworthy findings.

The DHKS was found to be sufficiently valid and reliable for use in the U.S., but that doesn't mean it is equally valid and reliable for use in Canada. While we Canadians are similar to Americans, there are subtle differences that make us unique such as our views around health policy and different messaging in our governments' food guides.

Developing the Canadian BANKS (Behaviours, Attitudes and Nutrition Knowledge Survey)

An important task of our research was to scientifically validate a survey similar to the DHKS for use in Canada, a survey that collects information on Canadians' food choice behaviours, attitudes towards nutrition, and nutrition knowledge. (Continued on page 4)

Developing BANKS, a Nutrition Survey for Canadians *(Continued from page 3)*

This survey is the Canadian BANKS (Behaviours, Attitudes and Nutrition Knowledge Survey). Before we could test the BANKS for validity and reliability, we had to develop the survey. We chose the DHKS as a model and adapted it for Canadian use.

Adapting the DHKS for Canadians involved experts across the country. These experts were members of the Dietitians of Canada and also represented academic institutions from Nova Scotia, Ontario, Manitoba, Saskatchewan, and Alberta. The experts evaluated, adapted, corrected, and deleted questions. They also added new questions. By the last stage of development, 65% of the original DHKS questions had been deleted or changed.

What Information Can the BANKS Give Us?

The BANKS collects information on Canadians' *behaviours* having to do with purchasing food, using food labels, consuming food and water, and physical activity patterns.

BANKS questions addressing *attitudes* ask respondents to agree or disagree with statements about healthy eating and nutrient-disease relationships.

A comprehensive set of *nutrition knowledge* questions asks respondents about their knowledge of *Canada's Food Guide*; food sources for key nutrients; food labels; the interrelationships between health, nutrition, and physical activity; and guidelines for consuming fluid.

Testing BANKS

To confirm the validity and reliability of the BANKS, 209 college students participated in survey testing.

The BANKS was found to be valid and reliable for the students, but further research is required to evaluate the survey for use with other Canadian populations (e.g., children, older adults, people with specific chronic diseases, etc.). When the survey has been tested in many different populations and circumstances, its trustworthiness will be strengthened.

Practical Implications

Carefully consider what surveys or information-collecting tools you use. Does the tool suit your audience? The team of Canadian experts who worked on the BANKS found that the American DHKS was not a useful measurement of nutrition knowledge for Canada. Canadian values, culture, government and laws differ from those of our American neighbour. 🍷

References for this article are available at: <http://www.centre4activeliving.ca/publications/research.html>

About the Authors

Lynne Lafave, PhD, is an assistant professor at Mount Royal in the Faculty of Health and Community Studies. She holds a PhD in nutrition science from the University of Manitoba and is an academic affiliate member of the Dietitians of Canada.

Her research focuses on the relationship between nutrition education and health. Specifically, she has been examining the factors influencing food choice behaviours as well as tools (such as the BANKS) to measure these factors. She is also investigating the potential role of nutrition education in the management of stress.

Mark Lafave, PhD, is an associate professor at Mount Royal in the Faculty of Health and Community Studies. He holds a PhD in kinesiology from the University of Calgary. His research interests are in the field of measurement and evaluation with a particular focus on practical, performance-based examinations in athletic therapy. He created an online assessment tool that can be used in a wireless environment to assess athletic therapy students working on clinical internships. The validity and reliability of the tool was statistically established as well as the tool's effectiveness as a teaching instrument.



About the Organizations

Research and scholarship are an integral part of **Mount Royal's** mission. Faculty are engaged in research that creates cutting-edge knowledge, focuses heavily on interdisciplinary work and external partnerships, and benefits our communities—local, provincial and national.

Dietitians of Canada is a national professional association that represents almost 6,000 members who are recognized leaders in advancing health through food and nutrition.



Dietitians of Canada
Les diététistes du Canada